ORDER NO. R1-2020-0010
NPDES NO. CA0023345
WDID NO. 1B82037OSON
(Modified in accordance with Amendment Order R1-2021-0042 on December 2, 2021)

WASTE DISCHARGE REQUIREMENTS

FOR THE

WINDSOR WATER DISTRICT
WASTEWATER TREATMENT, RECLAMATION, AND DISPOSAL FACILITY
SONOMA COUNTY

The following Permittee is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Permittee Information

Permittee	Windsor Water District
Name of Facility	Windsor Wastewater Treatment, Reclamation, and Disposal Facility
Facility Address	8400 Windsor Road Windsor, CA 95492 Sonoma County
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	2.25 million gallons per day (mgd) (average dry weather design flow) 7.2 mgd (peak weekly wet weather design flow)

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Disinfected Tertiary Treated Municipal Wastewater	--	--	Town-owned effluent storage ponds

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
002	Disinfected Tertiary Treated Municipal Wastewater	38° 29' 39"	122° 51' 05"	Mark West Creek (at Trenton-Healdsburg Road Bridge)

Table 3. Administrative Information

This Order was adopted on:	August 20, 2020
This Order shall become effective on:	October 1, 2020
This Order shall expire on:	September 31, 2025
The Permittee shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, (CCR) and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	October 1, 2024
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, North Coast Region have classified this discharge as follows:	Major

I, Matthias St. John, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, North Coast Region, on **August 20, 2020, and Order No. R1-2021-0042 on December 2, 2021.**

_____
Matthias St. John, Executive Officer

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TABLES

ATTACHMENTS

I. FACILITY INFORMATION

Information describing the Windsor Water District (Permittee) Wastewater Treatment, Reclamation, and Disposal Facility (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board), finds:

A. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (U.S. EPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit authorizing the Permittee to discharge into waters of the United States at the discharge locations described in Tables 2 and 3 subject to the Waste Discharge Requirements (WDRs). This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. Basis and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the Permittee's application, monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for the requirements in this Order and is hereby incorporated into this Order and constitutes Findings for this Order. Attachments A through E are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/ requirements in subsections III.E, III.F, IV.C, V.B, and VI.C.5.a of this Order and sections VII, IX.A, IX.B, and X.E of the MRP are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Notification of Interested Parties. The Regional Water Board has notified the Permittee and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

E. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

III. DISCHARGE PROHIBITIONS

A. The discharge of any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.

B. Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.

C. The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

D. The discharge or recycling use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).

E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land and creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

F. The discharge of waste to land that is not owned by the Permittee, governed by City ordinance, or under agreement to use by the Permittee, or for which the Permittee has explicitly permitted such use, is prohibited, except for use for fire suppression as provided in title 22, sections 60307(a) and 60307(b) of the California Code of Regulations (CCR).

G. The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Resources Control Board (State Water Board) or another Regional Water Board is prohibited.

H. The average daily dry weather flow of waste through the Facility in excess of 1.9 mgd is prohibited until such time as additional storage and/or total recycled water capacity has been added to accommodate a higher average dry weather flow, not to exceed 2.25 mgd. The peak weekly wet weather flow of waste through the Facility shall not exceed 7.2 mgd. Compliance with this prohibition shall be determined as defined in sections VII.K and VII.L of this Order.

I. The discharge of waste to the Russian River and its tributaries is prohibited during the period from May 15 through September 30 of each year.

J. During the period from November 1 through April 30 of each year, discharges of advanced treated wastewater to Mark West Creek, a tributary to the Russian River, shall not exceed 10 percent of the natural flow of Mark West Creek.

In addition, during the periods of October 1 through October 30 and May 1 through May 14 of each year, discharges of advanced treated wastewater to Mark West Creek shall not exceed 1 percent of the natural flow of Mark West Creek. For the purposes of this Order, the natural flow in Mark West Creek shall be that flow measured at the Trenton-Healdsburg Bridge[1] minus the discharge flow of wastewater from the City of Santa Rosa, Santa Rosa Regional Water Reuse System, Laguna Treatment Plant (Santa Rosa Facility) as reported daily to the Permittee's operations staff by the Santa Rosa Facility operations staff. For the purposes of this Order, compliance with this discharge prohibition shall be determined as follows:

1. The discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, 10 percent of the most recent daily flow measurement of Mark West Creek as measured at the Trenton-Healdsburg Bridge during the period of November 1 and April 30, or more than 1 percent of the most recent daily flow measurement of Mark West Creek during the periods of October 1 through October 30 and May 1 through May 14. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am and 12:00 midnight; and,

2. In no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed 10 percent of the total volume of Mark West Creek at the Trenton-Healdsburg Bridge in the same calendar month during the period of November 1 through April 30, nor 1 percent of the total volume of Mark West Creek in the same calendar month during the periods of October 1 through October 30 and May 1 through May 14.

3. During periods of discharge, the flow gage shall be read at least once daily, after which the discharge flow rate shall be set for no greater than 10 percent (November 1 through April 30) or 1 percent (October 1 through October 30 and May 1 through May 14) of the flow of Mark West Creek at the time of the daily reading. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume comparisons shall be based on the first day of the calendar month to the date when the discharge ceased for the season.

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1 The Permittee shall use United States Geological Survey (USGS) Gauge No. 11455800 (Mark West Creek at Trenton-Healdsburg Bridge) for reporting Mark West Creek flows. Alternatively, the Permittee may utilize the Windsor Water District gauge at the Trenton-Healdsburg Bridge after submitting a report documenting that the gauge is calibrated and maintained in a manner that produces accurate flow measurements and upon approval of the Regional Water Board Executive Officer.

K. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited under Water Code section 13375.

L. The discharge of septage to a location other than an approved septage receiving station is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001 and 002

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Storage Pond)

a. The discharge of advanced treated wastewater shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, as described in the MRP (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered, and disinfected as defined in title 22, division 4, chapter 3, of the CCR.

Table 4. Effluent Limitations – Discharge Point 001 (Monitoring Location EFF-001)

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maximum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
pH	standard units	--	--	--	6.0	9.0

Table Notes:

1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent. Percent removal shall be determined from the monthly average value of influent wastewater concentration in comparison to the monthly average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Locations INF-001 and EFF-001, respectively.

c. Disinfection. Disinfected effluent discharged from the Facility through Discharge Point 001 to the storage pond shall not contain coliform bacteria exceeding the following concentrations, as measured in each of the operating disinfection channels at Monitoring Location EFF-001:

i. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters (mL) using the daily[2] bacteriological results of the last 7 days for which analyses have been completed[3];

ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and

iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

2. Final Effluent Limitations – Discharge Point 002 (Discharge to Mark West Creek)

a. The discharge of advanced treated wastewater shall maintain compliance with the following effluent limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002, as described in the MRP (Attachment E).

Table 5. Effluent Limitations – Discharge Points 002 (Monitoring Location EFF-002)

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maxi-mum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
pH	standard units	--	--	--	6.5	8.5
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
Lead Impact Ratio[2]	Ratio	1	--	1	--	--
Nitrogen, Total (as N)[3]	mg/L	10.5	--	--	--	--

[2] The daily result is the highest result when multiple UV channels are operational.
[3] See section VII.H of this Order regarding compliance with bacteriological limitations.

Table Notes:

1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.
2. The Lead Impact Ratio (LIR) is calculated as the ratio of the lead concentration in the effluent and the applicable lead standard (AMEL and MDEL). Attachment H is a PDF example of the calculator that will be sent to the Permittee to determine compliance with the AMEL/MDEL LIR. For each of the applicable lead standards, Attachment G provides the variable AMEL and MDEL lead standards used in calculating the LIR. The LIR is the lead effluent limit and must be reported in the self-monitoring reports in addition to lead concentrations in the effluent and hardness concentration in the receiving water. Monitoring for effluent lead and receiving water hardness must be conducted concurrently in order for the LIR to be calculated properly.
3. The sum of the concentrations of nitrate nitrogen, nitrite nitrogen, total organic nitrogen, and ammonia.

b. Total Phosphorus. **Effective October 1, 2022**, there shall be no net loading of total phosphorus to the water bodies of the greater Laguna de Santa Rosa watershed.[4]

Compliance with this Total Phosphorus effluent limitation shall be determined in accordance with section VII.N (Interim Effluent Limitations) and VII.O (Final Effluent Limitation) of this Order.

c. Acute Toxicity. There shall be no acute toxicity in treated wastewater discharged to Mark West Creek. The Permittee will be considered in compliance with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:

i. Minimum for any one bioassay: 70 percent survival; and

ii. Median for any three or more consecutive bioassays: at least 90 percent survival.

Compliance with this effluent limitation shall be determined in accordance with section VII.I of this Order and section V.A of the MRP (Attachment E).

d. Chronic Toxicity. As measured at Monitoring Location EFF-001, there shall be no chronic toxicity in the effluent when discharging to Mark West Creek.

[4] For purposes of this Order, the greater Laguna de Santa Rosa watershed consists of the Laguna de Santa Rosa, Santa Rosa Creek, and Mark West Creek Hydrologic Subareas (HSAs), as mapped in the Basin Plan. The lower reaches of the greater Laguna de Santa Rosa watershed include lower Mark West Creek and the mainstem Laguna de Santa Rosa.

Compliance with this narrative chronic toxicity effluent limitation shall be determined in accordance with section VII.J of this Order and sections V.B and V.C of the MRP (Attachment E).

3. Interim Effluent Limitations – Discharge Point 002 (Discharge to Mark West Creek)

a. Total Phosphorus. See the Compliance Schedule for the Final Effluent Limitations for Total Phosphorus in section VI.C.7.a of this Order for the applicable interim effluent limitations for total phosphorus. Compliance with the interim effluent limitations shall be determined in accordance with section VII.N of this Order.

B. Land Discharge Specifications and Requirements – Not Applicable

This Order does not authorize discharges to land.

C. Water Recycling Specifications and Requirements – Discharge Points 001 (Monitoring Location REC-001)

1. Water Recycling Specifications

a. When discharging to the recycled water system at Discharge Points 003A, 003B, the Geysers Recharge Project at Discharge Point 004, and the Joint Use Program at Discharge Point 005, the Permittee shall maintain compliance with the following specifications at Discharge Point 001, with compliance measured at Monitoring Location REC-001, as described in the attached MRP (Attachment E). All tertiary recycled water shall be adequately oxidized, filtered, and disinfected as defined in title 22, division 4, chapter 3 of the CCR.

Table 6. Recycling Discharge Specifications – Discharge Point 001 (Monitoring Location REC-001)

Parameter	Units	Discharge Specifications				
		Average Monthly [1]	Average Weekly[1]	Maxi-mum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	--	--
pH	standard units	--	--	--	6.0	9.0

Parameter	Units	Discharge Specifications				
		Average Monthly [1]	Average Weekly[1]	Maxi-mum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--

Table Notes:

1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

b. Disinfection. Disinfected effluent discharged from the Facility through Discharge Point 001 to the storage pond shall not contain coliform bacteria exceeding the following concentrations, as measured in each of the operational disinfection channels at Monitoring Location REC-001:

i. The median concentration shall not exceed an MPN of 2.2 per 100 mL using the bacteriological results of the last 7 days for which analyses have been completed[5;]

ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period; and

iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

2. Water Recycling Requirements

a. This Order includes water recycling requirements that apply to the production of recycled water. The Permittee has submitted a Notice of Intent (NOI) to obtain coverage under State Water Board Order No. WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use (Recycled Water General Order). The Permittee shall maintain coverage under the Recycled Water General Order for recycled water use.

b. The Permittee shall comply with applicable state and local requirements regarding the production of recycled water, including requirements of Water Code sections 13500-13577 (Water Reclamation) and State Water Board, Division of Drinking Water (DDW) regulations at title 22, sections 60301 – 60355 of the CCR (Water Recycling Criteria).

c. The Permittee shall implement its DDW-accepted title 22 Recycled Water Engineering Report (and any subsequent amendments thereto).

[5] See section VII.H of this Order regarding compliance with bacteriological limitations.

The Permittee shall submit revisions and updates to the title 22 Recycled Water Engineering Report to reflect any changes in operations and recycled water management or new use types.

3. **Water Recycling Capacity.** The Permittee shall maintain, at a minimum, a storage capacity of 149 million gallons and maintain the capability to irrigate 393 equivalent acres[6] per year at an average daily dry weather flow of 1.9 mgd. Prior to allowing an increase in the permitted water recycling flows, the Permittee shall submit to the Regional Water Board an engineering report detailing modifications to the treatment and/or recycling capacity. The engineering report shall demonstrate the amount of storage and irrigation capacity necessary to manage flows in compliance with permit conditions and that the Permittee has increased its total storage capacity and associated irrigation areas to gain authorization to increase its average dry weather flow above 1.9 mgd (up to the Facility design capacity of 2.25 mgd).

4. **Joint Use Program.** The Permittee proposes to develop and implement a program of shared recycled water facility use (Joint Use Program) with the ALWSZ Wastewater Treatment Facility, which is operated by the Sonoma County Water Agency, and the City of Santa Rosa, as further described in section II.F of the Fact Sheet. The Joint Use Program is expected to entail transfers of recycled water between the Permittee's recycled water distribution system and the tertiary storage ponds owned by ALWSZ and/or the City of Santa Rosa. The transfers of disinfected tertiary recycled water may occur between the Permittee, the ALWSZ, and the City of Santa Rosa tertiary storage ponds using the recycled water distribution system of any of the three agencies. Under this program, the Permittee's recycled water comingled with ALWSZ and/or City of Santa Rosa recycled water would be used to meet irrigation demands in the Permittee's recycled water system and reduce discharges to surface water.

   Prior to implementation of the Joint Use Program, the Permittee shall submit to the Regional Water Board Executive Officer a report including the final design details and operational modifications required for implementation; a revised water balance for the Permittee's storage, recycling, and disposal system; documentation of California Environmental Quality Act (CEQA) compliance; and recycled water transfer and use agreements. The Permittee's report shall also include an operations and management plan that identifies measures that will be implemented to ensure that recycled water transferred from ALWSZ and/or the City of Santa Rosa will not be discharged to surface waters. The Joint Use Program will be effective after the Regional Water Board Executive Officer provides written approval.

[6] An acre of land that uses 30" of irrigation water per season. For example, an acre of vineyard uses approximately 5 inches per year, while pasture or golf course turf uses approximately 30 per year. Thus, 1 acre of pasture or golf course is considered 1 equivalent acre, while 6 acres of vineyard would be considered 1 equivalent acre.

D. Other Requirements

1. Filtration Process Requirements

a. Filtration Rate. The rate of filtration through the tertiary filters, as measured at Monitoring Location INT-001A, shall not exceed 5 gallons per minute per square foot of surface area or other filtration rates authorized in writing by the Regional Water Board Executive Officer and under conditions recommended by DDW.

b. Turbidity. The effluent from the advanced wastewater treatment process filters shall at all times be filtered such that the filtered effluent does not exceed any of the following specifications at Monitoring Location INT-001B prior to discharge to the disinfection unit:

i. An average of 2 NTU during any 24-hour period;

ii. 5 NTU more than 5 percent of the time during any 24-hour period; and

iii. 10 NTU at any time.

c. Filtered effluent in excess of the turbidity specifications shall not enter the recycled water distribution system. The Permittee's SCADA programming must be updated, by **October 1, 2020**, to include high and high-high turbidity alarms that trigger emergency shut off valves (V7 and V8). Filtered effluent in excess of turbidity specifications shall be automatically diverted to an upstream treatment process unit or to emergency storage as soon as the Permittee is aware of the exceedance. The Permittee shall provide notification of non-compliance with the filtration process requirements as required in section IX.A.2.c of the MRP (Attachment E).

2. Disinfection Process Requirements

The Permittee shall operate the ultraviolet light (UV) disinfection system in accordance with the operating protocol and technical and administrative requirements set out by DDW in order to ensure compliance with disinfection effluent limitations specified in section IV.A.1.c and disinfection water recycling specifications in section IV.C.1.b of this Order. Specifically, the Permittee shall:

a. Disinfect tertiary treated wastewater using a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. At a minimum, the Permittee shall demonstrate a 99.99 percent removal and/or inactivation of MS2 through the UV disinfection system only.

b. Provide continuous, reliable monitoring of flow, UV transmittance, UV intensity, UV dose, and UV power at Monitoring Location INT-002, and turbidity at Monitoring Location INT-001B at all times of effluent production. The Permittee must demonstrate compliance with the turbidity and UV dose requirement.

c. Operate the UV disinfection system to provide a minimum UV dose of 100 millijoules per square centimeter (mJ/cm^2) at all times at Monitoring Location INT-002, unless otherwise approved by DDW. This dose shall apply to recycled water for delivery to use sites that require "disinfected tertiary recycled water." All other use sites and surface water discharges do not require a dose of 100 mJ/cm^2.

d. Ensure that the UV transmittance (at least 254 nanometers) in the wastewater does not fall below 55 percent of maximum at any time, unless otherwise approved by DDW.

e. Visually inspect the quartz sleeves and cleaning system components per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and check the efficacy of the cleaning system.

f. Wipe/clean the quartz sleeves at least every 30 days following the manufacturer's procedures to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall be increased as necessary to ensure compliance with permit requirements such as UV dose and total coliform organism requirements.

g. Operate the UV disinfection system in accordance with an approved operations and maintenance plan, which specifies clearly the operational limits and responses required for critical alarms. The Permittee shall maintain a copy of the approved operations plan at the treatment plant and make the plan readily available to operations personnel and regulatory agencies. The Permittee shall post a quick reference plant operations data sheet at the treatment plant. The data sheet shall include the following information:

i. The alarm set points for secondary and tertiary turbidity, high and low flow, UV dose and transmittance, UV lamp operation hours, and power.

ii. The values of secondary and tertiary turbidity, high and low flow, UV dose and transmittance, UV lamp operation hours, and power when flow must be diverted to waste.

iii. The values of high daily and 7-day rolling median total coliform when an operational response must be taken.

iv. The required frequency of calibration for all meters measuring turbidity, flow, UV transmittance, and power.

v. The required frequency of mechanical cleaning/wiping and equipment inspection.

vi. The UV lamp age tracking procedures and replacement intervals.

h. Replace lamps every 9,400 hours of operation, or sooner, if there are indications that the lamps are failing to provide adequate disinfection. The Permittee shall maintain lamp age and lamp replacement records for a time period consistent with the record retention requirements in the Standard Provisions (Attachment D, Section IV).

i. Properly calibrate flow meters and UV transmittance (UVT) monitors to ensure proper disinfection.

j. Inspect the UVT meter and check against a reference bench-top unit weekly to document accuracy.

k. Recalibrate the on-line UVT analyzer by a procedure recommended by the manufacturer if the on-line analyzer UVT reading (expressed in percent transmittance) varies from the bench-top spectrophotometer UVT reading (expressed in percent transmittance) by 2 percentage points or more.

l. Operate the UV disinfection system with a built-in automatic reliability feature that triggers the following critical alarm set points:

i. Conditions that should trigger an alarm and startup the next available row of UV banks or UV channel shall include the following

(a) Electronic lamp controller failure

(b) Multiple lamp failure

(c) Low UV transmittance below 69.1%

(d) UVT signal failure

ii. Conditions that should divert effluent to waste shall include the following:

(a) Power failure

(b) UV channel(s) water level higher than 62 inches

(c) UV channel(s) water level lower than 57.5 inches

(d) UV dose below 100 mJ/cm2

(e) UVT below 55%

m. Not allow equivalent or substitutions of equipment to occur without an adequate demonstration of equivalent disinfection performance to the satisfaction and approval of DDW.

3. **Storage Ponds.** Any new storage ponds constructed by the Permittee shall construct ponds in a manner that protects groundwater. Prior to construction or use of any new storage ponds, or repurposing of existing ponds for recycled water storage, the Permittee shall submit to the Regional Water Board Executive Officer for review and approval, a technical report that includes design proposals and a technical evaluation that demonstrates that the pond design complies with the Water Code and Basin Plan. Pond design and operation plans must include features and best management practices (BMPs) to protect groundwater and prevent exceedances of groundwater quality objectives.

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Receiving water conditions not in conformance with the limitations are not necessarily a violation of this Order. Compliance with receiving water limitations shall be measured at monitoring locations described in the MRP (Attachment E). The Regional Water Board may require an investigation and/or may consider other available information to determine cause and culpability prior to asserting that a violation has occurred.

A. Surface Water Limitations

Discharges from the Facility shall not cause the following in the receiving water:

1. The discharge shall not cause the dissolved oxygen (DO) concentration of the receiving water to be depressed below 9.0 mg/L daily and 11.0 mg/L as a rolling average. In those waterbodies for which the aquatic life-based DO requirements are unachievable due to natural conditions[7], site-specific background DO requirements can be applied[8] as water quality objectives by calculating the daily minimum DO necessary to maintain 85% DO saturation during the dry season and 90% DO saturation during the wet season under site salinity, site atmospheric pressure, and

[7] Natural conditions are conditions or circumstances affecting the physical, chemical, or biological integrity of water that are not influenced by past or present anthropogenic activities.

[8] Upon approval from the Regional Water Board Executive Officer

natural receiving water temperature9. In no event may controllable factors reduce the daily minimum DO below 6.0 mg/L.

2. The discharge shall not cause the pH of receiving waters to be depressed below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.5 units from that which occurs naturally.

3. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.

4. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

5. The discharge shall not cause receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

6. The discharge shall not cause receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

7. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.

8. The discharge shall not cause bottom deposits in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.

9. The discharge shall not cause receiving waters to contain concentrations of biostimulatory substances that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses. Compliance with effluent limitations for total nitrogen and total phosphorus established in sections IV.A.2.a, IV.A.2.b, IV.A.3 and VI.C.7, respectively, of this Order will satisfy this requirement.

10. The discharge shall not cause receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plants, animals, or aquatic life.

[9] The method(s) used to estimate natural temperatures for a given waterbody or stream length must be approved by the Executive Officer and may include, as appropriate, comparison with reference streams, simple calculation, or computer models.

Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the Regional Water Board.

11. The following temperature limitations apply to the discharge to the receiving waters:

a. When the receiving water is below 58°F, the discharge shall not cause an increase of more than 4°F in the receiving water, and shall not increase the temperature of the receiving water beyond 59°F. No instantaneous increase in receiving water temperature shall exceed 4°F at any time.

b. When the receiving water is between 59°F and 67°F, the discharge shall not cause an increase of more than 1°F in the receiving water. No instantaneous increase in receiving water temperature shall exceed 1°F at any time.

c. When the receiving water is above 68°F, the discharge shall not cause an increase in temperature of the receiving water.

d. Additionally, the discharge shall not cause the 7-day average of the daily maximum receiving water temperature to exceed 64.4°F.

12. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge shall not cause bioaccumulation of pesticide concentrations in bottom sediments or aquatic life.

13. The discharge shall not cause receiving waters to contain concentrations of pesticides in excess of Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, division 4, chapter 15, article 5.5 of the CCR.

14. The discharge shall not cause receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise affect beneficial uses.

15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board, as required by the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

16. The discharge shall not cause concentrations of chemical constituents to occur in excess of MCLs and secondary MCLs (SMCLs) established for these pollutants in title 22, division 4, chapter 15, article 4, section 64431, article 5.5, section 64444, and article 16, section 64449 of the CCR.

17. The discharge shall not cause receiving waters to contain radionuclides in concentrations which are deleterious to human, plant, animal or aquatic life, nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal or indigenous aquatic life, nor in excess of the MCLs and SMCLs established for these pollutants in title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.

18. The bacteria water quality objective for all waters where the salinity is equal to or less than 1 part per thousand (ppth) 95 percent or more of the time during the calendar year is: a six week rolling geometric mean of *Escherichia coli* (*E. coli*) not to exceed 100 colony forming units (cfu) per 100 milliliter (mL), calculated weekly, and a statistical threshold value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

B. Groundwater Limitations

1. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause degradation of groundwater quality unless a technical evaluation is performed that demonstrates that any degradation that could reasonably be expected to occur, after implementation of all regulatory requirements (e.g., Basin Plan) and reasonable best management practices (BMPs), will not violate groundwater quality objectives or cause impacts to beneficial uses of groundwater.

2. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause or contribute to levels of chemical constituents in groundwater that exceed the MCL and SMCL provisions established for these pollutants in title 22, division 4, chapter 15, article 4, section 64431, article 5.5, section 64444, and article 16 section 64449 of the CCR.

3. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause or contribute to levels of radionuclides in groundwater in concentrations that cause nuisance or adversely affect beneficial uses, nor in excess of the MCLs and SMCLs established for these pollutants in the CCR, title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.

4. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

5. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause the median of the most probable number of coliform organisms over any 7-day period to exceed 1.1 MPN/100 mL or colony/100 mL in groundwaters used for domestic or municipal supply (MUN).

6. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause groundwater to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions**. The Permittee shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Water Board Standard Provisions**. The Permittee shall comply with the following Regional Water Board standard provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

   a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Permittee to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance.
   Additionally, certain violations may subject the Permittee to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

   b. In the event the Permittee does not comply or will be unable to comply for any reason, with any prohibition, final effluent limitation, recycled water specification, other specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment infrastructure, breach of pond containment, sanitary sewer overflow, recycled water main break or equivalent release, irrigation runoff, etc., that results in a discharge to a drainage channel or a surface water, the Permittee shall notify Regional Water Board staff within 24 hours of having knowledge of such non-compliance. Spill notification and reporting shall be conducted in accordance with section V.E of Attachment D and section X.E of the MRP (Attachment E).

B. Monitoring and Reporting Program Requirements

The Permittee shall comply with the MRP, included as Attachment E to this Order, and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

a. Standard Revisions. If applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. Reasonable Potential. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes or has the reasonable potential to cause or contribute to, an excursion above a water quality criterion or objective applicable to the receiving water.

c. Whole Effluent Toxicity. As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a narrative or numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

d. 303(d)-Listed Pollutants. If an applicable total maximum daily load (TMDL) (see Fact Sheet, section III.D) program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL may be modified or imposed to conform this Order to the TMDL requirements.

e. Water Effects Ratios (WERs) and Metal Translators. A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable, with the exception of copper, for which a site-specific WER of 3.42 has been used. If the Permittee performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators and submits a report that demonstrates that WER or translator studies were performed in accordance with U.S. EPA or other approved guidance, this Order may be reopened to modify the effluent limitations for the applicable constituents.

f. Nutrients. This Order contains effluent limitations for total nitrogen, and total phosphorus and effluent monitoring for nutrients (ammonia, unionized ammonia,

nitrate, nitrite, organic nitrogen, and total phosphorus).
If new water quality objectives for nutrients are established, if monitoring data indicate the need for new or revised effluent limitations for any of these parameters, or if new or revised methods for compliance with effluent limitations for any of these parameters are developed, this Order may be reopened and modified to include new or modified effluent limitations or other requirements, as necessary.

g. **Salt and Nutrient Management Plans (SNMPs)**. The State Water Board adopted the Water Quality Control Policy for Recycled Water (Recycled Water Policy) in 2009 and amended it in 2013 and 2018. The Recycled Water Policy recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or sub-regional SNMPs rather than through imposing requirements solely on individual recycled water projects. This Order may be reopened to incorporate provisions consistent with any SNMP(s) adopted by the Regional Water Board or subsequent amendments to the Recycled Water Policy.

h. **Title 22 Engineering Report**. This Order implements title 22 requirements to protect public health. If the Permittee's title 22 engineering report requires modifications to this Order to adequately implement title 22, this Order may be reopened and modified as necessary.

i. **Mixing Zone Study**. This Order may be reopened to modify the whole effluent toxicity testing requirements if the Permittee submits a dilution/mixing zone study that demonstrates to the satisfaction of the Regional Water Board Executive Officer that the conditions of section 1.4.2.2 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) for granting an aquatic life mixing zone are satisfied.

j. **New Discharge Location**. This Order may be reopened to authorize a new surface water discharge location and establish associated permit conditions if the Permittee submits a new Report of Waste Discharge and a complete Antidegradation Analysis demonstrating that discharges from the new discharge location are consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

k. **Pathogens**. This Order includes monitoring requirements for E. coli bacteria in order to develop data needed to assess whether or not the Permittee's discharge is a source of pathogens as defined in the Regional Water Board's Russian River

Pathogen TMDL adopted in August 2019.

This Order may be reopened if monitoring data indicate the need for additional monitoring requirements or water quality-based effluent limitations for bacteria to implement the Russian River Watershed Pathogen TMDL.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Pathogen Special Study. The Permittee shall conduct a study to assess the Facility's ability to comply with the bacteria water quality objective in Section V.A.18 of this Order and required actions outlined in Table 4 of the Russian River Watershed Pathogen TMDL Action Plan (Pathogen TMDL) adopted by the Regional Water Board in August 2019. By **August 1, 2021**, the Permittee shall submit, for Regional Water Board Executive Officer approval, a work plan for conducting the study by. A final report summarizing the results of the Permittee's ability to comply with the bacteria water quality objective and the Pathogen TMDL, and, if necessary, a plan and schedule for achieving compliance with the Pathogen TMDL shall be submitted to the Regional Water Board in conjunction with the ROWD by **July 31, 2024**. If monitoring[10] demonstrates that the Permittee cannot comply with the bacteria water quality objective and the Pathogen TMDL the plan of compliance shall identify any other studies necessary to demonstrate compliance with the Pathogen TMDL (i.e., study to determine whether the discharge includes pathogens of human origin).

b. Engineering Evaluation of Recycled Water and Wastewater Storage Ponds and Discharge Outfall. The Permittee shall submit for Regional Water Board Executive Officer approval, a work plan and schedule by **August 1, 2021**, for conducting an engineering evaluation of all recycled water and wastewater storage ponds and infrastructure to assess the condition of each storage pond and discharge outfall and associated infrastructure (e.g., piping, pumps, valves, etc.). Upon completion of the engineering evaluation, a final report shall be submitted to the Regional Water Board in conjunction with the ROWD on **July 31, 2024**. The final report shall describe the condition of each recycled water and wastewater storage pond, outfall, and associated infrastructure, identify a plan for addressing any deficiencies identified and to ensure proper on-going maintenance, and provide an updated map of discharge outfalls and associated infrastructure.

c. Disaster Preparedness Assessment Report and Action Plan. Natural disasters, extreme weather events, sea level rise, and shifting precipitation

[10] If the Permittee's Pathogen Special Study work plan includes monitoring for bacteria sufficient enough to allow Regional Water Board staff to perform a reasonable potential analysis, then the monitoring for e. coli listed in Tables E-3 and E-4 will be replaced by the monitoring in the work plan

patterns, some of which are projected to intensify due to climate change, have significant implications for wastewater treatment and operations.
Some natural disasters are expected to become more frequent and extreme according to the current science on climate change. In order to ensure that Facility operations are not disrupted, compliance with conditions of this Order are achieved, and receiving waters are not adversely impacted by permitted and unpermitted discharges, the Permittee shall submit a Disaster Preparedness Assessment Report and Action Plan to the Regional Water Board by August 1, 2023, for Executive Officer review and approval.

The Permittee shall: (1) conduct an assessment of the wastewater treatment facility, operations, collection, and discharge systems to determine areas of short- and long-term vulnerabilities related to natural disasters and extreme weather, including sea level rise and other conditions projected by climate change science, if applicable; the assessment shall consider, as applicable, impacts to plant operations due to changing influent and receiving water quality, rising sea level, storm surges, fires, floods, earthquakes, tsunamis, back-to-back severe storms, and other extreme conditions that pose a risk to plant operations and water quality; (2) identify control measures needed to protect, improve, and maintain wastewater infrastructure, waste discharge compliance, and receiving water quality in the event of a natural disaster or, if applicable, under conditions resulting from climate change; (3) develop a schedule to implement necessary control measures. Control measures shall include, but are not limited to, emergency procedures, contingency plans, alarm/notification systems, training, backup power and equipment, and the need for planned mitigations to ameliorate potential risks associated with extreme weather events and changing conditions resulting from climate change; and (4) implement the necessary control measures per the approved schedule of implementation.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program (PMP)

i. The Permittee shall, as required by the Executive Officer, develop and conduct a PMP, as further described below, when there is evidence (e.g., sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

(a) The concentration of the pollutant is reported as “Detected, but Not Quantified” (DNQ) and the effluent limitation is less than the reporting limit (RL);

(b) A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.5.

ii. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(a) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

(b) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

(c) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

(d) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

(e) An annual status report that shall be submitted as part of the Annual Facility Report due **March 1st** to the Regional Water Board and shall include:

(1) All PMP monitoring results for the previous year;

(2) A list of potential sources of the reportable pollutant(s);

(3) A summary of all actions undertaken pursuant to the control strategy; and

(4) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. Proper Operation and Maintenance. This Order (Attachment D, Standard Provision I.D) requires that the Permittee 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 Permittee to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory quality control and appropriate quality assurance procedures.

b. Operation and Maintenance Manual. The Permittee shall maintain an updated Operation and Maintenance (O&M) Manual for the operational components of the Facility. The Permittee shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. The Permittee shall operate and maintain the Facility in accordance with the most recently updated O&M Manual. The O&M Manual shall be readily available to operating personnel onsite and for review by state or federal inspectors. The O&M Manual shall include the following.

i. Description of the Facility's organizational structure showing the number of employees, duties and qualifications, and plant attendance schedules (daily, weekends and holidays, part-time, etc.). The description should include documentation that the personnel are knowledgeable and qualified to operate the Facility so as to achieve the required level of treatment at all times.

ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.

iii. Description of laboratory and quality assurance procedures.

iv. Process and equipment inspection and maintenance schedules.

v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Permittee will be able to comply with requirements of this Order.

vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

c. Operating Records. Operating records shall be maintained at the reclamation plant or a central depository within the operating agency. These shall include: all analyses specified in the reclamation criteria; records of operational problems, plant and equipment breakdowns, and diversions to emergency storage or disposal; all corrective or preventive action taken.

Process or equipment failures triggering an alarm shall be recorded and maintained as a separate record file. The recorded information shall include the time and cause of failure and corrective action taken.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems
The Permittee has coverage under, and is separately subject to, the requirements of State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems, as amended by Order No. WQ 2013-0058-EXEC. As such, the Permittee provides notification and reporting of SSOs in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any revisions thereto for operation of its wastewater collection system.

b. Source Control and Pretreatment Provisions

i. The Permittee shall submit a source control program technical report to the Regional Water Board Executive Officer that describes the Permittee's source control program, including identification of staff and budget resources, and a written plan for ensuring that the Permittee is adequately assessing industrial, commercial, and residential discharges to the Facility. The written plan shall address how the Permittee will implement the specific source control provisions identified in items ii. (a) through (e), immediately below.
The source control program technical report shall be submitted to the Regional Water Board Executive Officer by **August 1, 2021.**

ii. The Permittee shall perform source control functions and provide a summary of source control activities conducted in the Annual Report (due **March 1st** to the Regional Water Board). Source control functions and requirements shall include the following:

(a) Implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system.

(b) If waste haulers are allowed to discharge to the Facility, establish a waste hauler permit system, to be reviewed by the Executive Officer, to regulate waste haulers discharging to the collection system or Facility.

(c) Industrial Waste Survey (IWS)

(1) The Permittee shall conduct an IWS of all the industrial users (IUs) in the service area of the Facility to determine whether any IUs are subject to pretreatment standards specified in 40 C.F.R. part 403.

The Permittee shall also perform a priority pollutant scan[11] of the influent to the Facility. At a minimum, the IWS must identify the following for each industrial user and zero-discharging categorical industrial user: whether it qualifies as a significant user; the average and peak flow rates; the SIC code; any pretreatment being implemented by each industrial user; and whether or not the Permittee has issued a permit to any of the identified industrial users. The IWS and priority pollutant monitoring is required during the first discharge season of the permit term.

(2) The results of the IWS and priority pollutant monitoring shall be submitted to the Regional Water Board in a written report no later than **July 30, 2024**. The written report shall include a certification report indicating whether the Facility receives pollutants from any IU that would require the Permittee to establish a pretreatment program in accordance with 40 C.F.R. part 403.

(d) Perform public outreach to educate industrial, commercial, and residential users about the importance of preventing discharges of industrial and toxic wastes to the wastewater treatment plant, at least once per year.

(e) Perform on-going inspections and monitoring, as necessary, to ensure adequate source control.

iii. In the event that the Permittee identifies industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the wastewater treatment plant, or the Regional Water Board or its Executive Officer determines that circumstances warrant pretreatment requirements in order to prevent interference [40 C.F.R. §403.3(j)] with the wastewater treatment Facility or Pass Through [40 C.F.R. §403.3(n)], then:

(a) The Permittee shall notify the Regional Water Board **within 30 days** after there are discharges that trigger the pretreatment requirements;

[11] The priority pollutant scan shall include California Toxics Rule (CTR) and title 22 pollutants. CTR pollutants are those pollutants identified in the California Toxics Rule at 40 C.F.R. section 131.38, and title 22 pollutants are those pollutants for which DDW has established MCLs at title 22, division 4, chapter 15, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals) of the CCR. Duplicate analyses are not required for pollutants that are identified as CTR and title 22 pollutants.

(b) The Permittee shall submit a revised ROWD and the pretreatment program for the Regional Water Board's review and approval as soon as possible, but not more than one year after the Permittee's notification to the Regional Water Board of the need for pretreatment requirements being triggered;

(c) The Permittee shall enforce the federal categorical pretreatment standards on all categorical industrial users (CIUs);

(d) The Permittee shall notify each CIU of its discharge effluent limits. The limits must be as stringent as the pretreatment standards contained in the applicable federal category (40 C.F.R. part 400-699). The Permittee may develop more stringent, technology-based local limits if it can show cause; and

(e) The Permittee shall notify the Regional Water Board if any CIU violates its discharge effluent limits.

iv. The Regional Water Board retains the right to take legal action against an industrial user and/or the Permittee where a user fails to meet the approved applicable federal, state, or local pretreatment standards.

v. The Regional Water Board may amend this Order, at any time, to require the Permittee to develop and implement an industrial pretreatment program pursuant to the requirements of 40 C.F.R. part 403 if the Regional Water Board finds that the Facility receives pollutants from an IU that is subject to pretreatment standards, or if other circumstances so warrant.

c. Sludge Disposal and Handling Requirements

i. Sludge, as used in this Order, 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. Biosolids refers to sludge that has been treated, tested, and demonstrated to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and state regulations.

iii. The use and disposal of biosolids shall comply with all of the land application and disposal requirements in 40 C.F.R. part 503, which are enforceable by the U.S. EPA, not the Regional Water Board. If during the life of this Order, the state accepts primacy for implementation of 40 C.F.R. part 503, the Regional Water Board may also initiate enforcement where appropriate.

iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as daily landfill cover shall meet the applicable requirements of 40 C.F.R. part 258. In the annual self-monitoring report, the Permittee shall report the amount of sludge placed in a landfill and the landfill(s) which received the sludge or biosolids.

v. The Permittee shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that may adversely affect human health or the environment.

vi. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.

vii. Solids and sludge treatment and storage sites shall have facilities adequate to divert surface water runoff from adjacent areas, protect the boundaries of the site from erosion, and prevent drainage from the treatment and storage site. Adequate protection is defined as protection from a design storm with a 100-year recurrence interval and 24-hour duration.

viii. The discharge of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the state.

d. Biosolids Management

For any discharge of biosolids from the Facility, the Permittee shall comply with the following requirements:

i. For the land application of biosolids as soil amendment within the North Coast region, the Permittee shall obtain or maintain coverage under the State Water Board Water Quality Order No. 2004-0012-DWQ General Waste Discharge Requirements for the Discharge of Biosolids to Land or Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities, or

ii. Alternatively, the Permittee may dispose of biosolids at another appropriately permitted facility.

iii. New sludge treatment and storage facilities must comply with the requirements of the Water Code and title 27 of the CCR for the protection of water quality.

e. Operator Certification

Supervisors and operators of municipal wastewater treatment facilities shall possess a certificate of appropriate grade in accordance with title 23, CCR, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment facility operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by DDW where water recycling is involved.

f. Adequate Capacity

If the Facility will reach capacity within 4 years, the Permittee shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest 30-day flow. The Permittee shall demonstrate that adequate steps are being taken to address the capacity problem. The Permittee shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, **within 120 days after providing notification to the Regional Water Board,** or within 120 days after receipt of Regional Water Board notification that the Facility will reach capacity within 4 years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR title 23, section 2232].

6. Other Special Provisions

a. Discharge and Water Recycling System Operations and Management Plan. The Discharge and Water Recycling System Operations and Management Plan defines the Permittee's procedures and protocol to maximize reclamation and minimize discharges to surface waters. The Permittee submitted a Discharge and Water Recycling System Operations and Management Plan in September 2014 for operation of the effluent storage, recycling, and surface water disposal system. The Permittee shall update the plan to reflect changes in operation and updated information on storage, recycling, and disposal capacity. An updated plan shall be submitted to the Regional Water Board Executive Officer for approval by **August 1, 2022**.

The Permittee shall implement the updated plan upon approval by the Regional Water Board Executive Officer.

b. Capacity Increase Engineering Report

At such time as the Permittee makes improvements or other changes that increase the treatment and/or total reclamation capacity, the Permittee shall submit to DDW and the Regional Water Board an updated Recycled Water Engineering report, prepared in accordance with title 22, documenting that treatment and/or total recycled water capacity has been added. This report shall document that the Permittee exceeds the total recycled water capacity of 193 million gallons for Geysers recharge and maintains the capability to irrigate at least 200 million gallons per year at 2.25 mgd ADWF. The Executive Officer will inform the Permittee within 90 days after receipt of the report that the additional capacity is recognized by the Regional Water Board.

c. Storm Water

For the control of storm water discharges from the Facility, the Permittee shall seek separate authorization to discharge under the requirements of the State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (or subsequent revisions of the Storm Water General Permit), which is not incorporated by reference in this Order.

7. Compliance Schedules

a. Compliance Schedule for the Final Effluent Limitation for Total Phosphorus

The Permittee shall implement activities according to the following schedule to achieve compliance with the effluent limitation for total phosphorus established in section IV.A.2.b of this Order.

Table 7. Schedule for Compliance with Final Effluent Limitation for Total Phosphorus[1]

Task	Task Description	Due Date
1	The Permittee shall submit an annual report that identifies the specific activities, programs, and/or approved projects that the Permittee plans to implement to reduce and/or offset discharges of total phosphorus into Mark West Creek for the following discharge season. The report shall also contain the following information regarding the previous discharge season: report on activities, programs, and/or approved projects implemented or completed, documentation that demonstrates that the required reduction/ offset was achieved, including an accounting of the total amount of phosphorus discharged (measurements and/or calculations) and the total amount of the phosphorus reduced and/or offset.[2,3]	October 1, annually
2	The Permittee shall have completed all activities, programs, and/or approved projects resulting in the reduction and/or offset of at least 50 percent of the Permittee's estimated mass discharge of total phosphorus for the 2020/2021 discharge season.	October 1, 2020
3	The Permittee shall have completed all activities, programs, and/or approved projects resulting in the reduction and/or offset of at least 66 percent of the Permittee's estimated mass discharge of total phosphorus for the 2021/2022 discharge season.	October 1, 2021
4	The Permittee shall have completed all activities, programs, and/or approved projects resulting in the reduction and/or offset of at least 100 percent of the Permittee's estimated mass discharge of total phosphorus for the 2022/2023 discharge season, and annually thereafter.	October 1, 2022, and annually thereafter

Table Notes:

1. The Permittee shall notify the Regional Water Board, in writing, no later than 14 days following each interim date of compliance or noncompliance with the interim requirements. Each task in this table requires submittal of a written report. To comply with this requirement, each report should identify whether the Permittee is in compliance or noncompliance with the task being reported on.
2. Each year, the Permittee must offset the required percentage of total phosphorus. Projects and activities that reduce the amount of total phosphorus that is discharged will result in a smaller amount of phosphorus to be offset.
3. In accordance with this annual report requirement, the Permittee will be completing reduction and offset activities in advance of the discharge season during which those reductions/offsets will be claimed. The first annual report, due on October 1, 2020, must describe the Permittee's plan to reduce and offset discharges of phosphorus during the period of October 2020 through September 2021, so that reduction/offset projects have been completed in advance of the discharge season that begins on October 1, 2021. Subsequent annual reports must describe the Permittee's reduction/offset plan for the next year and provide a report of activities that were completed in the previous year.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below.

A. General

Compliance with effluent limitations for priority pollutants, when effluent limitations have been established, shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Permittee shall be deemed out of compliance with effluent limitations if the concentration of a pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

B. Multiple Sample Data

When determining compliance with an AMEL for priority pollutants, and more than one sample result is available, the Permittee shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Permittee shall compute the median in place of the arithmetic mean in accordance with the following procedure.

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two middle values unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ and a value of zero shall be used for the ND or DNQ value in the median calculation for compliance purposes only.
   Using a value of zero for DNQ or ND samples does not apply when performing reasonable potential or antidegradation analyses.

C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B, above, for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Permittee will be considered out of compliance for that calendar month. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar month, the Permittee shall calculate the median of all sample results within that month for compliance determination with the AMEL as described in section VII.B, above.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B, above, for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Permittee will be considered out of compliance for that calendar week. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar week, the Permittee shall calculate the median of all sample results within that week for compliance determination with the AWEL as described in section VII.B, above.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by subsection B, above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Permittee will be considered out of compliance for that parameter for that 1 day only within the reporting period.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter for that single sample.
Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total sum of time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total sum of time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

H. Bacteriological Limitations

1. **Median (Total Coliform)**. The median is the central tendency concentration of the pollutant. The data set shall be ranked from low to high, ranking the ND concentrations lowest, followed by quantified values. The median value is determined based on the number of data points in the set. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, the median is the average of the two middle values, unless one or both points are ND or DNQ, in which case the median value shall be the lower of the two middle data points. DNQ is lower than a detected value, and ND is lower than DNQ.

   Compliance with the 7-day median will be determined as a rolling median during periods when sampling occurs more frequently than weekly. During periods when sampling is weekly, this requirement shall apply to each weekly sample. Compliance with total coliform limitations will be based on the maximum value of all operational channels operating each day of sampling. For ND results, the MDL shall be used to calculate the 7-day rolling median.

2. **Six-week Rolling Geometric Mean (*E. coli*).** The rolling geometric mean shall be calculated using at least 5 sample results over a 6-week period from a site using the following formula:

   GM = $\sqrt[n]{(x1)(x2)(x3)\ldots(xn)}$, where x is the sample value and n is the number of samples taken.[12]

3. **Statistical Threshold Value (*E. coli*).** (1) The data set shall be ranked from low to high, ranking any ND concentrations lowest, followed by quantified values. (2) The number of sample results should then be multiplied by 90 percent then rounded up to the nearest whole number. (3) Count the values in the data set starting from lowest to highest until the number indicated in step (2) is reached. (4) To be compliant with the statistical threshold value in Receiving Water Limitation V.A.18, all sample results less than the point described in step 3 must be less than 100 MPN/100 mL.

[12] A minimum of three samples over a six-week period is necessary to calculate the geometric mean. When less than three samples are taken in a six-week period, compliance with the *E. coli* receiving water objective shall be determined using the Statistical Threshold Value (STV). If the Permittee samples less than three times during a six-week period, compliance shall be assessed by comparing the single sample results to the STV.

I. Acute Toxicity Limitations

Compliance with the three-sample median acute toxicity effluent limitation shall be determined when there is a discharge, by calculating the median percent survival of the three most recent consecutive samples meeting all test acceptability criteria collected from Monitoring Location EFF-002.

Compliance with the accelerated monitoring and TRE provisions shall constitute compliance with the acute toxicity requirements, as specified in the MRP (Attachment E, sections V.A and V.C).

J. Chronic Toxicity

Compliance with the accelerated monitoring and TRE provisions specified in the MRP (Attachment E, sections V.B.8 and V.C) shall constitute compliance with the narrative chronic toxicity requirement specified as Effluent Limitation IV.A.2.d. The MRP, section V.B.6.a, further describes how a determination of Pass/Fail shall be made.

K. Average Dry Weather Flow

Compliance with the average dry weather flow prohibition in section III.H of this Order will be determined once each calendar year by evaluating all flow data collected in a calendar year. The flow through the Facility, measured daily and averaged monthly, must be 1.9 gpd or less for the month with the lowest average monthly flow, until such time as the Regional Water Board Executive Officer determines that sufficient treatment, storage, and/or recycled water capacity has been added to accommodate the full average dry weather design capacity of 2.25 mgd.

L. Peak Weekly Wet Weather Flow

The peak weekly wet weather flow in section III.H of this Order will be determined by evaluating flow through the Facility at Monitoring Location INF-001, measured daily and average weekly. No average weekly flow shall exceed 7.2 mgd.

M. Interim Effluent Limitations for Total Phosphorus

The compliance schedule in section VI.C.7.a of this Order includes interim effluent limitations that require the annual load be reduced by 50 percent in the 2020/2021 discharge season and 66 percent in the 2021/2022 discharge season. Compliance with the interim effluent limitations shall be determined as follows:

1. Determine the load reduction due to reduced phosphorus concentration and revised discharge operations as follows:

   $LRr = 1- (V_A \times C_A/V_H \times C_H) \times 100\%$

   Where:

   LRr = load reduction (percent) resulting from reduced phosphorus concentration and revised discharge operations

   V_A = Actual volume discharged in million gallons (MG) (metered)

   C_A = Actual concentration of total phosphorus discharged in mg/L

   V_H = Historical volume discharged in MG (modeled)

   C_H = Historical concentration of total phosphorus discharged (2.7 mg/L)

2. The difference, if any, between the load reduction calculated in section VII.L.1 above and the required load reduction (50 percent or 66 percent) will be met using offsets as described in the Water Quality Trading Framework for the Laguna de Santa Rosa Watershed (WQTF), (Attachment I.) The required amount of offsets (in pounds of phosphorus) to achieve compliance shall be determined as follows:

   $(100-LRr) \times V_H \times C_H \times 8.34$

   Where:

   LRr, V_H, and C_H are as defined in section VII.L.1 above, and

   8.34 is the conversion factor with units of (pounds x liter)/(mg x MG)

3. The Permittee shall document compliance with the interim effluent limitations in an annual report, submitted to the Regional Water Board by **October 1** of each year. If the Permittee opts to utilize the WQTF as a means of compliance, the annual reports must include sufficient documentation to demonstrate that the water quality credits used were appropriately certified under the Framework and were sufficient to comply with the amount of offsets needed to achieve compliance with the interim phosphorus effluent limitations.

N. Final Effluent Limitation for Total Phosphorus

Effective for the discharge season following the completion of the interim effluent limit compliance schedule included as Table 9 in section VI.C.7, above, the Permittee shall comply with the WQBEL for total phosphorus (Effluent Limitation IV.A.2.b. of this Order).
Compliance with the total phosphorus effluent limitation may be demonstrated in one of two ways as described in 1 and 2, below. Selection of either Option 1 or 2 must be made in writing and submitted to the Regional Water Board by **February 1, 2022**.

1. **Option 1**. The Permittee may demonstrate compliance with the total phosphorus effluent limitations using the WQTF and included as Attachment I to this Order. The WQTF included in Attachment I includes modifications, as summarized in Fact Sheet section IV.I.

2. **Option 2**. The Permittee may demonstrate compliance with the total phosphorus effluent limitation by selecting the Alternative Compliance Option (ACO) which consists of meeting all of the following three conditions:

   a. Comply with the interim effluent limitations in Effluent Limitation IV.A.3 of this Order until the end of the compliance schedule;

   b. Develop, submit, and receive approval for two pre-qualified practices (PQPs) consistent with the Laguna WQTF; and

   c. Plan, design, and implement a restoration project that meets the following eligibility and performance criteria:

      i. Not already be required by law, regulation, permit, enforcement action, or any other legally binding agreement;

      ii. Provide restoration of Mark West Creek and/or the mainstem Laguna de Santa Rosa by

         (a) Enhancing environmental values (e.g., habitat or ecosystem restoration, recognized priority or multi-benefit actions);

         (b) Adding assimilative capacity to Mark West Creek and/or the Laguna de Santa Rosa; and

         (c) Adding auxiliary benefits (e.g., wildlife habitat, increased riparian vegetation).

iii. Be designed to reduce sediment and nutrient loads and/or impacts, increase dissolved oxygen levels, reduce water temperature Mark West Creek and/or the mainstem Laguna de Santa Rosa; and

iv. Phosphorus reductions to be demonstrated through direct measurement.

d. By **August 1, 2021**, the Permittee shall submit an Alternative Compliance Option Workplan (ACO Work Plan) for review and approval by the Regional Water Board Executive Officer. The ACO Workplan shall include:

i. A detailed description of the proposed restoration project(s), explicitly designed to meet the eligibility and performance criteria outlined in 2.b;

ii. A proposal for the development of two pre-qualified practices in accordance with section 2.5 of the WQTF;

iii. A detailed schedule for the restoration project(s) and pre-qualified practices that includes:

(a) Interim restoration project milestones as follows: completion of initial design, completion of final project design, project contract award, start of construction, project completion, submittal of as-built record drawings, project monitoring, and project verification.

(b) A detailed implementation schedule that ensures that:

(1) Construction of the selected restoration project(s) has been initiated by July 31, 2024;

(2) The project(s) have been substantially implemented, including significant progress in physical construction by July 31, 2025; and

(3) The two pre-qualified practices have been approved under the WQTF by July 31, 2025.

iv. A scientifically robust estimate of the quantity of phosphorus that will be removed by the project(s) as described as “Credit Project Plans” in section 7.1 of the WQTF.

e. The selected project(s) completed under Option 2 (ACO) will not be eligible to generate credits under the WQTF. However, if the Permittee opts to comply with the total phosphorus effluent limitation by selecting Option 1, the developed project may be considered under the WQTF at that time.

f. The selected project(s) must be designed to remove a total of 4,156 pounds of phosphorus (see Fact Sheet section IV.I).

g. All credits that exist or that continue to be generated by ongoing projects under the previous Nutrient Offset Program shall be brought into the WQTF Accounting Ledger by the effective date of this Permit.

h. Any credits that exist under the WQTF Accounting Ledger at the time that the Permittee selects the ACO or that continue to be generated by ongoing projects during the use of the ACO would effectively have their banking period, or any associated expiration put on hold until such time that either the ACO is no longer utilized or the credit is sold.

3. The Permittee shall document compliance with phosphorus effluent limitations in the Discharge Season Annual report identified in Section X.D.5 of the MRP.

4. The Permittee shall document compliance with the effluent limitations in an annual report, submitted to the Regional Water Board by **October 1** of each year. If the Permittee opts to utilize the Laguna WQT Framework as a means of compliance, the annual reports must include sufficient documentation to demonstrate that the water quality credits used were appropriately certified under the Framework and were sufficient to meet effluent limitations.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative Pollutants
Substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Coefficient of Variation (CV)
A measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
The amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effective Concentration (EC)
A point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

Effluent Concentration Allowance (ECA)
A value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as wasteload allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estimated Chemical Concentrations
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters.

The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, Russian, San Diego, and Otay Rivers. Estuaries do not include inland surface waters or ocean waters.

Inhibition Concentration
The IC25 is typically calculated as a percentage of effluent. It is the level at which the organisms exhibit 25 percent reduction in biological measurement such as reproduction or growth. It is calculated statistically and used in chronic toxicity testing.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Lowest Observed Effect Concentration (LOEC)
The lowest concentration of an effluent or toxicant that results in adverse effects on the test organism (i.e., where the values for the observed endpoints are statistically different from the control).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the *n*/2 and *n*/2+1).

Method Detection Limit (MDL)
The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
The concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
A limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)
Those sample results less than the laboratory's MDL.

No Observed Effect Concentration (NOEC)
The highest tested concentration of an effluent or a test sample at which the effect is no different from the control effect, according to the statistical test used (see LOEC). The NOEC is usually the highest tested concentration of an effluent or toxicant that causes no observable effects on the aquatic test organisms (i.e., the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls). It is determined using hypothesis testing.

Persistent Pollutants
Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3).

Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Publicly Owned Treatment Works (POTW)
A treatment works as defined in section 212 of the Clean Water Act (CWA), which is owned by a state or municipality as defined by section 502(4) of the CWA. [Section 502(4) of the CWA defines a municipality as a city, town, borough, county, parish, district, association, or other public body created by or pursuant to state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

Recycled Water
Water which, as a result of treatment of municipal wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource (Water Code section 13050). The terms “recycled water” and “reclaimed water” have the same meaning (Water Code section 26).

Reporting Level (RL)
The RL is the ML (and its associated analytical method) chosen by the Permittee for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Septage
Defined as the liquid or solid material removed from a septic tank, cesspool, portable toilet, type III marine sanitation device, recreational vehicle’s sanitation tank, or similar storage or treatment works that receives domestic waste.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ)
A measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

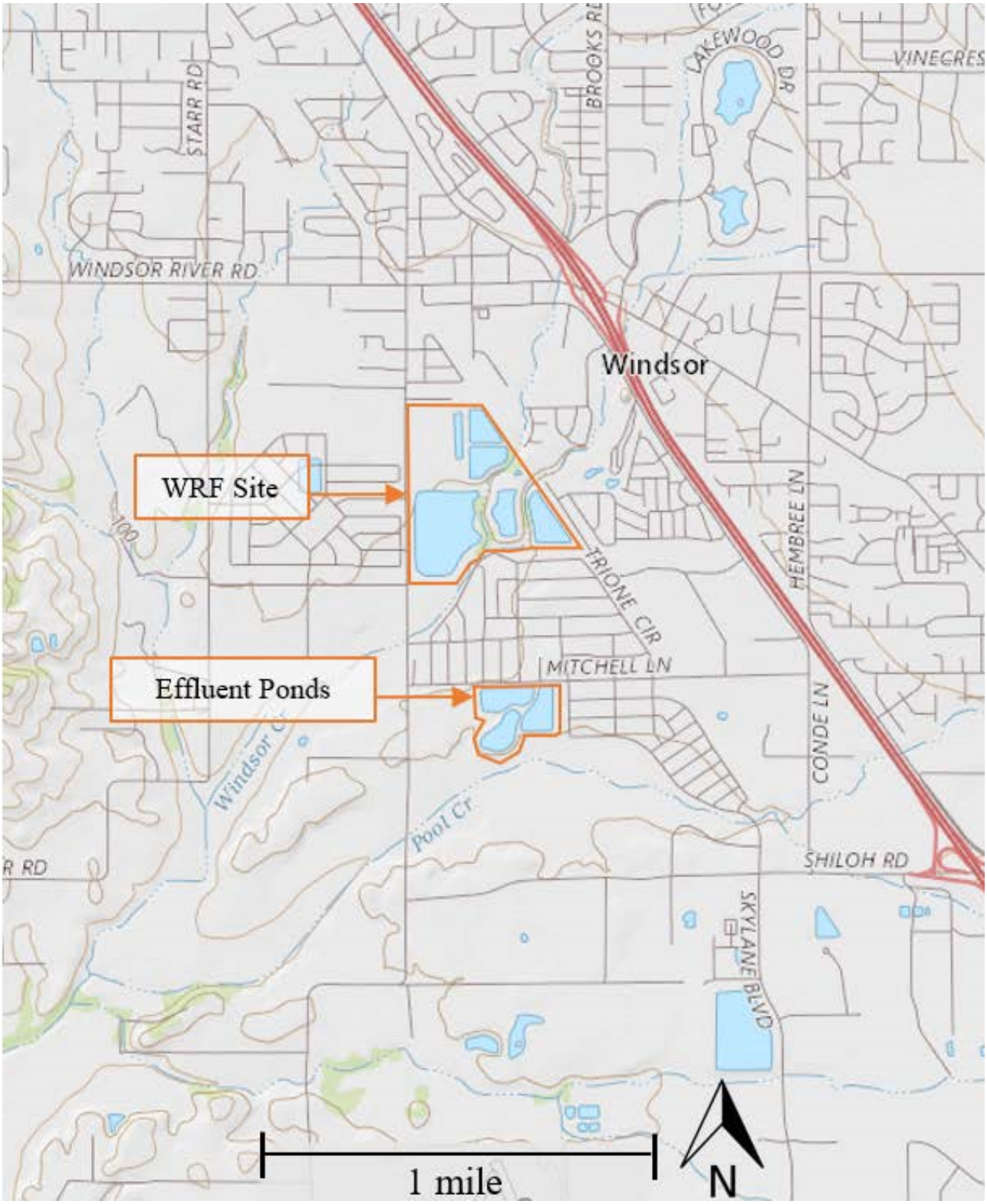
μ is the arithmetic mean of the observed values; and

n is the number of samples.

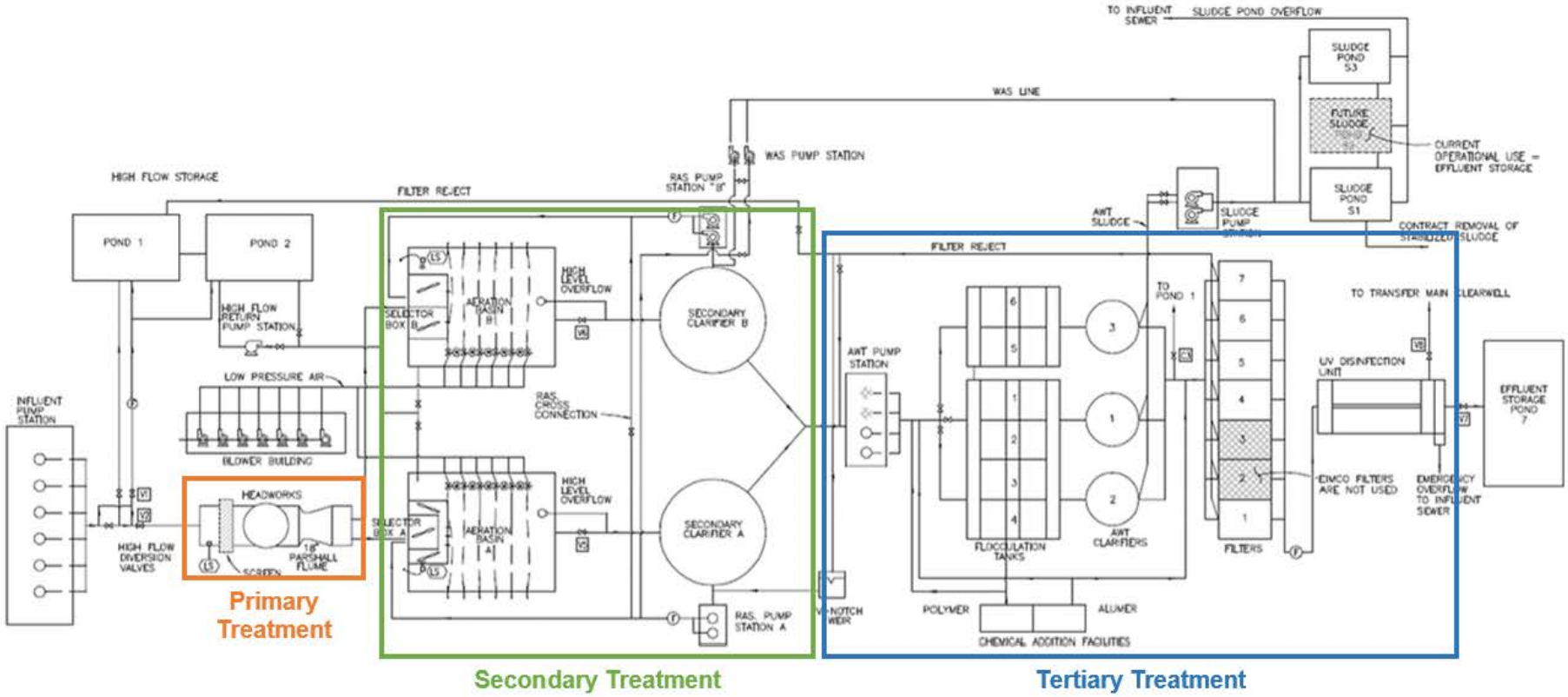
Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Test of Significant Toxicity (TST)
The statistical approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R10-003, 2010). TST was developed by the U.S. Environmental Protection Agency (EPA) for analyzing WET and ambient toxicity data. Using the TST approach, the sample is declared toxic if there is greater than or equal to a 25% effect in chronic tests, or if there is greater than or equal to a 20% effect in acute tests at the permitted instream waste concentration (IWC) (referred to as the toxic regulatory management decision (RMD)). The sample is declared non-toxic if there is less than or equal to a 10% effect at the IWC in acute or chronic tests (referred to as the non-toxic RMD).

ATTACHMENT B – MAPS



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Permittee must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 130001, 13304, 13350, 13385)

2. The Permittee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1))

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c))

C. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d))

D. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee 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 backup or auxiliary facilities or similar systems that are installed by a Permittee only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e))

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g))

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c))

F. Inspection and Entry

The Permittee shall allow the Regional Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i))

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii))

2. **Bypass not exceeding limitations.** The Permittee may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. **Prohibition of bypass**. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Permittee for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

   c. The Permittee submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C))

4. **Burden of Proof.** In any enforcement proceeding, the permittee seeding to establish the bypass defense has the burden of proof.

5. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii))

6. **Notice**

   a. Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit a prior notice, if possible at least 10 days before the date

of the bypass. (40 C.F.R. § 122.41(m)(3)(i))

b. Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii))

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1))

1. **Effect of an upset**. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2))

2. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Permittee can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The Facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

   c. The Permittee submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Permittee complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv))

3. **Burden of Proof**. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4))

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f))

B. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this Order after the expiration date of this Order, the Permittee must apply for and obtain a new permit. (40 C.F.R. § 122.41(b))

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Permittee and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1))

B. Monitoring must be conducted according to test procedures under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is “sufficiently sensitive” when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and, either the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant

parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv))

In the case of sludge use or disposal approved under 40 C.F.R. part 136, monitoring must be conducted according to test procedures in part 503 unless otherwise specified in 40 C.F.R. or other test procedures have been specified in this Order.

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2))

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi))

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Permittee (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2))

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Permittee shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Permittee shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k))

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3))

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3))

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c))

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d))

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e))

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the MRP (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4))

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring, sludge use, or disposal practices.

As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i))

3. If the Permittee monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii))

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii))

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5))

E. Twenty-Four Hour Reporting

1. The Permittee shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i))

   For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Permittee to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i))

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A))

b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B))

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii))

F. Planned Changes

The Permittee shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the Facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii))

3. The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii))

G. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Water Board of any planned changes in the Facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2))

H. Other Noncompliance

The Permittee shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Permittee to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7))

I. Other Information

When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or U.S. EPA, the Permittee shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8))

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9))

VI. STANDARD PROVISIONS – ENFORCEMENT

The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order (40 C.F.R. § 122.42(b)(2))

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3))

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

CONTENTS

TABLES

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code section 13383 also authorizes the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed 1 hour.

B. Supplemental Monitoring Provision. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 C.F.R. part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the quarterly and annual discharge monitoring reports.

C. Data Quality Assurance Provision. Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board (State Water Board) in accordance with the provisions of Water Code section 13176 and must include quality assurance / quality control data with their analytical reports. The Permittee may analyze pollutants with short hold times (e.g., pH, chlorine residual, etc.) with field equipment or its on-site laboratory provided that the Permittee has standard operating procedures (SOPs) that identify quality assurance/quality control procedures to be followed to ensure accurate results.

The Permittee shall keep a manual onsite containing the steps followed in this program and must demonstrate sufficient capability to adequately perform these field tests (e.g., qualified and trained employees, properly calibrated and maintained field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.

D. Instrumentation and Calibration Provision. All monitoring instruments and devices used by the Permittee to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated no less than the manufacturer's recommended intervals or one-year intervals, (whichever comes first) to ensure continued accuracy of the devices.

E. Minimum Levels (ML) and Reporting Levels (RL). Unless otherwise specified by this MRP, all monitoring shall be conducted according to test procedures established at 40 C.F.R. 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*.

All analyses shall be conducted using the lowest practical quantitation limit achievable using U.S. EPA approved methods. For the purposes of the NPDES program, when more than one test procedure is approved under 40 C.F.R., part 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). Where effluent limitations are set below the lowest achievable quantitation limits, pollutants not detected at the lowest practical quantitation limits will be considered in compliance with effluent limitations. Analysis for toxics listed by the California Toxics Rule (CTR) shall also adhere to guidance and requirements contained in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) (SIP). However, there may be situations when analytical methods are published with MLs that are more sensitive than the MLs for analytical methods listed in the SIP. For instance, U.S. EPA Method 1631E for mercury is not currently listed in SIP Appendix 4, but it is published with an ML of 0.5 ng/L that makes it a sufficiently sensitive analytical method. Similarly, U.S. EPA Method 245.7 for mercury is published with an ML of 5 ng/L.

F. Discharge Monitoring Report Quality Assurance (DMR-QA) Study. The Permittee shall ensure that the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

II. MONITORING LOCATIONS

The Permittee shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Untreated influent wastewater collected at the plant headworks at a representative point preceding primary treatment.
--	INT-001A	Location for monitoring the surface loading rate of the advanced wastewater treatment (AWT) filtration process.
--	INT-001B	Treated wastewater immediately following the AWT process and prior to ultraviolet light (UV) disinfection.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INT-002	A location for monitoring UV radiation dose and UV transmittance of the UV disinfection system.
001	EFF-0011	Tertiary treated, disinfected wastewater immediately following the UV disinfection process before discharge to the Permittee's effluent storage ponds or Mark West Creek.
002	EFF-002	Tertiary treated, disinfected wastewater before effluent contacts the receiving water.
001	REC-0011	Tertiary treated, disinfected wastewater immediately following the UV disinfection process before discharge to the Permittee's effluent storage ponds, from which discharges occur to the recycled water system at distribution locations 003A, 003B, 004 and 005.
--	RSW-001	Mark West Creek surface water upstream beyond the influence of the discharge.
--	RSW-002	Mark West Creek surface water at the point of discharge or other location approved by the Executive Officer.
--	BIO-001	A representative sample of the sludge or biosolids generated when removed for disposal.

Table Notes:

1. Monitoring Locations EFF-001 and REC-001 are the same location, the sampling point immediately following the UV disinfection system. Different monitoring location names have been assigned due to differences in monitoring requirements at Monitoring Location EFF-001 and Monitoring Location REC-001 (during periods of discharge to the recycled water system). The Permittee has the ability to discharge directly to the recycled water distribution system and bypass the storage ponds

II. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Permittee shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Influent Flow[1]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly	Part 136[2]
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly	Part 136[2]
CTR Priority Pollutants[3]	µg/L	24-hr Composite[4]	Annually[5,6]	Part 136[2,7]

Table Notes:

1. The Permittee shall report the daily average and monthly average flows.
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration).
3. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos.
4. CTR priority pollutant samples shall be collected using 24-hour composite sampling, except for pollutants that are volatile. Samples for volatile pollutants may be collected as a grab sample.
5. Influent, effluent, and receiving water monitoring for CTR priority pollutants shall be conducted concurrently.
6. Influent monitoring shall consist of a full CTR priority pollutant scan during the first year of the permit term with annual samples analyzed for those pollutants detected in the scan.
7. Analytical methods must achieve the lowest ML specified in Appendix 4 of the SIP and, in accordance with section 2.4 of the SIP, the Permittee shall report the ML and method detection limit (MDL) for each sample result.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Permittee shall monitor advanced treated wastewater immediately following disinfection at Monitoring Location EFF-001 prior to discharge to the effluent storage ponds as follows:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Effluent Flow[1]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly[2]	Part 136[3]
	% Removal	Calculate	Monthly	--
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly[2]	Part 136[3]
	% Removal	Calculate	Monthly	--
pH	standard units	Grab	Five Times per Week[4]	Part 136[3]
Total Coliform Bacteria8	MPN/100 mL	Grab	Daily[4,5]	Part 136[3]
E. coli[8]	cfu/100mL	Grab	Weekly[5]	Part 136[3]
Radioactivity[6]	pCi/L[7]	Grab	Once per Permit Term	Part 136[3]

Table Notes:

1. The Permittee shall report the daily average and monthly average flows.
2. Accelerated monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed an effluent limitation, the Permittee shall take two samples each of the 2 weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
3. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
4. Accelerated Monitoring (daily and five times per week monitoring frequencies). If a test result exceeds an effluent limitation, the Permittee shall increase the monitoring frequency to a minimum of twice a day for a week to evaluate whether an exceedance is persisting. If two or more samples in a week exceed an effluent limitation, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.

5. The Permittee shall collect and analyze samples from each operational UV disinfection channel for total coliform bacteria and *E. coli*. MPN and CFU are comparable units. The Permittee may use any *E. coli* method specified in 40 CFR 136 for compliance monitoring for *E. coli.*
6. Radionuclides measured shall include combined radium-226 and radium-228, gross alpha, gross beta, tritium, strontium-90, and uranium.
7. Results for gross beta shall be reported in units of millirem/year in accordance with *EPA's Implementation Guidance for Radionuclides* [EPA 816-F-00-002, March 2002].
8. Monitoring for *E. coli* at EFF-001 shall occur when the Permittee is discharging to Mark West Creek directly from the UV channels. Monitoring for total coliform at EFF-001 shall occur when the Permittee discharges to their recycled water storage ponds from the UV channels. With approval by the Executive Officer, the minimum sampling frequency may be modified or superseded to conform to the monitoring frequency within the approved Pathogen Special Study Work Plan required by section VI.C.2.a of this Order. A minimum of three samples over a six-week period is necessary to calculate the geometric mean. See also Order section VII.H.2, Footnote 12.

B. Monitoring Location EFF-002

The Permittee shall monitor advanced treated wastewater following storage in the effluent storage ponds at Monitoring Location EFF-002 during periods of discharge to Mark West Creek at Discharge Point 002 as follows:

Table E-4. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow[1]	Mgd	Meter	Continuous	--
Discharge Dilution Rate	% of stream flow	Calculate	Daily	--
pH	standard units	Grab	Five Times per Week[2,3]	Part 136[4]
Dissolved Oxygen	mg/L	Continuous	Five Times per Week	Part 136[4]
Temperature	°F	Continuous	Five Times per Week[3]	Part 136[4]
Cyanide, Total (as CN)	µg/L	Grab	Monthly[5]	Part 136[4,6]
Lead, Total Recoverable	µg/L	Grab	Monthly	Part 136[4]
Lead Impact Ratio	Ratio	Calculate	Monthly[5]	--
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Monthly[3,5]	Part 136[4]
Ammonia Nitrogen, Unionized (as N)	mg/L	Calculate	Monthly	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly[5]	Part 136[4]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136[4]
Organic Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136[4]
Total Nitrogen (as N)[7]	mg/L	Calculate	Monthly[5]	--
Phosphorus, Total (as P)	mg/L	Grab	Weekly	Part 136[4]
Mercury, Total Recoverable	µg/L	Grab	Monthly	Part 136[4]
E. coli[14]	cfu/100mL	Grab	Weekly	Part 136[4]
CTR Priority Pollutants[8]	µg/L	Grab	Once per Discharge Season[9]	Part 136[4,10,11]
Acute Toxicity[12]	% Survival, Pass or Fail, and % Effect	Grab	Once per Discharge Season	See Section V.A Below
Chronic Toxicity[12]	Pass or Fail, and % Effect	Grab[13]	Once per Discharge Season	See Section V.B Below

Table Notes:

1. The Permittee shall report the daily average and monthly average flows.
2. Accelerated Monitoring (five times per week monitoring frequencies). If a test result exceeds an effluent limitation, the Permittee shall increase the monitoring frequency to a minimum of twice a day for a week to evaluate whether an exceedance is persisting. If two or more samples in a week exceed an effluent limitation, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
3. pH and temperature shall be measured at Monitoring Locations EFF-002 and RSW-001 concurrently with ammonia sampling at EFF-002.
4. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
5. Accelerated monitoring (monthly monitoring frequency). If a test result exceeds an effluent limitation, the Permittee shall take two more samples, one within 7 days and one within 14 days following receipt of the initial sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.

6. The Permittee may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136 (i.e., Standard Method Part 4500-CN-I, U.S. EPA Method OIA 1677, American Society of Testing and Materials (ASTM) Method D203), or an equivalent method in the latest Standard Method edition.
7. Total nitrogen is the sum of nitrate, nitrite, ammonia, and organic nitrogen.
8. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos. Hardness shall be monitored concurrently with the priority pollutant sample. Holding times for unpreserved cyanide shall not exceed 1 hour.
9. Influent, effluent, and receiving water monitoring for CTR priority pollutants shall be conducted concurrently.
10. Analytical methods must achieve the lowest ML specified in Appendix 4 of the SIP and, in accordance with section 2.4 of the SIP, the Permittee shall report the ML and MDL for each sample result.
11. Total mercury samples collected as part of the CTR priority pollutant sampling requirement shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of total mercury shall be by U.S. EPA method 1631 (Revision E) with a reporting limit of 0.5 ng/L (0.0005 µg/L).
12. Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.
13. If the Permittee is discharging directly from the UV channel, a 24-hour composite sample is required to be collected. If the Permittee is discharging strictly from the storage ponds, a grab sample can be collected.
14. With approval by the Executive Officer, the minimum sampling frequency may be modified or superseded to conform to the monitoring frequency within the approved Pathogen Special Study Work Plan required by section VI.C.2.a of this Order. A minimum of three samples over a six-week period is necessary to calculate the geometric mean. See also Order section VII.H.2, Footnote 12

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Permittee shall conduct acute whole effluent toxicity testing (WET) in accordance with the following acute toxicity testing requirements.

1. **Test Frequency.** The Permittee shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 002 as summarized in Table E-4, above.

2. **Discharge In-stream Waste Concentration (IWC) for Acute Toxicity.** The IWC for this discharge is 100 percent effluent.[1]

3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

4. **Freshwater Test Species and Test Methods.** The Permittee shall conduct the following acute toxicity tests in accordance with species and test methods in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions). In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

   a. A 96-hour static renewal toxicity test with an invertebrate, the water flea, *Ceriodaphnia dubia* (Survival Test Method 2002.0).

   b. A 96-hour static renewal toxicity test with a vertebrate, the rainbow trout, *Oncorhynchus mykiss* (Survival Test Method 2019.0).

5. **Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this Order's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct two acute toxicity tests using the invertebrate and fish species identified in section V.A.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during species sensitivity screening shall be used for routine acute toxicity monitoring during the permit term.[2]

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[1] The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-002.

[2] Species sensitivity screening generated within five years prior to issuance of this Order may be used when the data is representative of the effluent and the species sensitivity screening is conducted in accordance with section V.B.4 of the MRP in this Order. If the percent effect is equal to zero percent effect for each species, or all percent effect are the same value, in the species sensitivity test, the Permittee shall either use the species that was most sensitive during the previous permit term for routine monitoring or repeat the species sensitivity screening for all species to confirm the results of the first screening before selecting the most sensitive species to use for routine monitoring. If two consecutive species sensitivity screening tests demonstrate that the percent effect for all species exhibit less than or equal to zero

6. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual referenced in section V.A.4, above. Additional requirements are specified below.

   a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" from acute toxicity tests using the Test of Significant Toxicity (TST) approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (H_o) for the TST approach is: Mean discharge IWC response ≤ 0.80 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: ((Mean control response – Mean discharge IWC response) ÷ Mean control response)) × 100.

   b. If the effluent toxicity test does not meet the minimum effluent test acceptability criteria (TAC) specified in the referenced test method, then the Permittee shall re-sample and re-test within 7 days.

   c. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

   d. Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the U.S. EPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in acute toxicity tests is allowed, provided the test pH is maintained at the effluent pH measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

   e. Ammonia Toxicity. The acute toxicity test shall be conducted without modifications to eliminate ammonia toxicity.

7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing 14 days after receipt of test results exceeding the acute toxicity effluent limitation during regular or accelerated monitoring. The notification shall describe actions the Permittee has taken or will take to investigate and correct the

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percent, the Permittee may select the species to be used for routine monitoring during the permit term.

cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

8. **Accelerated Monitoring Requirements.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival), and the testing meets all TAC, the Permittee shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples do not comply with the three-sample median minimum limitation (90 percent survival), the Permittee shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section V.C of the MRP. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all TAC, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Permittee shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.

9. **Reporting.** The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test (WET report). The WET report shall be prepared using the format and content of section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), including:

   a. The toxicity test results in percent (%) survival for the 100 percent effluent sample.

   b. The toxicity test results for the TST approach, reported as “Pass” or “Fail” and “Percent (%) Effect” at the acute toxicity IWC for the discharge.

   c. Water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

   d. TRE/toxicity identification evaluation (TIE) results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.

   e. Statistical program (e.g., TST calculator, CETIS, etc.) output results for each toxicity test.

B. Chronic Toxicity Testing

The Permittee shall conduct chronic toxicity testing in accordance with the following chronic toxicity testing requirements:

1. **Test Frequency.** The Permittee shall conduct chronic toxicity testing in accordance with the schedule established by this MRP while discharging at Discharge Point 002 as summarized in Table E-4, above.

2. **Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC for this discharge is 100 percent effluent.[3]

3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. For toxicity tests requiring renewals, a minimum of three 24-hour composite samples shall be collected. The lapsed time (holding time) from sample collection to first use of each sample must not exceed 36 hours.

4. **Freshwater Test Species and Test Methods.** The Permittee shall conduct the following chronic toxicity tests in accordance with species and test methods in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (U.S. EPA Report No. EPA-821-R-02-013, or subsequent editions). In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

   a. A 7-day static renewal toxicity test with a vertebrate, the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0).

   b. A static renewal toxicity test with an invertebrate, the water flea, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).

   c. A 96-hour static renewal toxicity test with a plant, the green algae, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0).

5. **Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this Order's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct three chronic toxicity tests using the fish, the invertebrate, and the algae species identified in section V.B.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during

[3] The chronic toxicity test shall be conducted using a series of five dilutions and a control. The series shall consist of the following dilutions: 12.5, 25, 50, 75, and 100 percent. Compliance determination will be based on the IWC (100 percent effluent) and a control as further described in Fact Sheet section IV.C.5.c.

species sensitivity screening shall be used for routine monitoring during the permit term.4

6. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

   a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" for chronic toxicity tests using the TST approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (Ho) for the TST approach is Mean discharge IWC response ≤ 0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: ((Mean control response – Mean discharge IWC response) ÷ Mean control response)) × 100.

   b. If the effluent toxicity test does not meet the minimum effluent or reference toxicant TAC specified in the referenced test method, then the Permittee shall re-sample and re-test within 14 days.

   c. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

   d. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported.

   e. The Permittee shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing,

[4] Species sensitivity screening generated within five years prior to issuance of this Order may be used when the data is representative of the effluent and the species sensitivity screening is conducted in accordance with section V.B.4 of the MRP in this Order. If the percent effect is less than or equal to zero percent effect for each species, or all percent effect are the same value, in the species sensitivity screening test, the Permittee shall either use the species that was most sensitive during the previous permit term for routine monitoring or repeat the species sensitivity screening for all species to confirm the results of the first screening before selecting the most sensitive species to use for routine monitoring. If two consecutive species sensitivity screening tests demonstrate that the percent effect for all species exhibit less than or equal to zero percent, the Permittee may select the species to be used for routine monitoring during the permit term.

unless explicitly authorized under this section of the MRP and the rationale is explained in the Fact Sheet (Attachment F).

f. **Ammonia Removal**. Except with prior approval from the Executive Officer of the Regional Water Board, ammonia shall not be removed from bioassay samples. The Permittee must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer would allow for control of pH in the test.

   i. There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.

   ii. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

   iii. Conduct graduated pH tests as specified in the TIE methods. For example, mortality should be higher at pH 8 and lower at pH 6.

   iv. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

   When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent.

7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of a result of “Fail” during routine or accelerated monitoring.

8. **Accelerated Monitoring Requirements.** Accelerated monitoring for chronic toxicity is triggered when a chronic toxicity test, analyzed using the TST approach, results in “Fail” and the “Percent Effect” is ≥0.50. Within 24 hours of the time the Permittee becomes aware of a summary result of “Fail”, the Permittee shall implement an accelerated monitoring schedule consisting of four toxicity tests—consisting of 5-effluent concentrations (including the discharge IWC) and a control—conducted at approximately 2-week intervals, over an 8-week period. If each of the accelerated toxicity tests results is “Pass,” the Permittee shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results is “Fail”, the Permittee shall immediately implement the TRE Process conditions set forth in section V.C, below. If the discharge stops before additional samples can be

collected, the Permittee shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.

9. Reporting

a. Routine Reporting. Chronic toxicity monitoring results shall be submitted with the quarterly SMR for the month that chronic toxicity monitoring was performed. Routine reporting shall include the following in order to demonstrate compliance with permit requirements:

i. WET reports shall include the contracting laboratory's complete report provided to the Permittee and shall be consistent with the appropriate "Report Preparation and Test Review" sections of the methods manual and this MRP. The WET test reports shall contain a narrative report that includes details about WET test procedures and results, including the following:

(a) Receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia);

(b) The source and make-up of the lab control/diluent water used for the test;

(c) Any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;

(d) Tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of the NOEC, TUc, and IC25;

(e) Identification of any anomalies or nuances in the test procedures or results;

(f) WET test results shall include, at a minimum, for each test:

(1) Sample date(s);

(2) Test initiation date;

(3) Test species;

(4) Determination of "Pass" or "Fail" and "Percent Effect" following the Test of Significant Toxicity hypothesis testing approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The "Percent Effect" shall be calculated as follows:

"Percent Effect" (or Effect, in %) = ((Control mean response – IWC mean response) ÷ Control mean response)) x 100

(5) End point values for each dilution (e.g., number of young, growth rate, percent survival);

(6) NOEC value(s) in percent effluent;

(7) IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent;

(8) TUc values (100/NOEC);

(9) Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable);

(10) NOEC and LOEC values for reference toxicant test(s);

(11) IC50 or EC50 value(s) for reference toxicant test(s);

(12) Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia);

(13) Statistical methods used to calculate endpoints;

(14) The statistical program (e.g., TST calculator, CETIS, etc.) output results, which includes the calculation of percent minimum significant difference (PMSD); and

(15) Results of applicable reference toxicant data with the statistical output page identifying the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, to include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.

b. TRE/TIE results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. TRE/TIE results shall be submitted to the Regional Water Board within 60 days of completion.

C. Toxicity Reduction Evaluation (TRE) Process

1. **TRE Work Plan.** The Permittee submitted a TRE Work Plan, dated November 2015, to the Regional Water Board. The Permittee's TRE Work Plan shall be reviewed, and revised if necessary, by November 1, 2020 and once every five years thereafter. The TRE Work Plan shall be updated as necessary in order to remain current and applicable to the discharge and discharge facilities.

   The Permittee shall notify the Regional Water Board of this review and submit any revisions of the TRE Work Plan within 90 days of the notification, to be ready to respond to toxicity events. The TRE Work Plan shall describe the steps the Permittee intends to follow if toxicity is detected, and should include at least the following items:

   a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

   b. A description of the Facility's methods of maximizing in-house treatment efficiency, good housekeeping practices, and a list of all chemicals used in the operation of this Facility.

   c. If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

2. **Preparation and Implementation of a Detailed TRE Work Plan.** If one of the accelerated toxicity tests described in section V.A.8 (above) does not comply with the three sample median minimum limitation (90 percent survival) or in section V.B.8 (above) results in "Fail", the Permittee shall immediately initiate a TRE using EPA manual USEPA (1999) *Toxicity Reduction Evaluation* Guidance *for Municipal Wastewater Treatment Plants* (EPA/833B-99/002) and within 30 days of receipt submit the accelerated monitoring result to the Regional Water Board Executive Officer. The Permittee shall also submit a Detailed TRE Work Plan, which shall follow the generic TRE Work Plan revised as appropriate for the toxicity event described in section V.A.8 or V.B.8 of this MRP. The Detailed TRE Work Plan shall include the following information, and comply with additional conditions set by the Regional Water Board Executive Officer:

   a. Further actions by the Permittee to investigate, identify, and correct causes of toxicity.

   b. Actions the Permittee will take to mitigate effects of the discharge and prevent the recurrence of toxicity.

   c. A schedule for these actions, progress reports, and the final report.

3. **TIE Implementation.** The Permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test methods and, as guidance, EPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96- 054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.

4. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Permittee shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.

5. The Permittee shall conduct routine effluent monitoring for the duration of the TRE process. Additional accelerated monitoring and TRE work plans are not required once a TRE has begun.

6. The Regional Water Board recognizes that toxicity may be episodic and identification of the causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage, pending Regional Water Board approval, if monitoring finds there is no longer toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This Order does not authorize discharges to land.

VII. RECYCLING MONITORING REQUIREMENTS

A. Recycled Water Monitoring Location REC-001

1. The Permittee shall monitor treated, disinfected wastewater that will be recycled prior to discharge to the effluent storage ponds at Monitoring Location REC-001 as follows:

Table E-5. Recycled Water Monitoring – Monitoring Location REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Effluent Flow[1]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly[2]	Part 136[3]
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly[2]	Part 136[3]
pH	standard units	Grab	Five Times per Week[4]	Part 136[3]
Total Coliform Bacteria	MPN/100 mL	Grab	Daily[4,5]	Part 136[3]

Table Notes:

1. The Permittee shall report the daily average and monthly average flows.
2. Accelerated monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed a water recycling specification, the Permittee shall take two samples each of the 2 weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
3. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
4. Accelerated Monitoring (daily and five times per week monitoring frequencies). If a test result exceeds an effluent limitation, the Permittee shall increase the monitoring frequency to a minimum of twice a day for a week to evaluate whether an exceedance is persisting. If two or more samples in a week exceed an effluent limitation, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
5. The Permittee shall collect and analyze samples from each operational UV disinfection channel for total coliform bacteria.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001 and RSW-002

1. The Permittee shall monitor Mark West Creek at Monitoring Locations RSW-001 and RSW-002, during periods of discharge to Mark West Creek, as follows:

Table E-6. Receiving Water Monitoring – Monitoring Locations RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Gauge[1]	Daily	--
pH	standard units	Grab	Weekly[2]	Part 136[3]
Dissolved Oxygen	mg/L	Grab	Weekly	Part 136[3]
Temperature	°F	Grab	Weekly[2]	Part 136[3]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Monthly[2]	Part 136[3]
Ammonia Nitrogen, Unionized (as N)	mg/L	Calculate	Monthly	--
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136[3]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136[3]
Organic Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136[3]
Total Nitrogen (as N)	mg/L	Calculate	Monthly	--
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Part 136[3]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	Monthly[4]	Part 136[3]
CTR Priority Pollutants[5,6]	µg/L	Grab	Once per Discharge Season[4,7]	Part 136[3,8]

Table Notes:

1. The flow rate shall be determined using the flow at United States Geological Survey (USGS) Gauge No. 11455800 (Mark West Creek at Trenton-Healdsburg Bridge). Alternatively, the Permittee may utilize the Windsor Water District gauge at the Trenton-Healdsburg Bridge after submitting a report documenting that the gauge is calibrated and maintained in a manner that produces accurate flow measurements and upon approval of the Regional Water Board Executive Officer.
2. Effluent and receiving water pH, temperature, and ammonia samples shall be collected on the same day and at approximately the same time for calculation of the un-ionized fraction of ammonia.
3. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).

4. Hardness shall be monitored concurrently with the priority pollutant sample and the lead sample required in Table E-4.
5. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos.
6. Monitoring shall occur only at Monitoring Location RSW-001.
7. Influent, effluent, and receiving water monitoring for CTR priority pollutants shall be conducted concurrently.
8. Analytical methods must achieve the lowest ML specified in Appendix 4 of the SIP and, in accordance with section 2.4 of the SIP, the Permittee shall report the ML and MDL for each sample result.

B. Groundwater Monitoring to Assess Impacts of Storage Ponds and Recycled Water Use

By **August 1, 2021**, the Permittee shall submit a Salt and Nutrient Management Plan (SNMP) Groundwater Monitoring and Reporting Plan to the Regional Water Board for Executive Officer approval that describes the Permittee's plan and schedule for developing a monitoring and reporting program to assess the impacts of storage ponds and recycled water use on the water quality of the underlying groundwater basin. The Work Plan must include the specific components identified in the September 1, 2015 Regional Water Board letter to the City of Santa Rosa (Subject line: Santa Rosa Plain Salt and Nutrient Management Plan) describing the Necessary Components of a Basin-Specific Monitoring and Reporting Program, including the following components: Basin/Watershed Characterization and Baseline, Monitoring Well Installation Work Plan, Sampling Design Plan, Primary Constituents of Concern, Sampling Frequency, Quality Assurance Project Plan, and Reporting. This letter is included as Attachment J to this Order.

Upon approval of the SNMP Groundwater Monitoring and Reporting Plan by the Regional Water Board Executive Officer, the Permittee shall implement the Plan per the approved schedule of implementation.

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring (Monitoring Locations INT-001A and INT-001B)

Filtration process monitoring shall demonstrate compliance with section IV.D.1 (Filtration Process Requirements) of the Order and applies to all treated wastewater flows. The following filtration process monitoring shall be implemented:

1. **Effluent Filter Monitoring (Monitoring Location INT-001A)**

   a. **Monitoring.** The Permittee shall calculate, on a daily basis, the surface loading rate in gallons per minute per square foot, and report the maximum surface loading rate and any exceedances of the surface loading rate limitations specified in section IV.D.1.a of the Order. The rate of flow through the advanced wastewater treatment process filters shall be measured at Monitoring Location INT-001A.

   b. **Compliance.** Compliance with the maximum daily filter surface loading rate, as specified in section 60301.320 of the CCR Water Recycling Criteria (title 22), shall be calculated based on the flow rate through each filter unit.

   c. **Reporting.** The maximum daily filter surface loading rate, maximum daily flow rate, and daily average flow rate shall be reported on the quarterly SMRs.

2. **Effluent Filter Monitoring (Monitoring Location INT-001B)**

   a. **Monitoring**. The turbidity of the filter effluent shall be continuously measured and recorded. Should the turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The recorded data shall be maintained by the Permittee for at least 3 years. The daily maximum, daily average, and 95th percentile turbidity results shall be reported for Monitoring Location INT-001B on the quarterly SMRs.

   b. **Compliance.** Compliance with the 95th percentile effluent turbidity limitation specified in title 22, as referenced in section IV.D.1.b of the Order, shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Exceedances of the maximum turbidity requirement referenced in section IV.D.1.b of this Order shall not be considered a violation of these waste discharge requirements if such exceedance does not exceed a duration of one minute. Mitigation of the event shall consist of diverting all inadequately treated wastewater to temporary storage or an upstream process or automatically activated chemical addition to comply with title 22 requirements (sections 60304 and 60307).

   c. **Reporting.** If the filtered effluent turbidity exceeds 2 NTU, based on a daily average, 5 NTU for more than 15 minutes, or 10 NTU at any time, the incident shall be reported in the quarterly SMR and to the Regional Water Board and the Division of Drinking Water (DDW) by telephone within 24 hours in accordance with Provision VI.A.2.b of the Order. A written report describing the incident and the actions undertaken in response shall be included in the quarterly SMR.

B. Disinfection Process Monitoring for UV Disinfection System (Monitoring Location INT-002)

UV disinfection system monitoring shall demonstrate compliance with section IV.D.2 (Disinfection Process Requirements) of the Order and applies to all treated wastewater flows. The following disinfection process monitoring shall be implemented:

1. Monitoring Location INT-002

a. Monitoring. The UV transmittance of the influent to the UV disinfection system shall be monitored continuously and recorded at Monitoring Location INT-002. The operational UV dose shall be calculated from UV transmittance, flow rate per channel, UV power, and using lamp age and sleeve fouling factors, in accordance with DDW recommendations.

b. Compliance. The UV transmittance shall not fall below 55 percent of maximum at any time, unless otherwise approved by DDW. The operational UV dose shall not fall below 100 millijoules per square centimeter (mJ/cm^2) at any time, unless otherwise approved by DDW. Any inadequately treated and disinfected wastewater shall be diverted to a storage basin or an upstream process for adequate treatment. Flow through the UV disinfection system shall not exceed 2.25 mgd as a daily average and 5.1 mgd as a monthly maximum per UV channel, unless otherwise approved by DDW.

c. Reporting. The Permittee shall report daily average and lowest daily transmittance and operational UV dose on its quarterly SMRs. The Permittee shall report daily average and maximum flow through the UV disinfection system. If the UV transmittance falls below 55 percent or UV dose falls below 100 mJ/cm^2, the event shall be reported to the Regional Water Board by telephone within 24 hours.

C. Visual Monitoring (Monitoring Locations EFF-002, RSW-001, and RSW-002)

1. Visual observations of the discharge (Monitoring Location EFF-002) and the receiving water (Monitoring Locations RSW-001 and RSW-002) shall be recorded monthly and on the first day of each intermittent discharge. Visual monitoring shall include, but not be limited to, observations for floating materials, coloration, objectionable aquatic growths, oil and grease films, and odors. Visual observations shall be recorded and included in the Permittee's quarterly SMRs.

D. Sludge Monitoring (Monitoring Location BIO-001)

1. Each time the Permittee removes sludge from the sludge storage ponds, a composite sample of sludge shall be collected at Monitoring Location BIO-001 in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document

(USEPA Report No. EPA 833-B-89-100) and tested for priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols).

2. Sampling records shall be retained for a minimum of 5 years. A log shall be maintained for sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary, however, the log must be complete enough to serve as a basis for developing the Sludge Handling and Disposal report that is required as part of the Annual Report.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Permittee shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

B. Self-Monitoring Reports (SMRs)

1. The Permittee shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Permittee shall maintain sufficient staffing and resources to ensure it submits eSMRs that are complete and timely. This includes provision of training and supervision of individuals (e.g., Permittee personnel or consultant) on how to prepare and submit eSMRs.

2. The Permittee shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX and operational records specified in Order Provision VI.C.4.c. The Permittee shall submit quarterly SMRs including the results of all required monitoring using U.S. EPA approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Permittee monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.

4. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Five Times per Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January through March April through June July through September October through January	First day of second calendar month following the end of each quarter1 (February 1, May 1, August 1, November 1)
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Once per Discharge Season	Permit effective date	October 1 through May 14, during a period of discharge to surface waters	July 1, each year
Once per permit term	Permit effective date	All	As stated in MRP tables or by July 31, 2024

5. **Reporting Protocols**. The Permittee shall report with each sample result the applicable ML, the RL, and the current MDL, as determined by the procedure in 40 C.F.R. part 136.

   The Permittee shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. The Permittee is to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Permittee to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

6. The Permittee shall submit SMRs in accordance with the following requirements:

   a. The Permittee shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculations of all effluent limitations that require averaging, taking of a median, or other computation. The Permittee is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Permittee shall electronically submit the data in a tabular format as an attachment.

   b. The Permittee shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:

      i. Facility name and address;

      ii. WDID number;

      iii. Applicable period of monitoring and reporting;

      iv. Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

      v. Corrective actions taken or planned; and

      vi. The proposed time schedule for corrective actions.

   c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the CIWQS Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html).

      In the event that an alternate method for submittal of SMRs is required, the Permittee shall submit the SMR electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at http://waterboards.ca.gov/northcoast.

C. Discharge Monitoring Reports (DMRs)

1. DMRs are U.S. EPA reporting requirements. The Permittee shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module Esmr 2.5 or any upgraded version.

DMRs shall be submitted quarterly on the first day of the second calendar month following the end of each quarter (February 1, May 1, August 1, and November 1). Electronic DMR submittal shall be in addition to electronic SMR submittal. Information regarding electronic DMR submittal is available at the DMR website at https://www.waterboards.ca.gov/ciwqs/esmr25.html.

D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the Special Provisions contained in section VI of the Order and sections I, V, IX and X of the MRP, special study and progress reports shall be submitted in accordance with the following reporting requirements.

Table E-8. Reporting Requirements for Special Provisions Reports

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.a	Pathogen Special Study Work Plan	**August 1, 2021**
Special Provision VI.C.2.a	Pathogen Special Study Final Report	**July 31, 2024**
Special Provision VI.C.2.b	Engineering Evaluation of Recycled Water and Wastewater Storage Ponds and Discharge Outfall Work Plan	**August 1, 2021**
Special Provision VI.C.2.b	Engineering Evaluation of Recycled Water and Wastewater Storage Ponds and Discharge Outfall Report	**July 31, 2024**
Special Provision VI.C.2.c	Disaster Preparedness Assessment Report and Action Plan	**August 1, 2023**
Special Provision VI.C.3.a.i	Pollutant Minimization Program	If required by the Regional Water Board Executive Officer
Special Provision VI.C.3.a.ii(e)	Pollutant Minimization Program, Annual Facility Report	**March 1**, annually, following development of Pollutant Minimization Program
Special Provision VI.C.5.b	Source Control Program Technical Report	**August 1, 2021**
Special Provision VI.C.5.b.ii	Source Control and Pretreatment Provisions, Annual Report	**March 1**, annually

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.5.b.ii(c)(2)	Source Control and Pretreatment Provisions, Industrial Waste Survey and Priority Pollutant Monitoring Results1	**July 30, 2024**
Special Provision VI.C.5.b.iii(a)	Source Control and Pretreatment Provisions, Notification of Discharges that Trigger Pretreatment Requirements	**Within 30 days** of discharges that trigger pretreatment requirements
Special Provision VI.C.5.b.iii(b)	Source Control and Pretreatment Provisions, Revised Report of Waste Discharge and Pretreatment Program	**Within 1 year** of discharges that trigger pretreatment requirements
Special Provision VI.C.5.f	Adequate Capacity, Technical Report	**Within 120 days** of notification that the Facility will reach capacity within 4 years
Special Provision VI.C.6.a	Updated Discharge and Water Recycling System Operations and Management Plan	**August 1, 2022**
Special Provision VI.C.6.b	Capacity Increase Engineering Report	Update as necessary
Special Provision VI.C.7.a	Compliance Schedule for the Final Effluent Limitation for Total Phosphorus, Annual Report	**October 1**, annually, until final compliance
Compliance Determination VII.N	Interim Effluent Limitations for Total Phosphorus Compliance Annual Report	**October 1**, annually, until final compliance
Compliance Determination VII.O	Final Effluent Limitation for Total Phosphorus Compliance Annual Report	**October 1,** annually
Compliance Determination VII.O	Identify Selected Total Phosphorus Compliance Option in writing	**February 1, 2021**
Compliance Determination VII.O.2.c	Alternative Total Phosphorus Compliance Option Workplan	**August 1, 2021**
MRP General Monitoring Provision I.F	DMR-QA Study Report	**Annually**, per State Water Board instructions
MRP Effluent Monitoring Requirement V.B.9.b	Notification of TRE/TIE Results	**No later than 30 days** from the completion of each aspect of the TRE/TIE analyses

Order Section	Special Provision Requirement	Reporting Requirements
MRP Effluent Monitoring Requirement V.B.9.b	TRE/TIE Results	**Within 60 days** of completion of TRE/TIE analyses
MRP Effluent Monitoring Requirement V.C.1	TRE Work Plan review and update (as necessary)	**November 1, 2020**
MRP Effluent Monitoring Requirement V.C.2	Detailed TRE Work Plan	**Within 30 days** of an accelerated monitoring test that results in "Fail"
MRP Receiving Water Monitoring Requirement VIII.B.	SNMP Groundwater Monitoring Work Plan	**August 1, 2021**
MRP Reporting Requirement X.D.2	Annual Report	**March 1, annually**
MRP Reporting Requirement X.D.3	Annual Biosolids Report to EPA	**February 19, annually**
MRP Reporting Requirement X.D.4	Annual Volumetric Reporting to Geotracker	**April 30, annually**
MRP Reporting Requirement X.D.5	Discharge Season Annual Report	**July 1 annually**
MRP Reporting Requirement X.E.1	Notification of spills and unauthorized discharges.	Oral reporting **within 24 hours** and written report **within 5 days**
MRP Reporting Requirement X.E.3.a.i	Notification of tertiary recycled water spills greater than or equal to 50,000 gallons	Notification as soon as becoming aware of the discharge and notification is possible
MRP Reporting Requirement X.E.3.a.ii	Notification of tertiary recycled water spills greater than 1,000 gallons and less than 50,000 gallons	Notification as soon as possible, but no longer than 3 days after becoming aware of the discharge
Table Notes: 1. The IWS and priority pollutant monitoring is required during the 12-month period that begins on January 1, 2022		

2. **Annual Report.** By March 1 of the following year, the Permittee shall submit an annual report to the Regional Water Board for each calendar year through the CIWQS Program Web site. In the event that an alternate method for submittal of the annual report is required, the Permittee shall submit the annual report electronically via the email address in section X.B.6.c., above. The report shall be submitted by

March 1st of the following year and certified as required by Standard Provisions of this Order (Attachment D, section V.B).

The report shall, at a minimum, include the following:

a. Where appropriate, tabular and/or graphical summaries of the monitoring data and disposal records from the previous year. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 C.F.R. part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted in the SMR.

b. A comprehensive discussion of the Facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

c. The names and general responsibilities of all persons employed at the Facility;

d. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations; and

e. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

f. A statement certifying whether the current operation and management manual and spill contingency plan, and SOPs reflect the wastewater treatment Facility as currently constructed and operated, and the dates when these documents were last reviewed and last revised for adequacy.

g. **Source Control Activity Reporting**. The Permittee shall submit, as part of its Annual Report to the Regional Water Board, a description of the Permittee's source control activities, as required by Special Provision VI.C.5.b, during the past year. This annual report is due on March 1 of the following year, and shall contain:

i. A copy of the source control standards, including a table presenting local limits.

ii. A description of the waste hauler permit system; if applicable.

iii. A summary of the compliance and enforcement activities taken by the Permittee during the past year, which ensures industrial user compliance. The summary shall include the names and addresses of any industrial or

commercial users under surveillance by the Permittee, an explanation of whether they were inspected, sampled, or both, the frequency of these activities at each user, and the conclusions or results from the inspection or sampling of each user.

iv. An updated list of industrial users (by North American Industrial Classification/Standard Industrial Classification categories) which were issued permits and/or enforcement orders, and a status of compliance for each user.

v. The name and address of each user that received a discharge limit.

vi. A summary of any industrial waste survey results.

vii. A summary of public outreach activities to educate industrial, commercial, and residential users about the importance of preventing discharges of industrial and toxic wastes to the Facility.

h. Sludge Handling and Disposal Activity Reporting. The Permittee shall submit, as part of its annual report to the Regional Water Board, a description of the Permittee's solids handling, disposal and reuse activities over the previous 12 months. At a minimum, the report shall contain:

i. Annual sludge production, in dry tons and percent solids;

ii. Sludge monitoring results;

iii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram;

iv. Methods of final disposal of sludge:

(a) For any portion of sludge discharged to a sanitary landfill, the Permittee shall provide the volume of sludge transported to the landfill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs Order number for the regulated landfill, and the landfill classification.

(b) For any portion of sludge discharged through land application, the Permittee shall provide the volume of biosolids applied, the Regional Water Board's WDRs Order number for the regulated discharge, and, if applicable, corrective actions taken or planned to bring the discharge into compliance with WDRs.

(c) For any portion of sludge further treated through composting, the Permittee shall provide a summary of the composting process, the volume

of sludge composted, and a demonstration and signed certification statement that the composting process and final product met all requirements for Class A biosolids.

v. **Biosolids Management Reporting.** Results of internal or external third-party audits of the Biosolids Management System, including reported program deficiencies and recommendations, required corrective actions, and a schedule to complete corrective actions.

i. **Sanitary System Reporting.** The Permittee shall submit as part of the **annual** report to the Regional Water Board, a description of the Permittee's activities to correct deficiencies and reduce infiltration and inflow (I&I) into the collection system. The report shall include, but not be limited to the following:

i. A description of any assessment work to characterize the collection system and identify deficiencies;

ii. A description of replacement and rehabilitation of the collection system, including details about replaced/rehabilitated infrastructure, including pipeline, manholes, lift stations, etc.

iii. A description of any changes in the Permittee's ordinances and programs to address I&I.

iv. The financial resources spent on collection system assessment, rehabilitation, and repair work during the calendar year, and the amount of financial resources budgeted for the upcoming calendar year.

3. **Annual Biosolids Reporting.**
The permittee shall include with their report the following demonstration of Vector Attraction Reduction: either a) certification from the person who land applied the biosolids that it was incorporated within 6 hours of arriving at the application site, or b) calculations demonstrating at least a 38% reduction in volatile solids during the treatment process.

The Permittee shall electronically certify and submit an annual biosolids report to U.S. EPA by **February 19** each year using U.S EPA's Central Data Exchange (CDX) Web Site (https://cdx.epa.gov/). Information regarding registration and use of U.S. EPA's CDX system is also available at the Web Site.

4. **Annual Volumetric Reporting.**
The Permittee shall electronically certify and submit an annual volumetric report, containing monthly data in electronic format, to State Water Board's GeoTracker system by April 30 of the following year. Required data shall be submitted to the GeoTracker database under a site-specific global identification number.

The Permittee shall report in accordance with each of the items in Section 3 of the Recycled Water Policy as described below:

a. Influent. Monthly volume of wastewater collected and treated by the Facility.

b. Production. Monthly volume of wastewater treated, specifying level of treatment.

c. Discharge. Monthly volume of treated wastewater discharged to each of the following, **specifying** level of treatment:

i. Inland surface waters, specifying volume required to maintain minimum instream flow, if any; and

ii. Land, where beneficial use is not taking place, including evaporation or percolation ponds, overland flow, or spray irrigation disposal, excluding pasture or fields with harvested crops.

d. Reuse. Monthly Volume of treated wastewater distributed for beneficial use in compliance with California Code of Regulations, Title 22 in each of the use categories listed below:

i. Agricultural irrigation: pasture or crop irrigation.

ii. Landscape irrigation: irrigation of parks, greenbelts, and playgrounds; school yards; athletic fields; cemeteries; residential landscaping, common areas; commercial landscaping; industrial landscaping; and freeway, highway, and street landscaping.

iii. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses.

iv. Commercial application: commercial facilities, business use (such as laundries and office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered.

v. Industrial application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered.

vi. Geothermal energy production: augmentation of geothermal fields.

vii. Other non-potable uses: including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and recreational impoundments.

5. **Discharge Season Annual Report.** By July 1 of each year, the Permittee shall submit an annual report to the Regional Water Board for the prior discharge season through the CIWQS Program Web site and certify the report as required by Standard Provisions of this Order (Attachment D, section V.B). In the event that an alternate method for submittal of the annual report is required, the Permittee shall submit the report electronically via the email address in section X.B.6.c., above. The report shall, at a minimum, include the following:

   a. **Discharge Management Reporting.** The Permittee shall submit a report documenting that storage and discharges were managed pursuant to the most current Regional Water Board Executive Officer approved Discharge Management Plan to demonstrate that the Permittee maximized reclamation and minimized discharges to surface waters.

E. Spill and Unauthorized Discharge Notification

1. **Spills and Unauthorized Discharges.** Information regarding all spills and unauthorized discharges (except SSOs) that may endanger health or the environment shall be provided orally to the Regional Water Board[5] within 24 hours from the time the Permittee becomes aware of the circumstances and a written report shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances, in accordance with section V.E of Attachment D.

   Information to be provided verbally to the Regional Water Board includes:

   a. Name and contact information of caller;

   b. Date, time, and location of spill occurrence;

   c. Estimates of spill volume, rate of flow, and spill duration, if available and reasonably accurate;

   d. Surface water bodies impacted, if any;

   e. Cause of spill, if known at the time of the notification;

   f. Cleanup actions taken or repairs made at the time of the notification; and

   g. Responding agencies.

[5] The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to the California Governor's Office of Emergency Services Warning Center (CalOES) will satisfy the 24 hour spill reporting requirement for the Regional Water Board. The contact number for spill reporting for the CalOES is (800) 852-7550.

2. **Sanitary Sewer Overflows.** Notification and reporting of sanitary sewer overflows is conducted in accordance with the requirements of Order No. 2006-0003-DWQ (Statewide General WDRs for Sanitary Sewer Systems), which is not incorporated herein by reference, and any revisions thereto.

3. **Recycled Water Spills.** Notification and reporting of spills and unauthorized discharges of recycled water discharged in or on any waters of the State, as defined in Water Code section 13050, shall be conducted in accordance with the following:

   a. **Tertiary Recycled Water**[6]

      i. For unauthorized discharges of 50,000 gallons or more of tertiary recycled water, the Permittee shall immediately notify the Regional Water Board as soon as (a) the Permittee has knowledge of the discharge or probable discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures.

      ii. For unauthorized discharges of more than 1,000 gallons, but less than 50,000 gallons of tertiary recycled water, the Permittee shall notify the Regional Water Board as soon as possible, but no longer than three days after becoming aware of the discharge.

[6] Tertiary Recycled Water means “disinfected tertiary 2.2 recycled water” as defined by DDW or wastewater receiving advanced treatment beyond disinfected tertiary 2.2 recycled water.

ATTACHMENT F – FACT SHEET

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Tables

ATTACHMENT F – FACT SHEET

As described in Order section I, the Regional Water Board incorporates this Fact Sheet as findings of the Regional Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Permittee. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Permittee.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F- 1. Facility Information

WDID	1B82037OSON
Permittee	Windsor Water District
Name of Facility	Windsor Wastewater Treatment, Reclamation, and Disposal Facility
Facility Address	8400 Windsor Road
	Windsor, CA 95492
	Sonoma County
Facility Contact, Title and Phone	Dave Ernst, Wastewater Treatment Superintendent, (707) 838-5328 Veronica Siwy, Environmental Program Manager, (707) 838-1218
Authorized Person to Sign and Submit Reports	Dave Ernst, Wastewater Treatment Superintendent, (707) 838-5328 Veronica Siwy, Environmental Program Manager, (707) 838-1218
Mailing Address	P.O. Box 100, Windsor, CA 95492
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Not Applicable
Recycling Requirements	Producer
Facility Permitted Flow	1.9 million gallons per day (mgd) (average daily dry weather flow)[1]

Facility Design Flow	2.25 mgd (average dry weather design flow) 7.2 mgd (peak weekly wet weather design flow)
Watershed	Russian River Hydrologic Unit, Mark West Hydrologic Subarea
Receiving Water	Mark West Creek
Receiving Water Type	Inland surface water

Table Notes:

1. The permitted flow may be increased up to 2.25 mgd during the permit term if the Permittee demonstrates that additional water recycling capacity has been added in accordance with sections IV.C.3 and 4 of this Order.

A. The Windsor Water District (hereinafter Permittee) is the owner and operator of the Windsor Wastewater Treatment, Reclamation, and Disposal Facility (hereinafter Facility), a POTW.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Permittee herein.

The Permittee is authorized to discharge subject to waste discharge requirements (WDRs) in this Order at the discharge locations described in Table 2 on the cover page of this Order. The Code of Federal Regulations at 40 C.F.R. section 122.46 limits the duration of National Pollutant Discharge Elimination System (NPDES) permits to be effective for a fixed term not to exceed five years. Accordingly, Table 4 of this Order limits the effective period for the discharge authorized by this Order. Pursuant to California Code of Regulations (CCR), title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits are complied with.

B. The Facility discharges tertiary treated wastewater to Mark West Creek, a tributary to the Russian River, and a water of the United States. The Permittee was previously regulated by Order No. R1-2013-0042 and NPDES Permit No. CA0023345 adopted on November 21, 2013 and expired on January 31, 2019. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility. A site visit was conducted on September 26, 2018 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

C. The Permittee filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES permit on July 30, 2018. The application was deemed complete on July 30, 2018

II. FACILITY DESCRIPTION

The Permittee owns and operates a wastewater collection, treatment, and disposal facility and provides sewerage service to a population of approximately 28,000 residential, commercial, and institutional customers within the Town of Windsor. The Permittee's wastewater makeup is approximately 90 percent residential flow and 10 percent combined commercial and industrial flows, on an average dry weather basis. The Permittee does not accept any septage or bulk loads into the Facility.

A. Description of Wastewater and Biosolids Treatment and Controls

1. Collection System

The Permittee's wastewater collection system consists of 92 miles of public branch and trunk sewers, one mile of private branch sewers, 1,700 manholes, 750 cleanouts, and approximately 6,100 private service laterals. There are two siphons, located at Los Amigos and Rio Ruso. Ninety percent of the flows reach the treatment plant by gravity. The Permittee also owns and operates two lift stations at Vintage Greens and Shiloh Greens.

The Permittee's current I/I program includes regular inspection and maintenance of its sewer system. The Permittee repairs sewers with root damage and opened joints and is installing sewer guards under manhole lids.

The Permittee has also developed and implements a collection system operation and maintenance (O&M) program that includes: 1) an up-to-date collection system map; 2) routine preventative O&M activities, including collection system preventative maintenance and cleaning, and a database to record and track all activities; 3) prioritized deficiency list and rehabilitation activities, including regular visual and TV inspections of manholes and sewer pipes, ranking of the condition of sewer pipes, scheduling rehabilitation for problem areas, and a capital improvement plan; 4) training for operations and maintenance staff, and contractors; 5) equipment and replacement parts inventories to support its preventative maintenance program; and 6) development of a Fats, Oils, and Grease (FOG) Control Program, including a grease trap ordinance and a residential FOG program.

2. Wastewater Treatment Facility

The current Facility provides advanced wastewater treatment (AWT) and has design capacities of 2.25 mgd as an average dry weather flow (ADWF) and 7.2 mgd as a peak weekly wet weather flow. The wastewater treatment facilities include biological secondary treatment utilizing extended air activated sludge aeration basins and secondary clarifiers; AWT that includes chemical addition facilities, flocculation tanks, AWT clarifiers, and sand filters; ultraviolet (UV) disinfection; and storage prior to water recycling, discharge to the Geysers recharge pipeline, and/or discharge to

Mark West Creek. A portion of the treated and UV disinfected effluent is chlorinated and transferred to Windsor High School for toilet flushing and landscape irrigation.

3. Effluent Storage

Advanced treated, UV disinfected effluent is discharged to effluent storage ponds prior to distribution to the water reclamation system or to Mark West Creek. The Permittee owns and operates six tertiary effluent storage ponds that provide 143.8 million gallons of storage capacity and two additional ponds that provide an added 20.2 million gallons of high flow storage volume when influent flows exceed the treatment capacity of the treatment plant. This combined storage volume of 164 million gallon is designed to handle an ADWF of up to 1.9 mgd.

During the term of this permit, the Permittee plans to develop and implement a Joint Use Program with the Airport-Larkfield-Wikiup Sanitation Zone (ALWSZ) Wastewater Treatment Facility, which is operated by the Sonoma County Water Agency, and the City of Santa Rosa. See section II.E of this Fact Sheet for additional information.

The effluent storage ponds are not part of the treatment system and therefore, Technology Based Effluent Limitations contained in the Order are applicable at the point of completion of treatment and disinfection. The effluent storage ponds allow the Permittee to balance influent flows with recycled water demand and its ability to discharge to receiving waters in compliance with discharge requirements.

4. Recycled Water

During the discharge prohibition season from May 15 through September 30, advanced treated wastewater is recycled. Recycled water is supplied for irrigation of rural pasture, crops, and vineyards and for landscaping at the Windsor Golf Course and in-Town parks, playgrounds, commercial facilities, and residential properties. Recycled water is also supplied for toilet flushing at several locations, including Windsor High School, and Fire Station No. 2. In addition, recycled water is delivered to the City of Santa Rosa Geysers Recharge project pipeline where it is used for recharge of the Geysers steamfields to enhance steam production for electrical energy generation.

Currently, the Permittee's reclamation system includes 701 irrigated acres (1,429 total acres) that yields 501 equivalent acres[1].

[1] Equivalent acre is defined as an acre of land that uses 30 inches of irrigation water per season. For example, an acre of vineyard uses approximately 5 inches per year, while pasture or golf course turf uses approximately 30 inches per year. Thus, 1 acre of pasture of golf course is considered 1 equivalent acre, while 6 acres of vineyard would be considered 1 equivalent acre.

In addition, the Permittee currently discharges 0.53 mgd to the Geyser's Recharge project pipeline but has the capability of increasing to 0.75 mgd under its contract with the City of Santa Rosa.

The Permittee owns, operates, and maintains several miles of recycled water transmission mains. Recycling irrigation pump stations are located at the treatment plant and adjacent to the Windsor Golf Course. A booster pump station is located at Mark West Station Road and Trenton-Healdsburg Road. A separate pump station for delivery to the Geysers Recharge Pipeline is also located at the treatment plant.

5. Sludge and Biosolids Handling

Sludge is generated at the Facility in the AWT process. The Permittee's sludge facilities include two sludge ponds, an auxiliary sludge pond, and a sludge decant tank. The two sludge ponds provide 11.9 million gallons of sludge stabilization and storage capacity. A third pond, that currently provides 6.4 million gallons of effluent storage, will be converted to a sludge stabilization pond in the future. Within the ponds, sludge concentrates to a higher solids content and volatile suspended solids are degraded. Surface aerators are used for odor control. The sludge decant tank provides temporary holding and equalization capacity during sludge processing. Sludge can be pumped from outlets in the floor of the tank to dewatering units or to trucks. The tank is equipped with a floating decanter for removing supernatant that may accumulate on the surface. Sludge is typically pumped out of these ponds on an annual basis and hauled by an outside contractor to a site for beneficial land application of biosolids. The land application site is outside of this Regional Water Board's jurisdiction. The outside contractor manages the biosolids land application permit requirements in Regional Water Boards 2 and 5 on behalf of the Permittee.

Solids and screenings from the headworks are currently disposed of at a municipal solid waste landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located within the Mark West Hydrologic Subarea of the Russian River Hydrologic Unit.

2. Advanced treated wastewater that is not recycled may be discharged directly from the treatment system or from the effluent storage pond system at Discharge Point 002 to Mark West Creek, a water of the United States, during the allowed discharge period from October 1 to May 14.

Lower Mark West Creek is part of the Laguna de Santa Rosa watershed[2] and is tributary to the Russian River. The rate of discharge is governed by flow conditions in Mark West Creek, monitored at the Trenton-Healdsburg Bridge, and is limited to 10 percent of the natural flow in the creek during the period of November through April, and to 1 percent of the natural flow in the creek during the month of October and May 1 through 14. The discharge from the City of Santa Rosa Regional Water Reuse System, Laguna Treatment Plant (Laguna Treatment Plant) enters Mark West Creek upstream of the Permittee's point of discharge; therefore, the natural flow of Mark West Creek is determined daily by measuring the creek flow at the Trenton-Healdsburg Bridge and subtracting the discharge flow reported by the City of Santa Rosa.

3. During the dry weather season (May 15 to September 30), and other periods as allowed under this Order, advanced treated wastewater from effluent storage may be recycled for irrigation on authorized use sites at Discharge Point 003A, for landscape irrigation and toilet flushing at Windsor High School at Discharge Point 003B, for recharge at the Geysers Recharge Project at Discharge Point 004, and for distribution as part of the planned Joint Use Program at Discharge Point 005. This Order includes requirements that apply to the production of recycled water at the Facility.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in Order No. R1-2013-0042 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and Discharge Point 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order No. R1-2013-0042 are as follows:

[2] For purposes of this Order, the greater Laguna de Santa Rosa watershed consists of the Laguna de Santa Rosa, Santa Rosa Creek, and Mark West Creek Hydrologic Subareas (HSAs), as mapped in the Basin Plan. The lower reaches of the greater Laguna de Santa Rosa watershed include lower Mark West Creek and the mainstem Laguna de Santa Rosa.

Table F- 2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter	Units	Effluent Limitation			Monitoring Data (February 2014 – June 2019)		
		Average Monthly	Average Weekly	Maxi-mum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	9.85	15	--
	% Removal	85	--	--	95.8[1]	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	4.15	6.8	--
	% Removal	85	--	--	98.5[1]	--	--
pH	standard units	--	--	6.0 – 9.0[2]	--	--	6.05 – 7.86
Total Coliform Organisms	MPN/ 100 mL	--	2.2[3]	23[4]/ 240[5]	--	--	540

Table Notes:

1. Represents the minimum observed percent removal.
2. Represents instantaneous minimum and instantaneous maximum effluent limits.
3. Expressed as a 7-day median.
4. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period.
5. No sample shall exceed an MPN of 240 coliform bacteria per 100 mL.

Table F- 3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitation			Monitoring Data (February 2014 – June 2019)		
		Average Monthly	Average Weekly	Maxi-mum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	standard units	--	--	6.5 – 8.5[1]	--	--	6.88 – 8.5
Total Phosphorus	mg/L	7.8[2]	--	--	2.5	--	--
	lbs	--	--	[3,4]	--	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (February 2014 – June 2019)		
		Average Monthly	Average Weekly	Maxi-mum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Acute Toxicity	% Survival	70[5]/90[6]	--	--	95[7]	--	--

Table Notes:

1. Represents instantaneous minimum and instantaneous maximum effluent limits.
2. Interim effluent limitation effective until January 31, 2019.
3. Final effluent limitation effective October 1, 2022
4. There shall be no net loading of total phosphorus to the waterbodies of the greater Laguna de Santa Rosa watershed.
5. Minimum for one bioassay.
6. Median for any three or more consecutive bioassays.
7. Represents the minimum observed percent survival.

D. Compliance Summary

The Permittee was not assessed any administrative civil liability during the term of Order No. R1-2013-0042.

E. Planned Changes

The Permittee conducted a study to identify projects to accommodate future growth, comply with regulatory requirements, and maintain the operational condition of the Facility. Based on the study recommendations, the Permittee is planning to implement the following planned changes during the permit term:

1. Implement a Water Reclamation Facility (WRF) Influent Wet Well Screen Project to add a new influent wet well screen upstream of the influent pumps and replace the existing headworks grit classifier.

2. Replacement or rehabilitation of the existing headworks screen and washer-compactor in 2022.

3. Rehabilitation and replacement of the existing aeration basin equipment in 2020.

The Permittee is also planning to develop and implement a Joint Use Program with the ALWSZ, Sonoma County Water Agency, and City of Santa Rosa to enable transfer of effluent and reuse and distribution of recycled water from the tertiary storage ponds

owned by the agencies to maximize recycling and minimize surface water discharges. The transfers of disinfected tertiary recycled water may occur between the Permittee and ALWSZ, Sonoma County Water Agency, and/or City of Santa Rosa's tertiary storage ponds and the Permittee's recycled water distribution system. This Order requires the Permittee to submit a report to the Regional Water Board Executive Officer for approval that must include the final design details and operational modifications required for implementation of the Joint Use Program. The report includes documentation of California Environmental Quality Act (CEQA) compliance, recycled water transfer and use agreements, and an operations and management plan that identifies measures that will be implemented to ensure that recycled water transferred from the ALWSZ and City of Santa Rosa storage ponds will not be discharged to surface waters. The Joint Use Program will be effective after the Regional Water Board Executive Officer provides written approval.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (U.S. EPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit authorizing the Permittee to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of chapter 3 of CEQA, (commencing with section 21100) of division 13 of the Public Resources Code. Accordingly, this exemption from CEQA applies to the Regional Water Board's action to adopt those portions of the Order that regulate NPDES discharges.

This action also involves the re-issuance of WDRs for an existing Facility that discharges treated wastewater to land. The Regional Water Board's action in approving those parts of the Order that regulate WDR-related discharges is also exempt from CEQA as an existing Facility for which no expansion of design flow is being permitted at the time of the lead agency's determination pursuant to title 14, California Code of Regulations (CCR), section 15301.

This CEQA exemption does not apply to those portions of the Order that regulate non-NPDES discharges, or projects that may be approved under the WQTF Option or ACO Option to comply with the "No Net Loading" Phosphorus effluent limitation.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

   In 1972, the State Water Board adopted a uniform list of beneficial uses, including descriptions, to be applied throughout all basins of the State. This list was updated in 1996. In addition to the beneficial uses identified on the statewide list, three wetland beneficial uses, recognizing the value of protecting these unique waterbodies have been identified in the North Coast Region: Wetland Habitat (WET); Water Quality Enhancement (WQE); and Flood Peak Attenuation/ Flood Water Storage (FLD). The Native American Cultural (CUL) use and Subsistence Fishing (FISH) use have also been added, identifying the traditional and cultural uses of waters within the North Coast Region.

   There is evidence to conclude that the following are beneficial uses of the greater Laguna de Santa Rosa watershed, which includes Mark West Creek:

   a. **Wetland Habitat (WET) and Water Quality Enhancement (WQE)**. The Laguna de Santa Rosa is described by the Laguna Foundation as the "largest freshwater wetlands complex on the northern California coast…draining a 254-square-mile watershed which encompasses nearly the entire Santa Rosa Plain." It further describes the Laguna de Santa Rosa as "a unique ecological system covering more than 30,000 acres; a mosaic of creeks, open water, perennial marshes, seasonal wetlands, riparian forests, oak woodlands, and grassland." In addition, the Laguna de Santa Rosa Wetland Complex was designated by the Ramsar Convention in 2011 as a Wetland of International Significance because of the ecosystem services the Laguna de Santa Rosa provides.

   b. **Flood Peak Attenuation/Flood Water Storage (FLD)**. According to the Sonoma County's Hazard Migration Plan (adopted in 2011), the Laguna de Santa Rosa acts as a "huge reservoir, storing up to 80,000 acre-feet of water." Federal Emergency Management Agency (FEMA) and other publicly available maps clearly identify the Laguna floodplain, which extend from the City of Cotati in the south to the Town of Windsor to the north.

c. Subsistence Fishing (FISH). Fishing is a historic and existing use of the Laguna de Santa Rosa. In addition to sport fishing, it is logical to assume that fish caught in the Laguna de Santa Rosa is consumed to supplement the diet of local and transient residents.

Beneficial uses applicable to the Mark West Hydrologic Subarea of the Middle Russian River Hydrologic Area, are summarized in Table F-4, below:

Table F- 4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Mark West Creek within the Mark West Hydrologic Subarea of the Middle Russian River Hydrologic Area	Existing: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Groundwater recharge (GWR); Freshwater replenishment (FRSH); Navigation (NAV); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Commercial and sport fishing (COMM); Warm Freshwater Habitat (WARM); Cold freshwater habitat (COLD); Wildlife habitat (WILD); Rare, threatened, or endangered species (RARE); Migration of aquatic organisms (MIGR); Spawning, reproduction, and/or early development (SPWN); Water Quality Enhancement (WQE); Wetland Habitat (WET); Flood Attenuation (FLD); and Subsistence Fishing (FISH). Potential: Industrial process supply (PRO); Hydropower generation (POW); Shellfish Harvesting (SHELL), and Aquaculture (AQUA).

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Groundwater	Existing: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); and Native American Culture (CUL). Potential Industrial Process Supply (PRO); and Aquaculture (AQUA).

In addition to the beneficial uses set out in the Basin Plan, there are several implementation plans that include actions intended to meet water quality objectives and protect beneficial uses of the North Coast Basin. For the Russian River and its tributaries, no point source waste discharges are allowed during the period of May 15 through September 30 and for all other periods, the receiving stream's flow must be at least 100 times greater than the waste flow unless an exception to the requirements is granted by the Regional Water Board. Additionally, the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater and shall meet a median coliform level of 2.2 MPN/100 mL.

Requirements of this Order implement the Basin Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR**). U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.

3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Domestic Water Quality.** 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 (MCLs) implemented by the Basin Plan that are designed to protect human health and ensure that water is safe for domestic use.

5. **Compliance Schedules and Interim Requirements.** The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy became effective on August 27, 2008.

   This Order includes a compliance schedule and interim effluent limitations for total phosphorus in accordance with the Compliance Schedule Policy. See section VI.C.7.a of this Fact Sheet for additional discussion of the compliance schedule.

6. **Antidegradation Policy.** 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. As discussed in detail in section IV.D.2 of this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

8. **Endangered Species Act Requirements.** This Order does not authorize an act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A sections 1531 to 1544).

This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Permittee is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on the CWA section 303(d) List

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses after implementation of technology-based effluent limitations on point sources. Each state must submit an updated list, the 303(d) List of Impaired Waterbodies every two years. In addition to identifying the waterbodies that are not supporting beneficial uses, the 303(d) list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment.

The CWA requires development of a total maximum daily load (TMDL) or alternate program of implementation for each 303(d) listed pollutant and water body to remedy the impairment. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources).

On April 6, 2018, the U.S. EPA provided final approval of the 2014 and 2016 303(d) List of Impaired Water Bodies prepared by the state. The list identifies the entire Russian River watershed, including the Laguna de Santa Rosa and Mark West Creek hydrologic subareas, as impaired by sedimentation/siltation and temperature. The Laguna de Santa Rosa and portions of the Lower Russian River are identified as impaired by pathogenic indicator bacteria, and the Laguna de Santa Rosa is identified as impaired by low dissolved oxygen, phosphorus, and mercury. Additionally, the main stem of Mark West Creek, downstream of the Laguna de Santa Rosa, is identified as impaired for aluminum, manganese, low dissolved oxygen, and phosphorus. Pursuant to CWA section 303(d), the Regional Water Board will develop TMDLs to address the impairments, which will be implemented through various programs, including through provisions of NPDES permits.

On August 14, 2019, the Regional Water Board adopted the Action Plan for the Russian River Watershed Pathogen TMDL (TMDL Action Plan or Action Plan) and Prohibition of the Discharge of Fecal Waste Material as an amendment to the Basin Plan. The Action Plan describes the Program of Implementation designed to control fecal waste pollution, achieve bacterial water quality objectives, and restore the water contact recreation (REC-1) beneficial use to protect public health. The Action Plan establishes wasteload allocations (WLAs) for point source discharges and load allocations (LAs) for nonpoint source discharges.

Both WLAs and LAs are expressed as receiving water concentrations of *E. coli* bacteria in freshwater and enterococci in saline waters identical to the statewide bacteria objective for the protection of REC-1 for those sources that are permitted to discharge. For municipal wastewater discharges to freshwater surface waters within the Russian River Watershed, the *E. coli* bacteria WLAs are less than and equal to 100 colony forming units (cfu) per 100 milliliters (mL) as a six-week rolling geometric mean, calculated weekly, and a statistical threshold value (STV) of 320 cfu/ mL not to be exceeded more than ten percent of the time, calculated monthly. There are no municipal wastewater discharges to saline water in the Russian River Watershed, so therefore there are no applicable WLAs for enterococci bacteria.

For direct discharges from the Facility to surface waters, the total coliform effluent limitations derived from title 22 requirements for disinfected tertiary recycled water are sufficient to ensure compliance with WLAs for *E. coli* bacteria because the title 22 total coliform limits are more stringent than the applicable *E. coli* bacteria water quality objectives.

The TMDL Action Plan further identifies wastewater holding pond discharges to surface waters as a special area of concern due to the potential for regrowth of bacteria in these ponds. The Action Plan states that the Regional Water Board will begin to conduct reasonable potential analyses based on information submitted by the implementing party for entities that discharge wastewater from wastewater holding ponds to surface water. For discharges with reasonable potential to cause or contribute to an exceedance of the WLAs, water quality-based effluent limitations will be established in the applicable waste discharge requirements that will ensure compliance with WLAs for bacteria. This Order requires the Permittee to monitor for *E. coli* bacteria for all discharges from storage ponds to surface waters and to conduct a Pathogen Special Study in order to develop data needed to assess whether or not the Permittee's discharge is a source of pathogens as defined in the TMDL Action Plan. If there is reasonable potential for pond discharges to exceed the *E. coli* bacteria water quality objectives, a pathogen source study is required to determine if bacteria discharged from the storage ponds is of human origin and, if so, effluent limitations would be established in the next permit.

Regional Water Board staff is currently developing TMDLs for phosphorus, dissolved oxygen, temperature, and sediment for the greater Laguna de Santa Rosa watershed to address legacy and continuing water quality impairments. Development of a mercury TMDL for the Laguna de Santa Rosa is not yet scheduled.

Aspects of the sediment impairing the Russian River watershed include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column.

An analysis of the Permittee's effluent monitoring data for discharges to Mark West Creek indicates levels of TSS and settleable solids in the effluent are generally less than the effluent limitations required by this Order. Thus, the discharge does not typically contain sediment (e.g., settleable solids, suspended solids, and turbidity) at levels which will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River watershed. This finding is based, in part, on the advanced level of treatment provided by the Facility, which removes settleable solids and reduces TSS and turbidity to negligible levels in wastewater discharged to Mark West Creek. This finding is also supported by the summer discharge prohibition, and the 10 percent (November 1 through April 30) and 1 percent (October 1 through 30 and May 1 through 14) flow limitations for the winter discharge.

With regard to temperature, the critical time period for temperature is in the summer, which is also the time period when point source discharges from the Facility are prohibited. Because of the summer discharge prohibition, the Facility does not contribute to temperature loadings in the receiving water during the hottest, most critical season of the year.

TMDLs for nitrogen, ammonia and dissolved oxygen were approved by the U.S. EPA in 1995 in the form of the Waste Reduction Strategy for the Laguna de Santa Rosa. The Waste Reduction Strategy called for the reduction of nitrogen loads to address ammonia toxicity concerns along the mainstem Laguna de Santa Rosa. The Strategy was implemented via improvements to municipal wastewater treatment facilities and dairy management practices in the greater Laguna de Santa Rosa watershed. These improvements are the likely cause of observed reductions in nutrient and ammonia concentrations in the mainstem Laguna de Santa Rosa between the late 1990s and 2000s.

E. Other Plans, Policies and Regulations

1. On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems and on August 6, 2013 adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage was November 2, 2006. The Permittee applied for coverage and is subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any future revisions thereto for operation of its wastewater collection system.

2. The State Water Board Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial Storm Water General Permit) regulates storm water discharges from wastewater treatment facilities with design flows greater than 1.0 mgd. Storm water that falls within the confines of the Facility is not returned to the headworks for treatment, therefore the Permittee is enrolled under the Industrial Storm Water General Permit.

3. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Recycled Water Activities. The Order acknowledges that the Permittee is regulated under the General Order for land application of Class B biosolids.

4. On February 3, 2009, the State Water Board adopted Resolution 2009-0011, Adoption of a Policy for Water Quality Control for Recycled Water (Recycled Water Policy) (Revised December 11, 2018, effective April 8, 2019) for the purpose of increasing the use of recycled water from municipal wastewater sources in a manner that implements state and federal water quality laws. The Recycled Water Policy provides direction to the regional water boards regarding the appropriate criteria to be used in issuing permits for recycled water projects and describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. Pertinent provisions and requirements of the Policy have been incorporated into this Order to address conditions specific to the Permittee's plan to implement water recycling.

The Recycled Water Policy recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. The Recycled Water Policy further recognizes that these conditions can be caused by natural soils/conditions, discharges of waste, irrigation using surface water, groundwater or recycled water, and water supply augmentation using surface or recycled water, and that regulation of recycled water alone will not address these conditions. It is the intent of the Recycled Water Policy that salts and nutrients from all sources be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional Salt and Nutrient Management Plans (SNMPs) rather than through imposing requirements solely on individual recycled water projects. This Order is consistent with the requirements of the Recycled Water Policy to implement a SNMP.

Beginning in 2010, the Permittee has organized and has helped fund a SNMP development process. This Order may be reopened to incorporate provisions consistent with any SNMPs adopted by the Regional Water Board.

5. The Permittee is required to obtain coverage under the Recycled Water General Order prior to regulate recycled water use. The Permittee maintain coverage under the Recycled Water General Order for recycled water use. The Recycled Water General Order includes requirements and provisions that apply to the use of recycled water and includes monitoring requirements for priority pollutants, total coliform organisms, and turbidity, as well as use area monitoring requirements that include recycled water flow, acreage applied, application rate and observations for soil saturation/ponding, nuisance conditions (odors, vectors), runoff, and notification signs. This NPDES permit additionally includes filtration process requirements and UV disinfection requirements because these requirements apply to both recycled water and surface water discharges.

6. When applicable, state law requires dischargers to file a petition with the State Water Board, Division of Water Rights, and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of the watercourse.
   The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement. The Permittee filed a petition on May 14, 2009 with regard to its plans to further decrease discharges to Mark West Creek and the Laguna de Santa Rosa upon completion of its Geysers Recharge Project and received approval from the Division of Water Rights on November 9, 2010.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where a reasonable potential to exceed those criteria exists.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A.** The discharge of any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.

   This prohibition is based on the Basin Plan, the previous Order, and State Water Board Order No. WQO 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order No. WQO 2002-0012, the State Water Board found that this prohibition is acceptable in Orders, but should be interpreted to apply only to constituents that are not disclosed by the Permittee, and are not reasonably anticipated to be present in the discharge. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

   The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "disclosed to the permitting authority and…can be reasonably contemplated." [In re the Petition of East Bay Municipal Utilities District et al., (State Water Board, 2002) Order No. WQO 2002-0012, p. 24.] In that Order, the State Water Board cited a case which held the Permittee is liable for the discharge of pollutants "not within the reasonable contemplation of the permitting authority…whether spills or otherwise…" [Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland (4th Cir. 2001) 268 F. 3d 255, 268.] Thus, the State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the Permittee and (2) can be reasonably contemplated by the Regional Water Board.

2. **Discharge Prohibition III.B.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.

   This prohibition has been retained from Order No. R1-2013-0042 and is based on section 13050 of the Water Code and section 5411 of the California Health and Safety Code.

3. **Discharge Prohibition III.C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

   This prohibition has been retained from Order No. R1-2013-0042 and is based on restrictions on the disposal of sewage sludge found in federal regulations [40 C.F.R. part 503 (Biosolids), part 527, and part 258] and title 27 of the CCR.

4. **Discharge Prohibition III.D.** The discharge or recycling use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of

the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).

This prohibition has been retained from Order No. R1-2013-0042 with minor modifications. The term “reclamation” has been replaced with the term “recycling.” Additionally, the reference to the water recycling specifications has been removed since recycled water use requirements are covered under the Recycled Water General Permit. This prohibition is based on the Basin Plan to protect the beneficial uses of the receiving water from unpermitted discharges, and the intent of the Water Code sections 13260 through 13264 relating to the discharge of waste to waters of the state without filing for and being issued an Order. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 C.F.R. section 122.41(m) or an unauthorized discharge, which poses a threat to human health and/or aquatic life, and therefore is explicitly prohibited by this Order.

5. **Discharge Prohibition III.E.** Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

   This prohibition is retained from Order No. R1-2013-0042. This prohibition applies to spills related to SSOs and is based on state standards, including section 13050 of the Water Code and the Basin Plan. This prohibition is consistent with the state’s antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Water in California) in that the prohibition imposes conditions to prevent impacts to water quality, the degradation of water quality, negative effects on receiving water beneficial uses, and lessening of water quality beyond that prescribed in State Water Board or Regional Water Board plans and policies.

   This prohibition is stricter than the prohibitions stated in State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that cause a nuisance, compared to Prohibition III.E of this Order, which prohibits SSO discharges that create nuisance or pollution to waters of the state and land for a more complete protection of human health. The rationale for this prohibition is based on the prevalence of high groundwater in the North Coast Region, and this Region’s reliance on groundwater as a drinking water source.

6. **Discharge Prohibition III.F.** The discharge of waste to land that is not owned by the Permittee, governed by City ordinance, or under agreement to use by the Permittee, or for which the Permittee has explicitly permitted such use, is prohibited, except for use for fire suppression as provided in title 22, sections 60307(a) and 60307(b) of the CCR.

   This prohibition is retained from Order No. R1-2013-0042. Land used for the application of wastewater must be owned by the Permittee or be under the control of the Permittee by contract so that the Permittee maintains a means for ultimate disposal of treated wastewater.

7. **Discharge Prohibition III.G.** The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

   This prohibition has been retained from Order No. R1-2013-0042. This prohibition is a general prohibition that allows the Permittee to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

8. **Discharge Prohibition III.H.** The average daily dry weather flow of waste through the Facility in excess of 1.9 mgd is prohibited until such time as additional storage and/or total recycled water capacity has been added to accommodate a higher average dry weather flow, not to exceed 2.25 mgd. The peak weekly wet weather flow of waste through the Facility shall not exceed 7.2 mgd. Compliance with this prohibition shall be determined as defined in sections VII.K and VII. L of this Order.

   The average dry weather flow prohibition is retained from Order No. R1-2013-0042 and is based on the average dry weather treatment and disposal capacity of the Facility. Consistent with Order No. R1-2013-0042, the average dry weather flow may be increased from 1.9 mgd to 2.25 mgd if the Permittee demonstrates that additional storage and/or disposal capacity has been added to accommodate a higher average dry weather flow.

   The 7.2 MGD peak weekly wet weather flow was submitted by the Permittee as part of the January 2019 Title 22 Engineering report. Specifically, section 2.3.1 (Flowrates) of the Report states that “the current treatment plant capacity is 2.25 million gallons per day (MGD) average dry weather flow (ADWF) and 7.2 MGD peak weekly wet weather flow (PWWWF).”

   This Order establishes a new peak weekly wet weather flow prohibition based on the design treatment capacity of the Facility. Exceedance of this capacity on a weekly basis may result in effluent violations and/or the need to by-pass untreated effluent blended with treated effluent, which is prohibited.

9. **Discharge Prohibition III.I**. The discharge of waste to the Russian River and its tributaries is prohibited during the period from May 15 through September 30 of each year.

   This prohibition is retained from Order No. R1-2013-0042 and is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period May 15 through September 30 (chapter 4, Waste Discharge prohibitions for the North Coast Basin). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

10. **Discharge Prohibition III.J**. During the period from November 1 through April 30 of each year, discharges of advanced treated wastewater to Mark West Creek, a tributary to the Russian River, shall not exceed 10 percent of the natural flow of Mark West Creek. In addition, during the periods of October 1 through October 30 and May 1 through May 14 of each year, discharges of advanced treated wastewater to Mark West Creek shall not exceed 1 percent of the natural flow of Mark West Creek. For the purposes of this Order, the natural flow in Mark West Creek shall be that flow measured at the Trenton-Healdsburg Bridge[3] minus the discharge flow of wastewater from the City of Santa Rosa, Santa Rosa Regional Water Reuse System, Laguna Treatment Plant (Santa Rosa Facility) as reported daily to the Permittee's operations staff by the Santa Rosa Facility operations staff. For the purposes of this Order, compliance with this discharge prohibition shall be determined as follows:

    a. The discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, 10 percent of the most recent daily flow measurement of Mark West Creek as measured at the Trenton-Healdsburg Bridge during the period of November 1 and April 30, or more than 1 percent of the most recent daily flow measurement of Mark West Creek during the periods of October 1 through October 30 and May 1 through May 14. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am and 12:00 midnight; and,

    b. In no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed 10 percent of the total volume of Mark West Creek at the Trenton-Healdsburg Bridge in the same calendar month during the period of

[3] The Permittee shall use United States Geological Survey (USGS) Gauge No. 11455800 (Mark West Creek at Trenton-Healdsburg Bridge) for reporting Mark West Creek flows. Alternatively, the Permittee may utilize the Windsor Water District gauge at the Trenton-Healdsburg Bridge after submitting a report documenting that the gauge is calibrated and maintained in a manner that produces accurate flow measurements and upon approval of the Regional Water Board Executive Officer.

November 1 through April 30, nor 1 percent of the total volume of Mark West Creek in the same calendar month during the periods of October 1 through October 30 and May 1 through May 14.

c. During periods of discharge, the flow gage shall be read at least once daily, after which the discharge flow rate shall be set for no greater than 10 percent (November 1 through April 30) or 1 percent (October 1 through October 30 and May 1 through May 14) of the flow of Mark West Creek at the time of the daily reading. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume comparisons shall be based on the first day of the calendar month to the date when the discharge ceased for the season.

The Basin Plan (Chapter 4, North Coastal Basin Discharge Prohibition No. 4) prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than 1 percent of the receiving water's flow during the allowable discharge season, unless an exception to the requirement is granted by the Regional Water Board. The Basin Plan allows the Regional Water Board to consider for cause exceptions to the 1 percent waste discharge rate limitation and requires that exceptions be defined in NPDES permits for each permittee, on a case by case basis, in accordance with specific requirements that are identified in Chapter 4, Implementation Plans, Point Source Measures, North Coastal Basin, Item 5.

Consistent with Order No. R1-2013-0042, this Order allows discharges at 10 percent of the natural flow of Mark West Creek during the period of November 1 through April 30. The Permittee previously applied for and has been granted an exception to the waste discharge rate limitation. The Permittee has demonstrated consistency with the Basin Plan exception requirement for a discharge rate of 10 percent of the receiving water flow (100:10) between November 1 and April 30, as follows:

a. *The wastewater treatment facility shall be reliable. Reliability shall be demonstrated through analysis of the features of the facility including, but not limited to, system redundancy, proper operation and maintenance, and backup storage capacity to prevent the threat of pollution and nuisance.*

The Permittee's existing wastewater treatment facility is a highly reliable tertiary treatment system with nitrification and denitrification and UV disinfection and effluent storage prior to discharge or distribution of treated, disinfected effluent. During the term of the previous permit, the Permittee's monitoring data further demonstrated this high level of reliability through compliance with effluent limitations.

In addition, the Facility includes many redundancy features, including multiple treatment units so that at least one unit can operate if the other corresponding

units are not in operation, redundant pumps for all treatment processes, a redundant bank of UV lamps in each UV channel, and two high flow storage ponds with a total capacity of 19.6 million gallons that are used if the influent flow exceeds the capacity of the treatment units or if power is unavailable. In addition, the Facility is equipped with an emergency generator that automatically activates within 5 seconds of a power failure and is designed to power critical portions of the treatment plant in the event of a power failure.

b. *The discharge of waste shall be limited to rates and constituent levels which protect the beneficial uses of the receiving waters. Protection shall be demonstrated through analysis of all the beneficial uses of the receiving waters. For receiving waters which support domestic water supply (MUN) and water contact recreation (REC1), analysis shall include expected normal and extreme weather conditions within the discharge period, including estimates of instantaneous and long-term minimum, average, and maximum discharge flows and percent dilution in receiving waters. The analysis shall evaluate and address cumulative effects of all discharges, including point and nonpoint source contributions, both in existence and reasonably foreseeable.*
For receiving waters which support domestic water supply (MUN), the Regional Water Board shall consider the California Department of Health Services evaluation of compliance with the Surface Water Filtration and Disinfection Regulations contained in Section 64650 through 64666, Chapter 17, Title 22 of the California Code of Regulations. Demonstration of protection of beneficial uses shall include consultation with the California Department of Fish and Game regarding compliance with the California Endangered Species Act.

The Permittee submitted an Exception Request with its December 14, 2011 ROWD. The analysis provided by the Permittee in the Exception Request, and reviewed by the Regional Water Board staff, demonstrated that the discharge from the Facility will be limited to concentrations and rates protective of beneficial uses identified in the Order. The Exception Request included an analysis that compared the potential cumulative effects of the discharge of tertiary treated wastewater that could occur under extreme conditions on existing receiving water quality, with existing effluent quality, and models projected conditions. Constituents that were identified and compared to water quality objectives in the Basin Plan for the protection of beneficial uses include: dissolved oxygen, pH, turbidity, floating material, tastes and odors, coloration, settleable material, biostimulatory substances (nitrate, ammonia, organic nitrogen, total phosphorus), toxicity, temperature, pesticides, oil and grease, suspended material, sediment, bacteria, chemical constituents (focusing on priority pollutants that have been detected in the Facility's discharge, including antimony, arsenic, total chromium, copper, lead, nickel, silver, and zinc), and radioactivity.

This Order limits the 10% discharge rate allowance to the period of November through April and requires the Permittee to demonstrate on an annual basis that

the discharge and water recycling operations were conducted in a manner that maximizes water recycling. The Order also includes a zero net loading effluent limitation for total phosphorus in light of known water quality impairments for biostimulatory substances and low dissolved oxygen.
Furthermore, as required by Order No. R1-2013-0042, the Permittee submitted an August 2017 Receiving Water Special Study of Mark West Creek Final Report summarizing the results of a study of the biostimulatory impacts of the discharge on Mark West Creek. Based on the study results, the report concluded that the discharge from the Facility does not result in oxygen depletion or biostimulation in Mark West Creek downstream of the discharge.

c. *The exception shall be limited to that increment of wastewater which remains after reasonable alternatives for reclamation have been addressed*.

The Permittee recycles all treated wastewater from May 15 through September 30 each year. Additional periods of water recycling occur as weather permits. The Permittee stated that it expects being permitted to discharge at up to 10 percent of the creek flow to increase the reliability of the Facility's recycling and disposal system. The reason for this is that rainfall is very unpredictable, and winter weather conditions often make it difficult for the Permittee to discharge or recycle. This happens when irrigation fields are saturated from previous rainfall, but weather conditions suddenly become dry. The Permittee's ability to maximize recycling is further complicated by the fact that when the discharge rate is limited to 1 percent of the receiving water flow, the Permittee must maximize wintertime discharges when creek flows are high, which can result in the Permittee entering the recycling season with limited recycled water in storage.

Having the ability to discharge at this higher discharge rate will allow the Permittee to moderate discharges to Mark West Creek by discharging lower volumes of effluent during high flow periods with the knowledge that the 10 percent discharge rate allowance will permit discharges at rates up to 10 percent later in the discharge season (when creek flows are usually lower thus resulting in a lower volume of discharge than what the Permittee could have discharged by maximizing the 1 percent discharge rate during higher flows), if necessary. This increased flexibility will allow operation of the discharge system to be more predictable, allowing the Permittee to meet storage targets and maximize water recycling.

d. *The exception shall comply with State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California," and the federal regulations covering antidegradation (40 CFR §131.12)*.

The Exception Request concludes that the Facility complies with and meets the requirements of the State and federal antidegradation polices, as described below:

i. The increase in the allowable discharge rate from 1% to 10% will not increase the total annual mass or volume of the Permittee's discharge to Mark West Creek.

ii. The water quality analysis submitted with the Exception Request demonstrates that the discharge will comply with water quality objectives in the Basin Plan and will not adversely impact existing and potential beneficial uses of Mark West Creek.

e. *There shall be no discharge of waste during the period May 15 through September 30*.

The Order prohibits discharges to surface water between May 15 and September 30 each year, during which time the Permittee recycles the treated effluent for urban and agricultural reuse.

11. **Discharge Prohibition III.K**. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited under Water Code section 13375.

    This prohibition is retained from Order No. R1-2013-0042 and is based on the discharge prohibitions contained in section 13375 of the Water Code.

12. **Discharge Prohibition III.L.** The discharge of septage to a location other than an approved septage receiving station is prohibited.

    This prohibition is newly established by this Order and is necessary to ensure that septage received is monitored and introduced into the waste stream in a manner that ensures that pollutants associated with the domestic septage do not pass through the treatment process or interfere with the operation or performance of the Facility. The Permittee may notify the Regional Water Board in the next ROWD submittal if they want to receive septage at a septage receiving station. A proper septage waste receiving plan must ensure that the strength and characteristics of the septage waste does not interfere with the operation and performance of the Facility.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards.

The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

In addition, 40 C.F.R. section 122.45(d)(2) states that technology-based permit limits shall be stated as average weekly and average monthly discharge limitations, unless impracticable, for POTWs. 40 C.F.R. section 103.102 provides detailed specifications for establishing effluent limitations for the technology-based constituents, BOD5, TSS, and pH. Effluent limitations for BOD5, TSS, and pH in Effluent Limitations IV.A.1.a (Table 5) and IV.A.1.b of this Order were established as required by 40 C.F.R. section 103.102 and have been retained in this Order.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD5, TSS, and pH, as follows:

a. BOD5 and TSS

i. The 30-day average shall not exceed 30 mg/L.

ii. The 7-day average shall not exceed 45 mg/L.

iii. The 30-day average percent removal shall not be less than 85%.

b. pH

i. The pH shall be maintained within the limits of 6.0 to 9.0.

ii. The effluent limitation for pH required to meet the water quality objective is contained in the Basin Plan, Table 3-1.

In addition, 40 C.F.R. section 122.45(f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except for 1) pH, temperature, radiation, or other pollutants, which cannot be appropriately expressed by mass, 2) when applicable standards and limitations are expressed in terms of other units of measure.

2. Applicable Technology-Based Effluent Limitations

The effluent limitations in this Order for BOD_5, TSS, and pH not only meet the technology-based requirements for secondary treatment set forth in section 133.102, but they also are required to meet the water quality-based requirements set forth in the Basin Plan.

In addition to the minimum federal technology-based requirements, the Basin Plan requires that discharges of municipal waste "*shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 mL*" for discharges to the Russian River and its tributaries during October 1 through May 14. This requirement leaves discretion to the Regional Water Board to define advanced wastewater treatment by the implementation of effluent limitations in individual permits.

a. BOD_5 and TSS. As described above, the secondary treatment standards at 40 C.F.R. part 133 establish the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH. For the purpose of regulating municipal waste discharges from the Facility to Mark West Creek, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD_5 and TSS of 10 mg/L, and a weekly average concentration of 15 mg/L, which are technically achievable based on the capability of a tertiary treatment system. In addition, 40 C.F.R. 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. These effluent limitations are retained from Order No. R1-2013-0042.

b. pH. The secondary treatment regulations at 40 C.F.R. part 133 require that pH be maintained between 6.0 and 9.0 standard units. These effluent limitations are applied to the discharge to the storage pond at Discharge Point 001. Note that a

more stringent effluent limitation range of 6.5 – 8.5 for pH is required for the discharge to Mark West Creek at Discharge Point 002 to meet the water quality objective for hydrogen ion concentration (pH) contained in Basin Plan.

c. Mass-Based Effluent Limitations. Federal regulations at 40 C.F.R. section 122.45(f) require that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units.

Among the conditions exempting the application of mass-based limitations is 40 C.F.R. section 122.45(f)(1)(i), which states "*for pH, temperature, and radiation, or other pollutants which cannot appropriately be expressed by mass*" and 40 C.F.R. section 122.45(f)(1)(ii), which states "*when applicable standards and limitations are expressed in terms of other units of measurement*."

This Order does not include mass-based effluent limitations for the following pollutants pursuant to the exceptions in 40 C.F.R. section 122.45(f)(1)(i) and (ii):

i. BOD_5 and TSS, because these two parameters are expressed in terms of concentration and percent removal; and

ii. pH, because this parameter cannot appropriately be expressed by mass.

d. Coliform Bacteria. Even though effluent limits for coliform bacteria are not set out in the federal regulations for secondary treatment, they are included here in the section on technology-based effluent limitations because they reflect technology standards for tertiary treatment. Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore this Order retains the effluent limitations for total coliform bacteria from Order No. R1-2013-0042, with a minor modification to require compliance with the effluent limitations at the end of each operational disinfection channel. These effluent limitations reflect standards for advanced wastewater treatment in the Basin Plan (section 4, Implementation Plans) and as adopted by the State Water Board, DDW in title 22 of the CCR.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced wastewater treatment, is discussed in section IV.B.2 of this Fact Sheet. In addition, this Order contains additional

requirements to meet applicable water quality standards. The rationale for these requirements is discussed in section IV.C.3 of this Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. Beneficial use designations for receiving waters for discharges from the Facility are presented in section III.C.1 of this Fact Sheet.

b. Basin Plan Water Quality Objectives. In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, including the Russian River and its tributaries. For waters designated for use as MUN, the Basin Plan establishes, as applicable water quality criteria, the MCLs established by DDW for the protection of public water supplies at title 22 of the CCR section 64431 (Inorganic Chemicals) and section 64444 (Organic Chemicals).

c. SIP, CTR, and NTR. Water quality criteria and objectives applicable to the receiving water are established by the CTR, established by the U.S. EPA at 40 C.F.R. section 131.38; and the NTR, established by the U.S. EPA at 40 C.F.R. section 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and the NTR.

The SIP, which is described in section III.C.3 of this Fact Sheet, includes procedures for determining the need for, and the calculation of, WQBELs and requires Permittees to submit data sufficient to do so.

At title 22, division 4, chapter 15 of the CCR, DDW has established MCLs for certain pollutants for the protection of drinking water. Chapter 3 of the Basin Plan establishes these MCLs as water quality objectives applicable to receiving waters with the beneficial use designation of municipal and domestic supply.

Aquatic life freshwater and saltwater criteria are identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or 1-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. Aquatic life freshwater criteria were used for the RPA.

Human health criteria are further identified as “water and organisms” and “organisms only”. “Water and organism” criteria are designed to address risks to human health from multiple exposure pathways. The criteria from the “water and organisms” column of the CTR were used for the RPA because the Basin Plan identifies that the receiving water, Mark West Creek, has the beneficial use designation of municipal and domestic supply.

3. Determining the Need for WQBELs

NPDES regulations at 40 C.F.R. section 122.44(d) require effluent limitations to control all pollutants, which are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard.

For WQBELs for toxic pollutants, Section 5.2.3 of the EPA Technical Support Document for Water Quality-based Toxic Controls states “in lieu of an Average Weekly Limit (AWL) for POTWs, EPA recommends establishing an Maximum Daily Limit (MDL) (or a maximum test result for chronic toxicity) for toxic pollutants and pollutant parameters in water quality permitting. This is appropriate for at least two reasons. First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge’s potential for causing acute toxic effects would be missed. A MDL, which is measured by a grab sample, would be toxicologically protective of potential acute toxicity impacts.”

Section 1.4 of the SIP states that maximum daily effluent limitations shall be used for POTWs in place of average weekly effluent limitations for WQBELs. The SIP procedure of calculating an AMEL and an MDEL applies to all CTR pollutants, both those that are for protection of aquatic life and those that are for the protection of human health.

The RPA for discharges from the storage ponds to Mark West Creek at Discharge Point 002 was conducted as follows.

a. Non-Priority Pollutants

i. pH. The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2013-0042. This limitation is based on the water quality objective for all surface waters established in chapter 3, Table 3-1 of the Basin Plan. Federal technology-based requirements prescribed in 40 C.F.R. part 133 are not sufficient to meet these Basin Plan water quality standards.

ii. Nitrogen Compounds. Untreated domestic wastewater contains ammonia nitrogen. Nitrification is a biological process that converts ammonia to nitrite and nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream and inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving stream. Treatment plants such as this Facility often experience minimal nitrification in the winter, full nitrification and denitrification during the warm season, and full nitrification but limited denitrification during transition periods. Effluent limitations for nitrate are included in the Order to assure that the Permittee protects the beneficial uses of the receiving water.

(a) Nitrate. Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (chapter 3) adopts the MCLs, established by DDW for the protection of public water supplies in title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water quality criteria. The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion for Mark West Creek. The Permittee sampled its discharge at Monitoring Location EFF-002 monthly between January 2015 and June 2019. Monitoring results ranged from 0.46 mg/L to 19 mg/L based on 24 samples. Because nitrate levels in the effluent have been measured above 10 mg/L, as N, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water for nitrate. In order to protect water quality, an AMEL for nitrate of 10 mg/L has been established in this Order.

(b) Ammonia. Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan establishes a narrative water quality objective for toxicity, stating that *"[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life*."

Due to concerns regarding ammonia toxicity, the Regional Water Board relies on U.S. EPA's recommended water quality criteria for ammonia to interpret the Basin Plan's narrative objective for toxicity. For freshwater, the recommended criteria are from the April 2013 *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, EPA 822-R-13-001 (2013 Freshwater Criteria). The 2013 Freshwater Criteria is an update to the December 1999 *Update of Ambient Water Quality Criteria for Ammonia* (1999 Freshwater Criteria).

The 2013 Freshwater Criteria recommends acute and chronic water quality criteria for the protection of aquatic life, including salmonids and sensitive freshwater mussel species in the Family Unionidae that are more sensitive to ammonia than salmonids. Like the 1999 Freshwater Criteria document, the 2013 Freshwater Criteria document recommends acute (1-hour average) criteria based on pH and the presence/absence of salmonids and chronic (30-day average) criteria based on pH and temperature and that no 4-day average concentration should exceed 2.5 times the 30-day chronic criterion. In addition, the 2013 Freshwater Criteria document recommends these same criteria for sensitive mussel species.

For this Order, the Regional Water Board has considered the actual conditions documented in the receiving water for discharges from the Facility (paired receiving water pH of 7.95 and temperature of 11.6°C for the acute criterion and paired receiving water pH of 7.5 and temperature of 16.7°C for the chronic criterion, the assumed presence of salmonids, and the assumed presence of mussels) to calculate U.S. EPA's 2013 Freshwater Criteria, which result in acute and chronic criteria of 6.2 mg/L and 1.7 mg/L, respectively.

The maximum observed effluent ammonia concentration was 0.38 mg/L based on 25 samples collected at Monitoring Location EFF-002 between January 2015 and June 2019. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above EPA's 2013 Freshwater Criteria, and WQBEL's for ammonia have not been included in this Order. This Order requires monthly effluent monitoring for ammonia when discharging from Discharge Point 002. Should monitoring results indicate that the discharge has the

reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding appropriate effluent limitations.

iii. Total Coliform. As discussed in section IV.B.2.d of this Fact Sheet, this Order contains effluent limitations for total coliform bacteria that reflect standards for tertiary treated effluent in the Basin Plan (section 4, Implementation Plans) and as adopted by the State Water Board, DDW in Title 22 of the CCR. For direct discharges from the Facility to surface waters (no storage), the effluent limitations established for total coliform will ensure that bacterial standards for water contact recreation are maintained throughout the receiving water. For discharges from storage to receiving waters, this Order requires monitoring for *E. coli* bacteria that will be assessed prior to the next permit renewal to determine the need for bacteria water quality-based effluent limitations for discharges from the storage ponds to receiving waters.

iv. Biostimulatory Substances (Phosphorus and Nitrogen)

The following analysis is based, in part, on data and information presented in a June 14, 2013 memorandum from Rebecca Fitzgerald, supervisor of the Regional Water Board's TMDL Unit, to Charles Reed, et al., and on works referenced therein. In response to public comments received during the public comment period for Order No. R1-2013-0042, this memorandum was revised and reissued on October 22, 2013. The latter version of this memorandum supersedes the former.

(a) Nitrogen and phosphorus are biostimulatory substances.

Nitrogen compounds (ammonia, nitrate, nitrite, and forms of organic nitrogen) and phosphorus compounds (particulate and dissolved forms of phosphorus) in surface waters can stimulate the growth rates of photosynthetic bacteria, algae and other aquatic plants. The overabundance of nitrogen and phosphorus compounds in surface water bodies can result in the excessive growth and decay of these organisms, thus accelerating the process of eutrophication, especially in lake-like waters. These phenomena cause dissolved oxygen levels to drop below concentrations needed for the survival and health of fish and aquatic life, negatively affects the aesthetic quality of water bodies, and impairs other beneficial uses.

Because the Permittee's discharge is a source of nitrogen and phosphorus compounds, Regional Water Board staff have evaluated the

reasonable potential for the discharge to cause, contribute to, or promote biostimulatory conditions in the mainstem Laguna de Santa Rosa and lower Mark West Creek.

Based on the evaluation, appropriate limitations and requirements were established in Order No. R1-2013-0042 and have been retained in this Order to ensure compliance with the Basin Plan's narrative water quality objective for biostimulatory substances that states, "[w]aters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses."

In order to interpret this narrative objective, Regional Water Board staff evaluated several chemical and biological indicators against numeric threshold values, including, but not limited to numeric criteria for phosphorus, nitrogen, and chlorophyll α concentrations. U.S. EPA recommended criteria for total phosphorus (dissolved plus particulate), total nitrogen, and chlorophyll α for rivers and streams and for lakes and reservoirs are based on aggregate ecoregions. Table F-5 contains the applicable criteria for Aggregate Nutrient Ecoregion III, which includes the greater Laguna de Santa Rosa watershed.

Table F- 5. U.S. EPA Recommended Biostimulatory Substance Criteria

Constituent	(Lentic) Criteria for Lakes & Reservoirs[1] (mg/L)	(Lotic) Criteria for Rivers & Streams[2] (mg/L)
Total Phosphorus	0.017	0.02188
Total Nitrogen	0.40	0.38
Chlorophyll α	0.0034	0.00178

Sources:

1. U.S. EPA. 2001. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria: Lakes and Reservoirs in Nutrient Ecoregion III. Publication No. EPA 822-B-01-008. United States Environmental Protection Agency, Washington DC.
2. U.S. EPA. 2000. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria: Rivers and Streams in Nutrient Ecoregion III. Publication No. EPA 822-B-00-016. United States Environmental Protection Agency, Washington DC.

For use in California, the State Water Board developed nutrient screening tools for assessing biostimulatory conditions in water bodies evaluated pursuant to the CWA Section 303(d) listing process. Table F-6 contains the recommended screening criteria for California water bodies.

Table F- 6. California Recommended Biostimulatory Substance Criteria[1]

Constituent	(Lentic) Criteria for Lakes & Reservoirs (mg/L)	(Lotic) Criteria for Rivers & Streams (mg/L)
Total Phosphorus	0.100	0.02
Total Nitrogen	1.200	0.23
Chlorophyll α	0.010	150 (mg/m^2)

Source:

1. SWRCB. 2007. Staff Report; Division of Water Quality; Nutrient Screening Tools for Use in the Clean Water Act Section 303(d) Listing Process. December 26, 2007. State Water Resources Control Board Division of Water Quality, Sacramento, CA.

(b) Receiving water concentrations of nitrogen and phosphorus exceed recommended criteria for biostimulatory substances.

Instream water samples for nutrients and other indicators of biostimulatory conditions have been collected in the water bodies of the greater Laguna de Santa Rosa watershed for decades. Available data and other information suggest that harmful biostimulatory conditions are present in the mainstem Laguna de Santa Rosa and lower Mark West Creek, as demonstrated by elevated amounts of nutrients in the water column and aquatic sediments, elevated levels of chlorophyll α, frequently low dissolved oxygen levels, and the extensive presence of benthic macrophytes (including *Ludwigia* sp.) These water bodies, as well as many of their tributaries, are also facing significant water quality problems due to high levels of instream sedimentation, hydrologic and physical habitat changes, and high water temperatures.

While available data indicate apparent reductions in total nitrogen concentrations since the 1980s, concentrations measured most recently continue to exceed recommended criteria. In fact, total nitrogen concentrations in 100 percent of 86 samples collected and analyzed in the mainstem Laguna de Santa Rosa and lower Mark West Creek during the period from 2001 to 2017 exceed the U.S.EPA recommended criterion of 0.40 mg-N/L, and concentrations in 67 percent of the samples exceed the California recommended criterion of 1.200 mg-N/L for lentic water bodies.

Similarly, while available data indicate significant and substantial reductions in total phosphorus concentrations since the 1970s, concentrations measured most recently continue to far exceed recommended criteria.

In fact, 100 percent of 95 samples collected and analyzed in the mainstem Laguna de Santa Rosa and lower Mark West Creek during the period from 2001 to 2017 exceed both the U.S. EPA recommended criterion of 0.017 mg-P/L and the California recommended criterion of 0.1 mg-P/L for lentic water bodies.

(c) The Permittee's effluent discharge is a controllable source of nitrogen and phosphorus. Treated wastewater from the Permittee's point of discharge to lower Mark West Creek immediately downstream of the Trenton-Healdsburg Road Bridge remains a, controllable point source discharge. The Regional Water Board evaluated total nitrogen and total phosphorus effluent data collected between January 2015 and June 2019. The average concentration of total nitrogen in the treated effluent discharge during this period was approximately 6.1 mg-N/L (calculated by adding the reported monthly concentrations for nitrate, ammonia, and total organic nitrogen; neglecting the concentration of nitrite, which is assumed to be low; then averaging the monthly concentrations). The mass emission of total nitrogen to Mark West Creek from all discharges during this time period was approximately 38,522 pounds. For phosphorus, the average concentration, expressed as total phosphorus, for the same time period was 0.83 mg-P/L, and the mass emission of total phosphorus from all discharges was approximately 4,675 pounds.

During the last six discharge seasons, the Permittee's discharge volume ranged from 0 million gallons (no discharges occurred during the 2013/14 discharge season) to 380 million gallons (discharged between November 2016 and April 2017 in the 2016/17 discharge season). This Order also includes a provision that authorizes the Permittee to discharge up to 10 percent of the flow in lower Mark West Creek in any month from November 1 through April 30, leaving open the possibility of much larger wastewater discharges than have occurred in recent years. However, this Order includes requirements that set additional boundaries that will keep the Permittee from increasing the volume of the discharge or mass of pollutants discharged on a seasonal basis. First, the effluent limitation established in this Order for total phosphorus encourages the Permittee to minimize wastewater discharges that could contribute to harmful biostimulatory conditions in the impaired waters of the greater Laguna de Santa Rosa watershed. Second, the Permittee is committed to operating its system to maximize water recycling, thus minimizing discharges to Mark West Creek. Third, the Permittee has established an operation goal of limiting its discharge to 1 percent or less of the flow of Mark West Creek on a seasonal basis. Fourth, when wastewater discharges cannot be avoided, the effluent limitation requires that those discharges be offset.

While some of the Permittee's effluent discharge to Mark West Creek is presumed to enter the Russian River downstream of the discharge location and exit the watershed to the Pacific Ocean at Jenner, there is evidence that during high flows in the Russian River, lower Mark West Creek and the mainstem Laguna de Santa Rosa backs up, or even flow in reverse, creating conditions that favor the capture of dissolved and particulate nutrient discharges.

Available studies describe the unique hydrology of the mainstem Laguna de Santa Rosa, particularly at its confluence with Mark West Creek, upstream of the Permittee's discharge point, and describe conditions under which a flow restriction is created during flood events in the Russian River. Because it is during heavy rainfall events that the Permittee is most likely to discharge, Regional Water Board staff concludes that pollutants in the Permittee's discharge are likely to be captured and stored in the channels of lower Mark West Creek and the mainstem Laguna de Santa Rosa.

(d) Phosphorus concentrations limit biomass production and drive biostimulatory conditions. Phosphorus loads must therefore be controlled.

In addition to analyzing nutrient data measured in the mainstem Laguna de Santa Rosa and lower Mark West Creek over the last several decades, Regional Water Board staff reviewed scientific literature regarding the relationship between nutrients and biomass production. Based on these reviews, staff concludes that phosphorus is the limiting nutrient in the receiving water system.

Preliminary TMDL linkage analysis and modeling results support the conclusion that total phosphorus concentrations limit algal biomass production in the mainstem Laguna de Santa Rosa and lower Mark West Creek. Results of water quality modeling indicate that sediments in the mainstem Laguna de Santa Rosa and lower Mark West Creek are highly enriched with organic material, which results in a relatively high sediment oxygen demand (SOD). SOD is caused by the oxidation of organic matter in benthic sediments. Sources of organic matter in sediments include leaf litter, soil entering the water body through erosion and deposition, particulate matter from wastewater discharges, and deposition of algal and macrophytic biomass. Regardless of the source, the oxidation of deposited benthic organic matter will exert a SOD on the water column, and drive concentrations of dissolved oxygen to harmfully low levels.

Regional Water Board staff has established linkages between the total phosphorus concentration, algal biomass, carbonaceous biochemical oxygen demand (CBOD), and SOD. According to the assessment, algal biomass contributes to CBOD in the water column, and upon senescence and settling, contributes to the SOD. In the Laguna de Santa Rosa system, total phosphorus concentrations limit both phytoplankton and benthic algal biomass. Reductions in total phosphorus concentrations are therefore expected to reduce algal biomass, CBOD and SOD, which is the primary driver of low dissolved oxygen.

Although the Laguna de Santa Rosa TMDL for phosphorus is not yet fully developed, the evidence is clear that biostimulatory conditions exist and that instream phosphorus concentrations drive those conditions. Currently, the mainstem Laguna de Santa Rosa and lower Mark West Creek have no apparent capacity to assimilate additional phosphorus loads without continuing to exceed the Basin Plan's water quality objectives for biostimulatory substances and dissolved oxygen. Regional Water Board staff therefore conclude that reductions in internal and external phosphorus loads to these water bodies are needed to protect their beneficial uses, and to ultimately improve water quality conditions. The total phosphorus load from the Permittee's discharge is significant because any additional load of total phosphorus exacerbates the level of degradation and impedes recovery of the impaired beneficial uses of the Laguna de Santa Rosa and lower Mark West Creek. However, because phosphorus is the limiting nutrient in these water bodies and excessive phosphorus is the primary driver of biostimulatory conditions, reductions in nitrogen loads beyond current levels are not expected to result in added protection of the beneficial uses, or significant water quality improvements in the water column.

(e) This Order establishes effluent limitations for total phosphorus and total nitrogen to meet water quality standards.

(1) Total Phosphorus

Based on its analysis of effluent and water quality data as well as information on the physical condition of the receiving water body, Regional Water Board staff has determined that permitted discharges of total phosphorus from the Facility occur at levels that promote excessive aquatic growth occurring within the mainstem Laguna de Santa Rosa and lower Mark West Creek and contribute to excursions of the Basin Plan's water quality objectives for biostimulatory substances and dissolved oxygen.

Therefore, in accordance with federal regulations at 40 C.F.R. 122.44(d), this Order retains the WQBEL for total phosphorus contained in Order No. R1-2013-0042.

Instead of a numeric WQBEL for total phosphorus, this Order includes a narrative (BMP-based) effluent limitation, expressed as “no net loading.” This final effluent limitation was established in Order No. R1-2013-0042 and will become effective on October 1, 2022. A “no net loading” effluent limitation represents a conservative effluent limitation to control phosphorus loading to water bodies of the Laguna de Santa Rosa and to prevent further water quality degradation.

The “no net loading” limitation in this Order for phosphorus is appropriate because calculating a numeric effluent limitation is infeasible at this time, due to the lack of sufficient information upon which to base such a limitation. At this time, there is no clear guidance from U.S. EPA or the State Water Board about how to translate narrative water quality criteria for nutrients into numeric water quality standards. Recommended numeric criteria for biostimulatory substances exist (See Tables F-5 and F-6), but the values of those criteria have limited meaning if not considered within a larger context that accounts for the complex physical, biological, and chemical interactions occurring within an aquatic system. Such a comprehensive understanding is not yet available for the Laguna de Santa Rosa and lower Mark West Creek. Furthermore, recommended criteria for total phosphorus differ by an order of magnitude, which suggests that there is no agreement about which water quality criterion would be fully protective of beneficial uses.

The use of a BMP-based permitting approach is consistent with federal regulations at 40 C.F.R. section 122.44(k) where the permitting authority may include BMPs as permit conditions when numeric effluent limitations are infeasible to calculate and where BMPs are necessary to meet state water quality standards. This approach meets the goal of the CWA because the intent of the permit condition is to control phosphorus loading to impaired receiving waters and prevent further water quality degradation through the implementation of pollutant reduction strategies, such as (1) reducing the effluent concentration below detectable levels through source control and/or treatment; (2) reducing loads through water recycling; and/or (3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharged (and of equivalent bioavailability) through the development and implementation of an approved nutrient offset program.

The compliance schedule included in section IV.C.7.a of this Order requires the Permittee to develop and implement strategies to reduce its discharge of total phosphorus in order to comply with the "no net loading" limitation by October 1, 2022. A "no net loading" limitation also provides an indirect benefit when compliance with the limitation is achieved through nutrient offsets because discharges of nutrients from nonpoint source discharges not currently under permit by the Regional Water Board may be controlled.

Finally, Regional Water Board staff is also mindful of the costs associated with treatment plant upgrades that would likely be required to meet the existing recommended nutrient criteria that could conceivably be used as final numeric effluent limitations. In its program-level Discharge Compliance Project Environmental Impact Report (DCP EIR), the City of Santa Rosa compared installation of Enhanced Nutrient Removal (ENR) facilities at its Laguna Treatment Plant to implementation of a nutrient offset program within the Laguna de Santa Rosa watershed and identified the nutrient offset approach as the "Environmentally Superior Option", concluding that a nutrient offset program would be capable of reducing impacts of nutrient loading from the Laguna Treatment Plant to zero. By comparison, construction of ENR facilities could cost as much as $60 million in capital costs and $4.5 million in annual operation and maintenance costs. Similar conclusions would more than likely apply to the Facility. The large cost implications of a treatment plant upgrade associated with meeting a numeric effluent limitation based on existing criteria which may not fully reflect the complexities of this watershed and further underscores the Regional Water Board's finding of infeasibility to develop a numeric effluent limitation at this time, and resulting BMP-based limitation (i.e., "no net loading"), as a cautious and conservative approach to developing an appropriate and protective final effluent limitation.

Section IV.A.2.b of this Order incorporates a final effluent limitation of "no net loading" for total phosphorus. Section VI.C.7.a of this Order includes a compliance schedule that allows the Permittee to achieve compliance with the final effluent limitation for total phosphorus by October 1, 2022.

(2) Total Nitrogen

As explained in the previous section, because phosphorus is the limiting nutrient controlling biostimulatory conditions in the Laguna de Santa Rosa and lower Mark West Creek, reductions in nitrogen loads beyond current levels are not expected to result in added protection of the beneficial uses, or significant water quality improvements. Consequently, Regional Water Board staff has determined that there is no reasonable potential for the Permittee to discharge nitrogen at a level that may cause or contribute to an excursion above the Basin Plan's water quality objective for biostimulatory substances.

However, high concentrations of total nitrogen in the water column can lead to high levels of ammonia toxicity through the conversion of nitrogen compounds to ammonia, which is toxic to fish and aquatic life in its unionized form. While the current level of total nitrogen in the Permittee's discharge is not believed to cause exceedances of the Basin Plan's narrative water quality objective for toxicity, concentrations beyond current levels do have a reasonable potential to violate the Federal and State Antidegradation Policies. Therefore, consistent with Order No. R1-2013-0042, this Order includes a performance-based effluent limitation for total nitrogen that will ensure no degradation occurs and to remain consistent with Federal and State Antidegradation Policies.

b. Priority Pollutants

The SIP establishes procedures to implement water quality criteria from the NTR and CTR and for priority, toxic pollutant objectives established in the Basin Plan. The implementation procedures of the SIP include methods to determine reasonable potential (for pollutants to cause or contribute to excursions above state water quality standards) and to establish numeric effluent limitations, if necessary, for those pollutants showing reasonable potential.

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct an RPA. During the term of Order No. R1-2013-0042, priority pollutant sampling was conducted on December 10, 2014, January 25, 2016, November 14, 2016, January 31, 2018, and February 13, 2019 at Monitoring Locations EFF-002 and RSW-001. All of this data was used to conduct the RPA.

Hardness: The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness; the lower the hardness, the lower the water quality criteria.

The SIP requires water quality criteria be properly adjusted for hardness, using the hardness of the receiving water. The hardness-dependent metal criteria include cadmium, copper, chromium (III), lead, nickel, silver, and zinc. The minimum observed receiving water hardness of 43 mg/L was used to calculate the criteria.

To conduct the RPA, Regional Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each priority, toxic pollutant from effluent and receiving water data provided by the Permittee, and compared this information to the most stringent applicable water quality criterion (C) for each pollutant with applicable water quality criteria from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After a review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303(d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

c. Reasonable Potential Determination

The RPA demonstrated reasonable potential for discharges of cyanide and lead from the Facility to cause or contribute to exceedances of applicable water quality criteria. Reasonable potential could not be determined for all pollutants, as there are not applicable water quality criteria for all pollutants. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for 124 of the 126 priority pollutants.

Table F-7 summarizes the RPAs for each pollutant reported in detectable concentrations in the effluent or the receiving water. The MECs, most stringent water quality objectives/water quality criteria (WQO/WQCs), and background concentrations (B) used in the RPA are presented, along with the RPA results (Yes or No and which trigger) for each toxic pollutant analyzed.

No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Permittee. Attachment F-1 to this Order summarizes the RPA for all 126 priority pollutants.

Table F- 7. Summary of Reasonable Potential Analysis Results

CTR #	Pollutant	Unit	C or Most Stringent WQO/WQC	MEC or Minimum DL[1]	B or Minimum DL[1,2]	RPA Results[3]
1	Antimony	µg/L	6.0	0.42	0.27	No
2	Arsenic	µg/L	10	1.5	2.8	No
3	Beryllium	µg/L	4	0.11	0.26	No
4	Cadmium	µg/L	1.3	0.27	0.15	No
5b	Chromium (VI)	µg/L	11	0.34	0.57	No
6	Copper	µg/L	16[4]	12	11	No
7	Lead	µg/L	1.1	0.23	4.0	Yes
8	Mercury	ng/L	4[5]	0.792[6]	31.1[6]	No
9	Nickel	µg/L	26	4.5	25	No
10	Selenium	µg/L	5.0	0.44	0.31	No
12	Thallium	µg/L	1.7	<0.02	0.082	No
13	Zinc	µg/L	59	39	45	No
14	Cyanide	µg/L	5.2	5.6	6.7	Yes
15	Asbestos	MFL	7	0.2	<0.2	No
58	Anthracene	µg/L	9,600	<0.030	0.15	No
86	Fluoranthene	µg/L	300	<0.030	0.15	No
99	Phenanthrene	µg/L	No Criteria	<0.030	0.24	No
Not Applicable	Ammonia Nitrogen, Total (as N)	mg/L	1.7	0.38	0.18	No
Not Applicable	Nitrate, Total (as N)	mg/L	10	19	3.2	Yes

Table Notes:

1. The Maximum Effluent Concentration (MEC) or maximum background concentration (B) is the actual detected concentration unless it is preceded by "<", in which case the value shown is the minimum detection level as the analytical result was reported as not detected (ND).
2. The MEC or B is "Not Available" when there are no monitoring data for a constituent.

3. RPA Results:
   = Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected.
   = No, if MEC and B or < WQO/WQC or all effluent data are undetected.
   = Undetermined (UD).
4. Copper WQO calculated with a water effects ratio (WER) of 3.42 and the most stringent WQO from the CTR using the lowest receiving water hardness of 43 mg/L (3.42 x 4.5 = 16 µg/L).
5. Represents the water column concentration for translation of the fish tissue WQO for protection of the COMM, WILD, and RARE beneficial uses applicable to Mark West Creek within the Laguna de Santa Rosa watershed, a slow moving waterbody, established in the State Water Board's Final Part 2 of the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Statewide Mercury Objectives).
6. In accordance with the implementation procedures specified in section IV.D.2.c of the Statewide Mercury Objectives, this value represents the maximum observed annual average concentration for comparison with the water column concentration.

Additional details regarding priority pollutant constituents for which reasonable potential was found are included in the following paragraphs:

Cyanide. The CTR establishes a water quality objective for the protection of freshwater aquatic life of 5.2 µg/L. The Permittee sampled the effluent and receiving water for cyanide five times each during the term of Order No. R1-2013-0042. Cyanide was detected in the effluent in one of the five effluent samples, with results ranging from non-detect to 5.6 µg/L. Cyanide was also detected in two of the five receiving water samples, with results ranging from non-detect to 6.7 µg/L. A determination of reasonable potential has been made based on the MEC of 5.6 µg/L and background concentration of 6.7 µg/L exceeding the most stringent water quality objective of 5.2 µg/L. This Order gives the Permittee the option to analyze for cyanide as total or weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136, or an equivalent method in the latest Standard Method edition.

Lead. The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for lead. The criteria for lead are expressed in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Using the worst-case measured hardness from the receiving water (43mg/L) and the U.S. EPA recommended dissolved-total translator, the applicable chronic criterion (maximum 4-day average concentration) is 1.1 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 28 µg/L.

The Permittee sampled the effluent and receiving water for lead five times each during the term of Order No. R1-2013-0042. Lead was detected in the effluent in four of the five effluent samples, with results ranging from non-detect to 0.23 µg/L. Lead was also detected in four of the five receiving water samples, with results ranging from non-detect to 4.0 µg/L. A determination of reasonable potential has been made based on the background concentration of 4.0 µg/L exceeding the most stringent water quality objective of 1.1 µg/L and lead being detected in the effluent.

Additional details regarding priority pollutant constituents for which reasonable potential was not found but warrant further explanation are included in the following paragraphs:

Copper. The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are expressed in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The U.S. EPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. The default WER used for calculating criteria for copper is 1.0. The Permittee has conducted a WER study to determine the site-specific toxicity of copper in the receiving water at the point of discharge. The Permittee's study concluded that a site-specific WER of 3.42 for total recoverable copper applies to the discharge. Using the worst-case measured hardness from the receiving water (70 mg/L), the U.S. EPA recommended dissolved-total translator of 0.96, and the site-specific WER of 3.42, the applicable chronic criterion (maximum 4-day average concentration) is 24 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 34 µg/L.

The Permittee sampled the effluent and receiving water for copper four times during the term of Order No. R1-2013-0042. Copper was detected in the effluent in all four effluent samples, with results ranging from 5.5 µg/L to 12 µg/L. Copper was also detected in all four of the receiving water samples, with results ranging from 1.3 µg/L to 4.7 µg/L. A determination of no reasonable potential has been made based on the MEC of 12 µg/L not exceeding the most stringent water quality objective of 24 µg/L.

Mercury. The State Water Board adopted Resolution 2017-0027 on May 2, 2017, which approved Part 2 of the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Statewide Mercury Provisions). The Statewide Mercury Provisions establish a Sport Fish Water Quality Objective of an average 0.2 mg/kg methylmercury fish tissue concentration within a calendar year for waters with the beneficial uses of commercial and sport fishing (COMM), tribal tradition and culture (CUL), wildlife habitat (WILD), and marine habitat (MAR).

This fish tissue objective corresponds to a water column concentration of 4 ng/L of total mercury for slow moving water bodies (e.g., lagoons, closed estuaries, and marshes) with COMM, CUL, WILD, MAR, and/or RARE uses. The Laguna de Santa Rosa watershed, which includes Mark West Creek, is a slow moving water body and, as shown in Table F-4, the beneficial uses of Mark West Creek include COMM, WILD, and RARE. Therefore, the water column concentration of 4 ng/L is appropriate to translate the Sport Fish Water Quality Objective fish tissue objective for the receiving water.

The Statewide Mercury Provisions specify that the RPA shall be conducted using the maximum annual average effluent and background mercury concentrations for comparison with the Sport Fish Water Quality Objective. The MEC for mercury was 1.05 ng/L, with a maximum annual average of 0.792 ng/L, based on five samples collected during the term of Order No. R1-2013-0042. The maximum annual average background concentration for mercury was 31.1 ng/L based on five samples collected during the term of Order No. R1-2013-0042. Per the RPA procedures in Section IV.D.2.c.1, Step 6 of the Statewide Mercury Provisions, a WQBEL is not required since the highest observed annual effluent mercury concentration of 0.792 ng/L is not greater than the water column concentration of 4 ng/L. However, since the highest observed annual receiving water mercury concentration of 31.1 ng/L is greater than the water column concentration of 4 ng/L, and mercury was detected in the effluent, effluent monitoring is required once per discharge as part of the CTR priority pollutant monitoring requirement.

4. WQBEL Calculations

Final WQBELs have been determined using the methods described in section 1.4 of the SIP.

Step 1: To calculate the effluent limits, an effluent concentration allowance (ECA) is calculated for each pollutant found to have reasonable potential using the following equation, which takes into account dilution and background concentrations:

ECA = C + D (C – B),

Where:

C = the applicable water quality criterion (adjusted for effluent hardness and expressed as the total recoverable metal, if necessary)

D = dilution credit (here D= 0, as the discharge does not qualify for a dilution credit)

B = background concentration

Here, no credit for dilution is allowed, which results in the ECA being equal to the applicable criterion (ECA = C).

Step 2: For each ECA based on an aquatic life criterion/objective (cyanide and lead), the long-term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the values of the CV. When the data set contains less than 10 sample results, or when 80 percent or more of the data set is reported as ND, the CV is set equal to 0.6. Derivation of the multipliers is presented in section 1.4 of the SIP.

From Table 1 in the SIP, the ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for cyanide and lead are 0.321 (acute multiplier) and 0.527 (chronic multiplier). The LTAs are determined as follows in Table F-8.

Table F- 8. Determination of Long Term Averages

Pollutant	Units	ECA		ECA Multiplier		LTA	
		Acute	Chronic	Acute	Chronic	Acute	Chronic
Cyanide, Total (as CN)	µg/L	22	5.2	0.321	0.527	7.06	2.74
Lead, Total Recoverable	µg/L	28	1.1	0.321	0.527	9.0	0.58

Step 3: WQBELs, including an AMEL and MDEL, are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. The CV is set equal to 0.60 for cyanide and lead. The sampling frequency is set equal to 4 (n = 4) for the acute criterion and chronic 4-day criterion. The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multiplier for cyanide and lead is 3.11 and the AMEL multiplier is 1.55. Final WQBELs for cyanide are determined as follows.

Table F- 9. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	Unit	LTA	MDEL Multiplier	AMEL Multiplier	MDEL	AMEL
Cyanide, Total (as CN)	µg/L	2.74	3.11	1.55	8.5	4.3
Lead, Total Recoverable	µg/L	0.58	3.11	1.55	1.8	0.90

For lead, final WQBELs are determined by calculating the lead impact ratio (LIR) for each of the LIR standards (AMEL and MDEL). Attachment G of this Order includes a table with the AMEL and MDEL lead standards.

The lead standards are calculated by taking the variable lead criteria and multiplying it by the ECA multiplier and the appropriate AMEL and MDEL multiplier.

The lead criteria are dependent on the hardness of the receiving water. For example:

AMEL Lead Standard = (*Lead Criteria (Attachment G) * AMEL Multiplier (1.55) * ECA Multiplier (0.527)*

MDEL Lead Standard = *(Lead Criteria (Attachment G) * MDEL Multiplier (3.11) * ECA Multiplier (0.527)*

The lead impact ratio, or final WQBEL, is determined by dividing the lead concentration in each sample by the appropriate lead standard (AMEL and MDEL). If the LIR is greater than 1.0, then the Permittee is not in compliance with the LIR effluent limitation.

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective, the AMEL is set equal to the ECA. From Table 2 of the SIP, when CV = 0.6 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 3.11, and the AMEL multiplier at the 95th percentile occurrence probability equals 1.55. The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier.

5. Whole Effluent Toxicity (WET)

Monitoring and effluent limitations for whole effluent toxicity protect the receiving water from the aggregate effect of a mixture of pollutants that may be present in the effluent. There are two types of WET tests – acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic test is conducted over a longer period of time and may measure mortality, reproduction, and/or growth.

WET requirements are derived from the CWA and the Basin Plan. The Basin Plan establishes a narrative water quality objective for toxicity that states "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, or aquatic life*." Detrimental responses may include, but are not limited to, decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Permittee to conduct WET testing for acute and chronic toxicity, as specified in the MRP (Attachment E, section V).

a. Acute Aquatic Toxicity

Consistent with Order No. R1-2013-0042, this Order includes an effluent limitation for acute toxicity in accordance with the Basin Plan, which requires that the average survival of test organisms in undiluted effluent for any three consecutive 96-hour bioassay tests be at least 90 percent, with no single test having less than 70 percent survival.

The Order implements federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring the Permittee to conduct acute toxicity tests on a fish species and on an invertebrate species to determine the most sensitive species. According to the U.S. EPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/-27F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss*. The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. This Order requires the Permittee to conduct a screening test using a vertebrate and invertebrate species. After the screening test is completed, monitoring can be reduced to the most sensitive species. Attachment E of this Order requires annual acute WET monitoring.

b. Chronic Aquatic Toxicity

The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. The SIP requires that the Permittee demonstrate the presence or absence of chronic toxicity using tests on the fathead minnow, *Pimephales promelas*, the water flea, *Ceriodaphnia dubia*, and the freshwater alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*). Attachment E of this Order requires annual chronic WET monitoring to demonstrate compliance with the narrative toxicity objective.

The Permittee conducted chronic toxicity testing using *P. promelas*, *C. dubia*, and *S. capricornutum.* The following tables summarize the chronic toxicity testing results from the term of Order No. R1-2013-0042.

Table F- 10. Summary of Chronic Toxicity Results

Date	*Ceriodaphnia dubia*		*Pimephales promelas*		*Selenastrum capricornutum*
	Survival (TUc)	Reproduction (TUc)	Survival (TUc)	Growth (TUc)	Growth (TUc)
December 10, 2014	1	4	1	1	1
December 29, 2014	1	>8	--	--	--
February 23, 2015	1	8	--	--	--
March 23, 2015	1	1	--	--	--
January 18, 2016	1	1	1	1	1
February 1, 2016	1	1	--	--	--
February 8, 2016	1	1	--	--	--
January 16, 2017	1	1	1	1	1
January 29, 2018	1	2	1.3	1	1
March 19, 2018	1	1	1	1	--
March 26, 2018	1	1	--	--	--
April 2, 2018	1	2	--	--	--
April 9, 2018	1	1	--	--	--
February 11, 2019	1	1	1	1	1

Chronic toxicity to C. dubia reproduction was observed in three tests conducted in December 2014 and February 2015. The Permittee was unable to collect four accelerated monitoring tests prior to ceasing discharge in March 2015. Upon resuming discharges the following discharge season, in January 2016, the Permittee resumed accelerated monitoring. The Permittee conducted a Toxicity Reduction Evaluation (TRE) to investigate the cause of the observed toxicity and submitted a 5 May 2016 *Toxicity Reduction Evaluation for Ceriodaphnia dubia Final Report* (Robertson-Bryan, Inc.). The TRE included a facility performance review and evaluation, toxicity identification evaluation (TIE), and confirmation of toxicity control; however, the cause of the observed toxicity could not be determined. Based on observed toxicity to *C. dubia*, the Regional Water Board concludes that the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, this Order establishes a narrative effluent limitation for chronic toxicity.

Numeric chronic toxicity effluent limitations have not been included in the Order for consistency with the SIP, which implements narrative toxicity objectives in basin plans and specifies use of a numeric trigger for accelerated monitoring and implementation of a TRE in the event that persistent toxicity is detected.

The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works, that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.*" The process to revise the state's toxicity control provisions is underway. The State Water Board is developing a toxicity amendment to the Water Quality Control Plan for Enclosed Bays and Estuaries of California (toxicity amendment) that will standardize the regulation of aquatic toxicity for all non-oceanic surface waters. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the state's toxicity control provisions are under revision, it is infeasible to develop numeric effluent limitations for chronic toxicity at this time. The permit may be modified, if necessary, to incorporate new statewide toxicity criteria established by toxicity amendment.

This Order includes a reopener that allows the Regional Water Board to reopen the Order and include a numeric chronic toxicity limitation, a revised acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

To ensure compliance with the Basin Plan's narrative toxicity objective, the Permittee is required to conduct chronic WET testing at Monitoring Location EFF-002 as specified in the MRP (Attachment E, section V.B). Furthermore, the MRP (Attachment E, section V.C) requires the Permittee to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity with a result of "Fail" in 100 percent effluent, the Permittee is required to initiate a TRE in accordance with an approved TRE Work Plan. The "Pass/Fail" trigger is not an effluent limitation; it is the toxicity threshold at which the Permittee is required to perform accelerated chronic toxicity monitoring, as well as the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

c. Test of Significant Toxicity (TST)

Order No. R1-2013-0042 established a numeric chronic toxicity trigger of 1.0 TUc = 100/NOEC, using a five-concentration hypothesis test. In 2010, U.S. EPA endorsed the peer-reviewed *Test of Significant Toxicity (TST) two-concentration hypothesis testing approach in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved hypothesis-testing tool to evaluate data from U.S. EPA's toxicity test methods. The TST hypothesis testing approach more reliably identifies toxicity—in relation to the chronic (0.25 or more) mean response of regulatory management concern—than the No Observed Effect Concentration (NOEC) hypothesis-testing approach. The TST hypothesis testing approach more reliably identifies toxicity – in relation to the acute (0.20 or more) mean responses of regulatory management concern – than the NOEC approach used previously to establish effluent limitations for acute toxicity.

Since the TST approach has not previously been applied for determining reasonable potential or establishing effluent limitations for acute toxicity, this Order does not include effluent limitations for acute or chronic toxicity based on the TST approach. However, this Order does require the Permittee to monitor and report results in a manner that will allow the Regional Water Board to conduct an RPA in accordance with the TST approach at the time of the next permit renewal.

The State Water Board is developing a toxicity amendment to the *Water Quality Control Plan for Enclosed Bays and Estuaries of California* that will standardize the regulation of aquatic toxicity for all non-oceanic surface waters. U.S. EPA's TST approach is an essential component of this draft toxicity amendment as it forms the basis for utilizing numeric water quality objectives and acts as the primary means of determining compliance with the proposed effluent limitations.

In a letter dated February 12, 2014, the State Water Board submitted an alternative test process (ATP) request to U.S. EPA Region 9 for the statewide use of a two-concentration toxicity test design when using the TST approach. This two-concentration test design is composed of a single effluent concentration and a control concentration. U.S. EPA approved the ATP request on March 17th, 2014. In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedures Act by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and the Central Valley Clean Water Association (CVCWA). The U.S. EPA withdrew the approval and notified the State Water Board in a memo dated February 11, 2015.

It is important to note that U.S. EPA's rescission of its approval of the ATP is not based on the substantive TST statistical analysis or the scientific validity of a two-concentration test design. The withdrawal letter also states that currently there is a proposed rulemaking to change the language in the ATP regulations at 40 C.F.R. part 136.

The benefits of requiring the TST in new or amended permits include improving the statistical power of the toxicity test and simplifying the analysis as compared to the traditional hypothesis statistical approaches or point estimates. The calculations are straightforward and provide a clear pass/fail result. With the withdrawal of the two-concentration test design approval, an NPDES permit can still require the TST for statistical analyses. Toxicity tests shall be run using a multi-concentration test design in accordance with 40 C.F.R. section 136.3, and the TST shall be utilized with the biological responses from the permitted in-stream waste concentration (IWC) and the control (effluent concentration of zero). However, even with only two of the five concentration biological responses being used, cost savings in the form of time and effort are still realized for the statistical analysis and data interpretation carried out by the Permittee, lab, and permit manager. This Order requires application of the TST for statistical analysis of whole effluent toxicity data.

Tests of Significant Toxicity Design

The TST's null hypothesis for chronic toxicity is:

H_0: Mean response (IWC in % effluent) ≤ 0.75 mean response (control)

Results are analyzed using the TST approach and an acceptable level of chronic toxicity is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

The chronic IWC (in % effluent) for Discharge Point 002 is 100%. The chronic toxicity trigger for Discharge Point 002 is expressed as a null hypothesis (H0) and regulatory management decision (b value) of 0.75 for the chronic toxicity methods in the MRP. The null hypothesis for this discharge is:

H_0: Mean response (100% effluent) ≤ 0.75 mean response (control)
Results shall be analyzed using the TST hypothesis testing approach in section V.B.6.a of the MRP. Compliance with this chronic toxicity limitation is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

When the chronic toxicity test results in a "Fail" or "F," the Permittee must initiate accelerated monitoring as specified in the MRP (Attachment E, section V). After accelerated monitoring, if conditions of chronic toxicity are found to persist, the Permittee will be required to conduct a TRE, as described by the MRP.

Notification requirements for chronic WET testing include a 72-hour verbal notification requirement and a 14-day written report requirement, if test results indicate toxicity. The 14-day written notification is established in the U.S. EPA WET Guidance documents cited in the MRP. The 72-hour verbal notification requirement is being added to provide the Regional Water Board with knowledge of the toxicity in advance of the written report. The 72-hour requirement is intended to give the Permittee sufficient time to make a telephone call to Regional Water Board staff and accounts for non-working days (e.g., weekends). Verbal notification of WET test exceedances may be left by voice mail if the Regional Water Board staff person is not immediately available by telephone.

This Order includes a requirement for the Permittee to conduct a screening test using at least one vertebrate, invertebrate, and plant species.
After the screening test is completed, monitoring can be reduced to the most sensitive species.

Chronic WET limitations will be established if future monitoring results demonstrate that discharges from the Facility are causing or contributing to chronic toxicity in the receiving water.

D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R1-2013-0042.

2. Antidegradation Policies

State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California (the Antidegradation Policy) requires that disposal of waste into waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than established by adopted policies and that higher quality water shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires that (1) higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the policies; and (2) any activity that produces a waste or may produce waste or increased volume or concentration

of waste and discharges to existing high quality water will be required to meet waste discharge requirements that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

Discharges from the Facility are required to maintain protection of the beneficial uses of the receiving water and comply with applicable provisions of the Basin Plan.

This Order is consistent with applicable federal and state antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater beyond that which was permitted to discharge in accordance with Order No. R1-2013-0042.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD5, TSS, pH, and total coliform bacteria. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations for nitrate, total nitrogen, total phosphorus, pH, cyanide, and lead that are more stringent than the minimum, federal technology-based requirements but are necessary to meet water quality standards. These requirements are discussed in section IV.C.3 of the Fact Sheet.

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

E. Interim Effluent Limitations

1. **Total Phosphorus**. See section VI.C.7.a of this Fact Sheet for the rationale for the applicable interim effluent limitations for total phosphorus.

F. Land Discharge Specifications and Requirements

This Order does not authorize discharges to land.

G. Water Recycling Specifications and Requirements

Water Recycling Specifications and Requirements are contained in section IV.C of the Order. The Permittee is required to obtain coverage separately under the Recycled Water General Order to distribute recycled water to authorized use sites; therefore, this Order does not include specifications or requirements for uses of recycled water. All of the water recycling specifications are based on the technical capabilities of the wastewater treatment system and levels required by the Basin Plan and title 22.

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material changes in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Water Code section 13241 requires the Regional Water Board to establish water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and prevention of nuisance, recognizing that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. The Basin Plan establishes water quality objectives specific to the North Coast Region for the protection of past, present, and probable future beneficial uses of water. Factors required for consideration during development of applicable water quality objectives, such as the characteristics of the hydrographic unit under consideration, economic considerations, and other factors required in accordance with section 13241 were considered during the Basin Planning and adoption process.

Here, the Regional Water Board considered all of these factors when developing the waste discharge requirements for the recycled water discharge. Limitations for BOD_5, TSS, total coliform, and pH were derived based upon the treatment capability of the Facility in order to implement water quality objectives that protect the beneficial uses of both surface and groundwater. Both beneficial uses and the water quality objectives have been approved pursuant to state law, and then submitted to and approved by U.S. EPA. In addition, discharge prohibitions were included to prohibit the use of untreated or partially treated wastewater for recycling.

The Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the environmental characteristics, including water quality of the Mark West Creek Hydrologic Subarea of the Russian River Hydrologic Unit, the coordinated control of all factors that affect water quality in the area, and the need to develop and use recycled water, which this Order supports. The Permittee did not submit any evidence regarding whether the waste discharge requirements for recycled water discharges would interfere with the development of needed housing within the region or the costs of compliance, particularly anything to show that the costs of compliance with the Order would be unmanageable.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. Beneficial use designations for groundwater established in the Basin Plan include MUN, AGR, IND, and PRO.

b. Basin Plan Water Quality Objectives. The Basin Plan contains narrative objectives for tastes and odors, bacteria, radioactivity, and chemical constituents (including those chemicals that adversely affect agricultural water supply) that apply to groundwater.

3. Determining the Need for Requirements for Water Recycling

Section IV.C of this Order contains Water Recycling Specifications and Requirements to ensure that the recycled water produced by this Facility meets minimum requirements for the protection of groundwater and surface water. The Water Recycling Specifications are established in this Order to conform to requirements contained in title 22, division 4, chapter 3 of the CCR for the recycling use of disinfected tertiary-2.2 recycled water. The Permittee is required to comply with applicable state and local requirements regarding the production and use of recycled wastewater, including requirements of Water Code sections 13500 – 13577 (Water Reuse) and DDW regulations at title 22, sections 60301 – 60355 of the CCR (Water Recycling Criteria).

The Permittee has submitted an NOI for coverage under the Recycled Water General Order and is required to maintain coverage for the use of recycled water. As such, this Order does not include use area requirements, rather only contains requirements that apply to the production and storage of recycled water.

a. **BOD_5 and TSS.** Consistent with Order No. R1-2013-0042, this Order includes discharge specifications for BOD_5 and TSS that consist of a monthly average of 10 mg/L and a weekly average of 15 mg/L. These levels are technically achievable based on the capability of the tertiary treatment system. These specifications are included in the Order to ensure that discharges to the recycled water system receive proper treatment.

b. **pH**. Consistent with Order No. R1-2013-0042, this Order includes instantaneous minimum and maximum effluent limitations for pH of 6.0 and 9.0, respectively, based on the technology-based effluent limitations required by U.S. EPA pursuant to 40 C.F.R. part 133. These pH limitations are included in the Order to ensure that pH levels are appropriate for the protection of groundwater when discharging to the recycled water system.

c. **Coliform Bacteria.** Consistent with Order No. R1-2013-0042, this Order includes recycled water specifications for total coliform bacteria that reflect standards for tertiary treated recycled water adopted by DDW in title 22 of the CCR and are included to ensure that recycled water quality is protective of human health. Recycled water from this Facility will meet the highest title 22 treatment and disinfection standards and will be suitable for the broad range of recycled water uses identified in title 22, including irrigation of urban landscapes and crops produced for human consumption.

d. **Recycled Water Capacity**. Consistent with Order No. R1-2013-0042, this Order requires that the Permittee maintain, at a minimum a storage capacity of 149 million gallons and maintain the capability to irrigate 393 equivalent acres[4] per year to support the treatment capacity (average daily flow of 1.9 mgd) allowed by this Order. This Order further requires the Permittee to submit a revised title 22 engineering report to the Regional Water Board and DDW and demonstrate increased water recycling capacity to support future requests by the Permittee to increase the dry weather flow capacity above 1.9 mgd.

e. **Joint Use Program**. Consistent with Order No. R1-2013-0042, this Order requires the Permittee to submit a report including the final design details and operational modifications required for implementation of the Joint Use Program, an operations and maintenance plan, documentation of CEQA compliance, and recycled water transfer and use agreements prior to implementing a Joint Use

[4] 30” of irrigation per year is 1 equivalent acre.

Program with the Airport-Larkfield-Wikiup Sanitation Zone, Sonoma County Water Agency, and/or the City of Santa Rosa.

f. **Title 22 Engineering Report**. This Order requires the Permittee to implement a DDW-approved title 22 Engineering Report that demonstrates compliance with Statewide Water Recycling Criteria in title 22, division 4, chapter 3 of the CCR. The Permittee's most recent title 22 engineering report was accepted by DDW by letter dated [DATE].

4. Satisfaction of Antidegradation Policy

The permitted discharge is consistent with the antidegradation provisions of State Water Board Resolution No. 68-16. This Order does not provide for an increase in the volume and mass of pollutants discharged. The discharge will not have significant impacts on the beneficial uses of groundwater because the Order does not authorize the discharge of treated wastewater to groundwater.

As further discussed in MRP section VIII.C and Fact Sheet section VII.E.2, the City of Santa Rosa's May 2013 Salt and Nutrient Management Plan (SNMP) prepared to satisfy requirements of the State Water Board's Recycled Water Policy and the State Sustainable Groundwater Management Act recommends the development of a monitoring and reporting program to support the refinement of the SNMP in the future. This is necessary to ensure the preservation and maintenance of high-quality groundwater. Groundwater monitoring requirements have been included in MRP section VIII.C to implement these requirements.

H. Other Requirements

This Order contains additional specifications that apply to the Facility including:

1. **Filtration Rate.** Consistent with Order No. R1-2013-0042, for discharges at Discharge Point 001, section IV.D.1.a of the Order requires that wastewater be filtered at a rate that does not exceed 5 gallons per minute per square foot of filter surface area, and is based on the definition of filtered wastewater found in title 22 section 60301.320 of the CCR. The title 22 definition is used as a reasonable performance standard to demonstrate that advanced treated wastewater has been coagulated and adequately filtered for removal of pathogens and for conditioning of water prior to the disinfection process.

2. **Turbidity.** Consistent with Order No. R1-2013-0042, this Order specifies that the turbidity of the filtered wastewater not exceed an average of 2 NTU during any 24-hour period; 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU at any time, and is based on the definition of filtered wastewater found in title 22 section 60301.320 of the CCR.

The title 22 definition is used as a reasonable performance standard to ensure adequate removal of turbidity upstream of the disinfection facilities. Properly designed and operated effluent filters will meet this standard. The point of compliance for the turbidity requirements is a point following the effluent filters and before discharge to the disinfection system. The Permittee plans to use chemical addition to supplement microfiltration if limitations for turbidity are exceeded.

3. **Disinfection Process Requirements for the UV Disinfection System.** The Order contains monitoring requirements for the UV disinfection system in section IV.D.2. These requirements are needed to determine compliance with requirements for recycled wastewater systems, established at CCR title 22, division 4, chapter 3 and to ensure that the disinfection process achieves effective pathogen reduction.

   UV system operation requirements are necessary to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses, bacteria) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, and wastewater flow through the UV system. Minimum dosage requirements are based on recommendations by DDW and guidelines established by the National Water Research Institute (NWRI) and American Water Works Association Research (AWWARF) "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Third Edition dated August 2012.Furthermore, a Memorandum dated November 1, 2004, issued by DDW to Regional Water Board Executive Officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring permittees to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines). Minimum UV dosage requirements specified in section IV.D.2 of the Order ensures that adequate disinfection of wastewater will be achieved.

4. **Storage Ponds.** Storage pond requirements are included in section IV.D.3 of the Order to ensure that future storage ponds are constructed in a manner that protects groundwater and complies with requirements of title 27 of the CCR.

I. Compliance Determination for Water Quality-Based Effluent Limitations for Total Phosphorus (Compliance Determination Section VII.O)

Two alternative methods of complying with the No Net Loading effluent limitation for Total Phosphorus have been included in this Permit.

1. The first compliance option is to utilize the WQTF included in this Permit as Attachment I.

The WQTF was developed through a three-year collaborative stakeholder process lead by Sonoma and Gold Ridge Resource Conservation Districts and funded by a Conservation Innovation Grant issued by the US Department of Agriculture. The WQTF is a revised and expanded version of the previous Nutrient Offset Program and was designed to replace it.

The WQTF is intended to provide a method for complying with the "no net loading" effluent limitation for total phosphorus and to maximize the environmental benefits derived from the expenditure of limited funding for water quality protection actions by promoting restoration actions that will improve the Laguna de Santa Rosa's ability to assimilate pollutants of concern.

For the purpose of this Order, the WQTF as adopted by the Regional Water Board by Resolution No. R1-2018-0025 on July 11, 2018 is being modified as follows:

a. To allow direct approval of projects without requiring a pre-qualified practice in order to reduce the time it takes for project approval; (Section 7.4 of the WQTF in Attachment I).

b. To extend the maximum allowable credit banking period. The WQTF adopted as part of this Order allows credits generated by a project to have a credit life that is equal to the project life when that project has received a reduced retirement ratio. (Section 6.3 of the WQTF in Attachment I).

c. To clarify that the Framework does not prescribe a maximum project life. (Section 6.2 of the WQTF in Attachment I).

d. To clarify that credits generated from a project using different practices may be assigned different banking periods which are dependent upon the practice (Section 6.2 of the WQTF in Attachment I).

e. To clarify the required elements of a plan for remedy resulting from a material failure of a project to meet approved practice standards or other requirements of an approved Credit Project Plan (section 8.3 of the WQTF in Attachment I).

Furthermore, the WQTF as adopted by the Regional Water Board within Order No. R1-2020-0012 on August 20, 2020 has subsequently been modified per Amendment Order R1-2021-0041 as follows:

a. To clarify that the WQT Framework within a NPDES Permit is the operative WQT Framework for compliance purposes, and not the Framework attached to Resolution R1-2018-0025 (Footnote 1 of the WQTF in Attachment I).

b. To request that all documents submitted to the Regional Water Board pursuant to the WQTF comply with the most current online accessibility requirements of the Regional Water Board (section 1.3 of the WQTF in Attachment I).

c. To clarify the geographic limitations, credit value, and available use periods for credits (section 2.3 of the WQTF in Attachment I).

d. To clarify the "in time" requirement for credit use shall be satisfied when credits are used consistent with the credit banking provisions included in the WQTF (section 3.2.1 of the WQTF in Attachment I).

e. To clarify the practice types that credit quantification methods must be included for (section 4 of the WQTF in Attachment I).

f. To clarify that trading ratio reductions will be provided when credit-generating projects meet the necessary criteria (section 5.1 of the WQTF in Attachment I).

g. To clarify each trading ratio criteria type's base trading ratio, maximum ratio reduction, and applicable reduction criteria. (Table 5.1 of the WQTF in Attachment I).

h. To reduce confusion in the WQTF, the term "credit life" has been removed. (previously included as section 6.1 from the WQTF)

i. To clarify that credit release schedules must provide reasonable justification for the timing of the release of credits, and that no credits may be released after the project life has ended. (section 6.1 of the WQTF in Attachment I).

j. To create a new category of Permanently Protected Environmental Enhancement Projects (PPEEPs) in the WQTF. (section 6.1.1 of the WQTF in Attachment I).

k. To define the term "banked credit" and clarify that credits are active until used, retired, suspended, or cancelled. (section 6.2 of the WQTF in Attachment I).

l. To clarify the relationship between the presence of applied retirement ratio criteria and a project's credit banking period. (Table 6.1 of the WQTF in Attachment I).

m. To clarify that credits generated before a project is renewed can be banked for the renewed project's life only if the project has received a reduced retirement ratio. (section 6.3 of the WQTF in Attachment I).

n. To require that third-party verification must confirm that the basis for a retirement ratio reduction is still present when a project has received a retirement ratio reduction. (section 8.3 of the WQTF in Attachment I)

o. To clarify that a Project Remedy Workplan must be completed to address a material failure and to provide the available options to remediate a credit deficit resulting from suspended or cancelled credits. (section 8.3.1 of the WQTF in Attachment I)

p. To clarify that suspended or cancelled credits will be dependent on the timing and basis of a material failure. (Footnote 11 of the WQTF in Attachment I)

q. To allow credits awaiting certification to be identified for use within the current discharge season to fulfil the no net loading requirement for phosphorus. (section 9.1 of the WQTF in Attachment I)

r. To clarify that a credit certificate may apply to multiple credits. (Footnote 11 of the WQTF in Attachment I).

s. To clarify that credits, if unused, shall be banked per the approved Credit Project Plan and will be considered active. (section 9.3 of the WQTF in Attachment I)

2. The second method of compliance is through the use of a new Alternative Total Phosphorus Compliance Option (ACO). The ACO is available to the Permittee once the Final Total Phosphorus Effluent Limit applies after the completion of the Compliance Schedule. The ACO is intended to be used for this single permit term to provide a means to support the WQTF through the implementation of a project that would provide uplift to the main stem Laguna de Santa Rosa. The ACO is a short-term solution to supporting the long-term solution which is the WQTF for restoration of the Laguna de Santa Rosa. The ACO requirements are designed with the intent that any restoration project(s) proposed and implemented through the ACO are above and beyond what the WQTF requires.

This included a careful analysis of the mass of phosphorus that the Permittee discharged over the last five years and through the inclusion of a protective trading ratio and an additional margin of safety, as discussed further, below.

The ACO is equally protective of water quality as the WQTF Option identified in item 1, above, by ensuring that a restoration project occurs on the mainstem Laguna de Santa Rosa and/or Mark West Creek and that two pre-qualified practices are developed consistent with the WQTF. Resolution R1-2018-0025 states, “Staff notes that impairments in the Laguna de Santa Rosa are in part driven by ongoing external loads of nutrients, sediment, and oxygen-demanding material. However, there is also a significant role played by internal recycling of past inputs, including regeneration of nutrients from legacy sediment deposits and creation of biomass (and associated oxygen demand) by aquatic plant growth and decay. These conditions underlie the Laguna de Santa Rosa’s current lack of assimilative capacity for additional phosphorus loads, and the consequent need for both pollutant source controls and restoration actions in the watershed.”

The ACO requires the Permittee to develop two pre-qualified practices and to implement restoration project(s) that meet specified criteria, as described in section VII.O.2 of the Order, designed to address legacy impacts of phosphorus through the removal of nutrient-laden sediment and other restoration work in the mainstem Laguna de Santa Rosa and/or Mark West Creek . The restoration project(s) shall not only help to address legacy phosphorus impairments, but also provide ongoing benefits by adding assimilative capacity to the Laguna de Santa Rosa and/or Mark West Creek. The restoration project(s) shall also provide auxiliary benefits such as wildlife habitat and increased riparian vegetation. In addition, the restoration project(s) shall be specifically designed to increase dissolved oxygen levels and reduce water temperature. The restoration project(s) are intended to support restoration of the Laguna de Santa Rosa. This approach is consistent with a BMP-based approach to comply with the “No Net Loading” phosphorus limitation. As with the WQTF option, the ACO is a stricter interpretation of the “No Net Loading” effluent limitation and requires the Permittee to meet specific performance criteria with a margin of safety included to ensure that the final limitation is met. Any restoration projects implemented under the ACO are required to result in the removal of twice as much phosphorus as was discharged over the last permit term to ensure that the “No Net Loading” limitation is met.

The Order further requires that the selected restoration project(s) will meet all specified performance criteria, as described in section VII.O of this Order and be designed to remove at least 4,156 pounds of phosphorus. This number is based on the total phosphorus effluent data collected between January 2015 and June 2019 quantified that the Permittee discharged 4,675 pounds of total phosphorus over a four-and-a-half-year period. Since the ACO will only be available to the Permittee for a maximum of two years the proportional amount would be 2,078 pounds of total phosphorus.
This value would then be multiplied by a factor of 2.0 in order to ensure the project itself generates environmental benefit. The product of 2,078 and 2.0 is further multiplied by a margin of safety factor of 1.25 to ensure the environmental benefit is retained in the event of unusually large Phosphorus discharges by the Permittee over the permit term.

This equation is given below:

PR = (TR+ MOS) * PT= (1.5 + 0.5) * (2,078 lbs) = 4,156 lbs

Where:

PR = Mass of Phosphorus required to be removed or reduced by the ACO Restoration Project = 4,156 lbs

TR = Trading Ratio = (Uncertainty Ratio + Retirement Ratio) = (1.5 + 0) = 1.5

MOS = Margin of Safety=0.5

PT = Total mass of Phosphorus discharged by the Permittee a total of two years based on previous recorded effluent data=2,078lbs

Although Order No. R1-2013-0042 has been in effect for six years, the Regional Water is using the last five years of the permit term (discharge periods 2014-2015 through 2018-2019) to determine the amount of total phosphorus discharged. This approach is consistent with data set period used to conduct the Reasonable Potential Analysis described in section IV.C of the Fact Sheet.

Trading Ratio: A Trading Ratio of 1.5 is applied to the restoration project(s). This is based on the default trading ratio of 2.5 identified under the WQTF which is the sum of two factors, an Uncertainty Ratio of 2.0 and a Retirement Ratio of 0.5.

Both of these factors are applied to increase the amount of Phosphorus that must be removed or reduced by the project to ensure the environmental benefit of the project itself. The two factors are: Uncertainty Ratio- A ratio that accounts for scientific uncertainty, including potential inaccuracies in estimation methods and/or variability in project performance; and the Retirement Ratio- A ratio that sets aside a portion of the offset for net environmental benefit. The WQTF allows the retirement and/or uncertainty ratios to be adjusted downward by as much as 0.5 (each) under several circumstances, including (1) a reduced retirement ratio when a credit-generating project is explicitly designed to enhance environmental values (e.g., habitat or ecosystem restoration, recognized priority or multi-benefit actions); (2) a reduced retirement ratio when a credit-generating project occurs on permanently protected lands; and
(3) a reduced uncertainty ratio when a credit-generating project includes direct measurement of pollutant reductions. In this case, the retirement ratio has been decreased by 0.5 because any restoration project proposed under the ACO must be designed to enhance environmental values, and the uncertainty ratio has also been decreased by 0.5 because it is required that the restoration project(s) include the direct measurement of pollutant reductions.

Margin of Safety: The Margin of Safety (MOS) is an additional uncertainty ratio of 0.5 applied to the restoration project(s). This is a separate added ratio to the Trading Ratio. The MOS is included in the calculation to account for unpredictable factors that impact the Permittee's need to discharge such as weather conditions, the timing of actual phosphorus removed by a selected restoration project(s), and the amount of phosphorus that could be discharged during the permit term.

The MOS is not a factor included in the WQTF. It is unique to the ACO to ensure that the restoration project(s) provide a net benefit to the Laguna de Santa Rosa and/or Mark West Creek through the removal of a substantial amount of sediment that is likely to exceed the amount of phosphorus that the Permittee may discharge during the permit term. As previously stated, the ACO requirements are designed with the intent that any restoration project(s) proposed and implemented through the ACO are above and beyond what the WQTF requires.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

CWA section 303(a-c) requires states to adopt water quality standards, including criteria, where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan.

The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional* [Water] *Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, specific conductance, suspended material, tastes and odors, temperature, total dissolved solids, toxicity, and turbidity.

The receiving water limitation for temperature in this Order includes a requirement that the 7-day average of daily maximum measurements of the receiving water not exceed 64.4° (or 18°C). This numeric limitation is not contained in the Basin Plan but is necessary to ensure that any alteration to the natural receiving water temperature caused by the discharge does not adversely affect beneficial uses.
U.S. EPA Region 10 Guidance (EPA 910-B-03-002) sets a temperature standard for support of salmonids at a 7-day average of the daily maximum temperature of 18°C for non-core rearing habitat. This receiving water limitation in this Order is consistent with U.S. EPA guidance and fully protects beneficial uses.

The dissolved oxygen limitation in this Order reflects the new Basin Plan dissolved oxygen limit that was adopted by the Regional Water Board on June 18, 2015, and effective beginning April 24, 2017, after receiving approval from U.S. EPA. The new Basin Plan dissolved oxygen limitation specifies limits for the WARM, COLD, and SPWN beneficial uses. The WARM, COLD, and SPWN beneficial uses occur in Mark West Creek. This Order includes only the SPWN limitations because it is the most restrictive and protective limit and the SPWN beneficial use is present throughout the entire discharge season.

The dissolved oxygen receiving water limitation provides for consideration of a modified limit for waterbodies for which the aquatic life-based dissolved oxygen requirements are unachievable due to natural conditions. The intent of this language is to provide a means to adjust the dissolved oxygen limit to a concentration less than the 9.0 mg/L daily limit and 11.0 mg/L 7-day moving average limit established in section V.A of the Order and not to increase the limits.

The receiving water limitation for bacteria in section V.A.18 of the Order reflects the new bacteria water quality objectives for applicable to the REC-1 beneficial use adopted by the State Water Board on February 4, 2019 in *Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions and a Water Quality Standards Variance Policy.*

B. Groundwater

Groundwater limitations in this Order have been retained from the previous Order with minor modification to reflect revised sections of title 22. Groundwater limitations are included in the Order to protect the beneficial uses of the underlying groundwater. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater replenishment to surface waters. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater. Groundwater data must be evaluated using appropriate statistical tools to determine when groundwater degradation is occurring.

The Order includes a new groundwater toxicity limitation that was adopted by the Regional Water Board on June 18, 2015, and effective beginning July 18, 2016 after receiving approval from the California Office of Administrative Law.

This new Basin Plan limit requires that groundwaters shall not contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of

permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D to the Order. The Permittee must comply with all standard provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42.
The rationale for the special conditions contained in the Order is provided in section VI.B, below.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

2. Regional Water Board Standard Provisions

In addition to the Federal Standard Provisions (Attachment D), the Permittee shall comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2 of the Order.

a. Order Provision VI.A.2.a identifies the state's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations (e.g., 40 C.F.R. sections 122.41(j)(5) and (k)(2)).

b. Order Provision VI.A.2.b requires the Permittee to notify Regional Water Board staff, orally and in writing, in the event that the Permittee does not comply or will be unable to comply with any Order requirement. This provision requires the Permittee to make direct contact with a Regional Water Board staff person.

B. Monitoring and Reporting Program (MRP) Requirements

The Permittee shall comply with the MRP, included as Attachment E of this Order, and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

a. Standard Revisions (Special Provision VI.C.1.a). Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

ii. When new information that was not available at the time of permit issuance would have justified different permit conditions at the time of issuance.

b. **Reasonable Potential (Special Provision VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Permittee governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. **Whole Effluent Toxicity (Special Provision VI.C.1.c).** This Order requires the Permittee to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a numeric chronic toxicity limitation, new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

d. **303(d)-Listed Pollutants (Special Provision VI.C.1.d).** This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutants that are the subject of any future TMDL action.

e. **Water Effects Ratios (WERs) and Metal Translators (Special Provision VI.C.1.e).** This provision allows the Regional Water Board to reopen this Order if future studies undertaken by the Permittee provide new information and justification for applying a WER or metal translator to a water quality objective for one or more priority pollutants.

f. **Nutrients (Special Provision VI.C.1.f)**. This Order contains effluent limitations for nitrate, total nitrogen, and total phosphorus and effluent monitoring for nutrients (ammonia, unionized ammonia, nitrate, nitrite, organic nitrogen, and total phosphorus). This provision allows the Regional Water Board to reopen this Order if future monitoring data indicates the need for new or revised effluent limitations for any of these parameters.

g. **Salt and Nutrient Management Plans (Special Provision VI.C.1.g).** This provision allows the Regional Water Board to reopen this Order if needed to incorporate provisions consistent with any Regional or sub-regional salt and

nutrient management plan(s) adopted by the Regional Water Board or any amendments to the Recycled Water Policy that are applicable to the Permittee.

h. **Title 22 Engineering Report (Special Provision VI.C.1.h).** This provision allows the Regional Water Board to reopen this Order to adequately implement title 22, if necessary based on the Permittee's title 22 engineering report.

i. **Mixing Zone Study (Special Provision VI.C.1.i).** This provision allows the Regional Water Board to reopen this Order to modify the whole effluent toxicity testing requirements if the Permittee demonstrates to the satisfaction of the Regional Water Board Executive Officer that the conditions of section 1.4.2.2 of the SIP for granting an aquatic life mixing zone are satisfied.

j. **New Discharge Location.** The Permittee is evaluating the feasibility of relocating the outfall from Mark West Creek to the Russian River. This Order may be reopened to authorize a new surface water discharge location and establish associated permit conditions if the Permittee submits a new Report of Waste Discharge and a complete Antidegradation Analysis demonstrating that discharges from the new discharge location are consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

k. **Pathogens (Special Provision VI.C.1.k)**. This provision allows the Regional Water Board to reopen this Order if needed, to adequately implement the Action Plan for the Russian River Watershed Pathogen TMDL.

2. **Special Studies and Additional Monitoring Requirements**

a. **Pathogen Special Study (Special Provision VI.C.2.a).** The Regional Water Board adopted the Russian River Watershed Pathogen TMDL in August 2019, and TMDL-driven effluent limitations may be implemented in future permits.

The Pathogen TMDL notes that tertiary recycled water, such as that produced by the Facility, is fully disinfected and is not considered a source of pathogens of human origin; however, the draft expresses uncertainty about the potential for regrowth of pathogens of human origin, particularly after storage. This Order requires the Permittee to conduct a study to assess the Facility's ability to comply with the bacteria water quality objective in section V.A.18 of the Order and required actions outlined in Table 4 of the Pathogen TMDL and to submit a report that summarizes the results of the Permittee's ability to comply with the bacteria water quality objective and the Pathogen TMDL, and, if necessary, a plan and schedule for achieving compliance with the Pathogen TMDL. The plan of compliance should identify any other studies necessary to demonstrate compliance with the bacteria water quality objective and the Pathogen TMDL (i.e., study to determine whether the discharge includes pathogens of human

origin). The Regional Water Board will use the results of the study to inform the implementation of TMDL-based effluent limitations, if necessary, during the next permit renewal.

b. **Engineering Evaluation of Recycled Water and Wastewater Storage Ponds and Discharge Outfall. (Special Provision VI.C.2.b).** The Permittee is required to demonstrate that storage ponds are being maintained to ensure protection of surface water and groundwater. This Order requires the Permittee to submit a written work plan describing a plan to evaluate all storage ponds and discharge outfall infrastructure to assess the condition of each discharge outfall and its associated infrastructure. Upon completion of the evaluation the Permittee is required to submit a final report describing the condition of each storage pond, outfall and associated infrastructure, and identifying a plan to address deficiencies and to ensure proper on-going maintenance.

c. **Disaster Preparedness Assessment Report and Action Plan (Special Provision VI.C.2.c).** Natural disasters, extreme weather events, sea level rise, and shifting precipitation patterns, some of which are projected to intensify due to climate change, have significant implications for wastewater treatment and operations. Some natural disasters are expected to become more frequent and extreme according to the current science on climate change. In order to ensure that Facility operations are not disrupted, compliance with conditions of this Order are achieved, and receiving waters are not adversely impacted by permitted and unpermitted discharges, this Order requires the Permittee to submit a Disaster Preparedness Assessment Report and Action Plan.

3. **Best Management Practices and Pollution Prevention**

a. **Pollutant Minimization Program (Special Provision VI.C.3.a).** This provision is included in this Order pursuant to section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

4. **Construction, Operation, and Maintenance Specifications**

a. **Operation and Maintenance (Special Provisions VI.C.4.a and b)**. 40 C.F.R. section 122.41(e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.b of this Order, is an integral part of a well-operated and maintained facility.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems (Special Provision VI.C.5.a)

i. Statewide General WDRs for Sanitary Sewer Systems. On May 2, 2006, the State Water Board adopted General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order). The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all SSOs, among other requirements and prohibitions.

On February 20, 2008, the State Water Board adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities in case of sewage spills. On August 6, 2013, the State Water Board adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. WQ 2013-0058-EXEC addressed compliance and enforceability of the Monitoring and Reporting Program and superseded the amendments in Order No. WQ-2008-0002-EXEC. Notification and reporting of SSOs is conducted in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC, and any revisions thereto for operation of its wastewater collection system.

b. Source Control and Pretreatment Provisions (Special Provision VI.C.5.b). Pursuant to Special Provision VI.C.5.b.ii, the Permittee shall implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system, and inspect facilities connected to the system.

40 C.F.R. section 403.8(a) requires POTWs with a total design flow greater than 5 mgd and receiving pollutants which pass through or interfere with the operation of the POTW to establish a POTW Pretreatment Program. The Regional Water Board may also require that a POTW with a design flow of 5 mgd or less develop a POTW Pretreatment Program if the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant in order to prevent interference or pass through. The average dry weather design flow of the Facility is less than 5 mgd; therefore, the Order does not require the Permittee to develop a pretreatment program that conforms to federal regulations. However, in order to prevent interference with the POTW or pass through of pollutants to

the receiving water, the Order requires the Permittee to conduct an industrial waste survey to identify all non-domestic facilities in the service area that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility and to monitor the influent for priority pollutants. If the results of the industrial waste survey or influent monitoring indicate that a pretreatment program is necessary, pursuant to 40 C.F.R. section 403.8(3), the Regional Water Board may reopen this permit to require the Permittee to develop a pretreatment program.

Water Code section 13263.3(d)(1) allows the Regional Water Board to require a discharger to complete and implement a pollution prevention plan if pollution prevention is necessary to achieve a water quality objective, to include, pursuant to Water Code section 13263.3(d)(3), an analysis of the methods that could be used to prevent the discharge of the pollutants into the POTW. These methods can include application of local limits to industrial or commercial dischargers, pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of pollutants to the POTW. The analysis also shall identify sources, or potential sources, not within the ability or authority of the POTW to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible. This Order includes requirements for the Permittee to implement a source identification and reduction program.

A key component of an effective source control program is the identification and location of possible industrial users within the POTW's wastewater collection system. This information is typically obtained by the POTW through industrial waste surveys. The following types of resources can be consulted in compiling a master list of industrial users:

i. Water and sewer billing records

ii. Applications for sewer service

iii. Local telephone directories

iv. Chamber of Commerce and local business directories

v. Business license records

vi. POTW and wastewater collection personnel and field observations

vii. Business associations

viii. The internet

ix. Industrial and non-residential sewer use permit records

In addition, the Regional Water Board recognizes that some form of source control is prudent to ensure the efficient operation of the Facility, the safety of Facility staff, and to ensure that pollutants do not pass through the treatment Facility to impair the beneficial uses of the receiving water. The proposed Order includes prohibitions for the discharge of pollutants that may interfere, pass through, or be incompatible with treatment operations, interfere with the use of disposal of sludge, or pose a health hazard to personnel.

c. Sludge Disposal and Handling Requirements (Special Provision VI.C.5.c). The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 C.F.R. parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27 of the CCR. The Permittee has indicated that all screenings, sludges, and solids removed from the liquid waste stream are currently disposed of off-site through beneficial land application or at a municipal solid waste landfill in accordance with all applicable regulations.

d. Biosolids Management (Special Provision VI.C.5.d). This provision requires the Permittee to comply with the State's regulations relating to the discharge of biosolids to the land. The discharge of biosolids through land application is not regulated under this Order. The Permittee has obtained coverage under the State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge.

e. Operator Certification (Special Provision VI.C.5.e). This provision requires the Facility to be operated by supervisors and operators who are certified as required by title 23, section 3680 of the CCR.

f. Adequate Capacity (Special Provision VI.C.5.f). The goal of this provision is to ensure appropriate and timely planning by the Permittee to ensure adequate capacity for the protection of public health and water quality.

6. Other Special Provisions

a. Discharge and Water Recycling Operations and Management Plan (Special Provision VI.C.6.a). Consistent with Order No. R1-2013-0042, this Order requires the Permittee to implement their Discharge and Water Recycling System Operations and Management Plan to ensure that discharge and water recycling

system operation is conducted in a manner consistent with the Permittee's stated goal of maximizing recycling and minimizing discharges to surface water to the extent possible. In addition, the plan must identify BMPs to ensure that the recycling system is operated at appropriate hydraulic and nutrient agronomic rates.

The Permittee submitted their Discharge and Water Recycling System Operations and Management Plan in September 2014. The Permittee is conducting a capacity engineering study to develop an updated schedule of storage volume and irrigation area associated with particular average daily dry weather flows reflective of the Permittee's revised operations to reduce discharge and increase recycling. Therefore, this Order requires the Permittee to submit an updated plan by August 1, 2022.

b. **Capacity Increase Engineering Report (Special Provision VI.C.6.b).** The Permittee is required to submit an engineering report documenting that treatment and/or total water recycling capacity has been added. This report shall document that the Permittee exceeds the total water recycling capacity of 193 million gallons for Geysers recharge and maintains the capability to irrigate at least 200 million gallons per year at 2.25 mgd average dry weather flow. The Executive Officer will inform the Permittee within 90 days after receipt of the report that the additional capacity is recognized by the Regional Water Board. This provision is newly established by this Order in the event that the Permittee has an increase in discharge volume during the term of the permit.

c. **Storm Water (Special Provision VI.C.6.c).** This provision acknowledges the Permittee's coverage under the Industrial Storm Water General Permit (or subsequent renewed versions of the NPDES General Permit CAS000001).

7. Compliance Schedules

a. **Compliance Schedule for the Final Effluent Limitation for Total Phosphorus (Special Provision VI.C.7.a).** Consistent with Order No. R1-2013-0042, this Order includes a compliance schedule for the Permittee to achieve compliance with final effluent limitations for total phosphorus. The compliance schedule is needed because the Order includes final effluent limitations for total phosphorus that will require the Permittee to implement actions, such as designing and constructing facilities or implementing new or significantly expanded programs and securing financing to comply with the new, more stringent permit limitations that are included in the Order to implement a new water quality objective that is necessary in light of water quality impairments in Mark West Creek, which is part of the greater Laguna de Santa Rosa watershed and listed for water quality impairments due to nutrients, dissolved oxygen, and temperature.

The compliance schedule is in accordance with the State Water Board Compliance Schedule Policy based on the Permittee providing written documentation demonstrating that it needs additional time to complete tasks needed to comply with the more stringent final total phosphorus limitation. The Permittee needs time to complete an assessment to determine the most appropriate way to comply with the final effluent limitation, followed by time to design facilities and/or develop a program and secure financing. The Permittee requested ten years to achieve full compliance. Regional Water Board staff determined that the Permittee should be able to complete the proposed tasks in a period of eight years. The compliance schedule authorized in Order No. R1-2013-0042 and continued in this Order now provides a total of nine years for the Permittee to achieve compliance with the final effluent limitation for total phosphorus. The compliance schedule in this Order authorizes an additional year because the Permittee has continued to make diligent efforts to quantify pollutant levels in the discharge and implement effective source control efforts.
The compliance schedule will result in the highest discharge quality that can be achieved until final compliance is attained. Adding an additional year provides a total compliance schedule to achieve the final effluent limitation for phosphorus that is as short as possible given the challenges in implementing facility improvements, offset projects and/or alternative restoration projects that will result in compliance with the no net discharge phosphorus limitation. No interim compliance dates exceed one year.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 C.F.R. requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code section 13383 authorizes the Regional Water Board to require technical and monitoring reports. The MRP, Attachment E, establishes monitoring and reporting requirements that implement federal and state requirements.
The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring requirements at Monitoring Location INF-001 for BOD5 and TSS are retained from Order No. R1-2013-0042 and are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters.

2. Influent monitoring requirements for flow at Monitoring Location INF-001 are retained from Order No. R1-2013-0042 and are necessary to determine compliance with Discharge Prohibition III.H.

3. This Order retains annual influent monitoring for CTR priority pollutants at Monitoring Location INF-001, as well as quarterly monitoring for CTR priority pollutants detected

during annual monitoring.

B. Effluent Monitoring

Effluent monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Locations EFF-001 and EFF-002 is necessary to demonstrate compliance with effluent limitations and demonstrate whether or not the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.

1. Monitoring Location EFF-001

a. Effluent monitoring frequencies and sample types for flow, BOD5, total coliform, and TSS at Monitoring Location EFF-001 have been retained from Order No. R1-2013-0042.

b. Weekly effluent monitoring for E. coli bacteria has been established in this Order to verify that total coliform limits are protective of the water contact recreation use, consistent with the Statewide Bacteria Provisions.

c. Order No. R1-2013-0042 required daily monitoring for pH at Monitoring Location EFF-001. Monitoring data collected over the term of Order No. R1-2013-0042 demonstrated that the effluent pH from the treatment system at Monitoring Location EFF-001 is relatively consistent and showed no exceedances of the applicable effluent limits. Therefore, this Order reduces monitoring requirements for pH at Monitoring Location EFF-001 from daily to five times per week to correspond to the days that the Facility is fully staffed. The Regional Water Board finds that this frequency is sufficient to determine compliance with the applicable effluent limitations and characterize the effluent for pH.

2. Monitoring Location EFF-002

a. Effluent monitoring frequencies and sample types for flow, dilution rate, ammonia (total and unionized), nitrate, organic nitrogen, and total phosphorus at Monitoring Location EFF-002 have been retained from Order No. R1-2013-0042.

b. Weekly effluent monitoring for E. coli bacteria has been established in this Order to inform Regional Water Board staff of the reasonable potential for the Permittee to exceed water quality objectives for the Pathogen TMDL when discharging from their storage ponds.

c. Order No. R1-2013-0042 required daily monitoring for pH, dissolved oxygen, and temperature at Monitoring Location EFF-002. Effluent monitoring data collected over the term of Order No. R1-2013-0042 demonstrated that the effluent pH, dissolved oxygen, and temperature from the storage pond at Monitoring Location

EFF-002 are relatively consistent, and the discharge has been in consistent compliance with the applicable effluent and receiving water limitations for these pollutants. Therefore, this Order reduces monitoring requirements for pH, dissolved oxygen, and temperature at Monitoring Location EFF-002 from daily to five times per week to correspond to the days that the Facility is fully staffed. The Regional Water Board finds that this frequency is sufficient to determine compliance with the applicable permit conditions and characterize the effluent for pH, dissolved oxygen, and temperature.

d. Order No. R1-2013-0042 required weekly effluent monitoring for BOD5 and TSS at Monitoring Location EFF-002. This Order requires compliance with technology-based effluent limitations for advanced treated wastewater for the discharge from the treatment system to the storage pond at Discharge Point 001 (Monitoring Location EFF-001). Effluent limitations for BOD5 and TSS are not applicable at Discharge Point 002 and maximum effluent BOD5 and TSS concentrations at Monitoring Location EFF-002 were consistently low during the term of Order No. R1-2013-0042. Therefore, this Order discontinues effluent monitoring for BOD5 and TSS at Monitoring Location EFF-002.

e. Order No. R1-2013-0042 required effluent monitoring for hardness once per discharge season. The Regional Water Board utilizes receiving water hardness to adjust CTR hardness-dependent criteria for metals; therefore, effluent monitoring for hardness at Monitoring Location EFF-002 is unnecessary and has been discontinued in this Order.

f. Effluent monitoring data collected during the term of Order No. R1-2013-0042 indicates that the discharge exhibits reasonable potential to cause or contribute to an exceedance of water quality objectives for cyanide and lead at Discharge Point 002.

Therefore, this Order establishes monthly monitoring requirements for cyanide and lead at Monitoring Location EFF-002 to determine compliance with the applicable effluent limitations. This Order allows the Permittee the option to analyze for cyanide as total or weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136, or an equivalent method in the latest Standard Method edition.

g. This Order includes an effluent limitation at Discharge Point 002 for total nitrogen, which is the sum of nitrate, nitrite, ammonia, and organic nitrogen. Therefore, this Order establishes effluent monitoring requirements for nitrite and requires the Permittee to calculate and report the effluent concentration of total nitrogen at Monitoring Location to determine compliance with the applicable effluent limitation.

h. Consistent with Order No. R1-2013-0042, this Order requires effluent monitoring for CTR priority pollutants once per discharge season at Monitoring Location EFF-002 to generate adequate data to perform an RPA.

C. Whole Effluent Toxicity Testing Requirements

WET monitoring requirements are retained from Order No. R1-2013-0042 and are included in this Order to protect the receiving water quality from the aggregate effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period and chronic toxicity testing is conducted over a longer time period and may measure mortality, reproduction, and/or growth. This Order retains once per discharge season monitoring requirements for acute toxicity and chronic toxicity.

In addition to routine toxicity monitoring, this Order requires the Permittee to maintain and update their TRE Work Plan, in accordance with appropriate U.S. EPA guidance, to ensure that the Permittee has a plan to immediately move forward with the initial tiers of a TRE in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

D. Recycled Water Monitoring Requirements

This Order requires the Permittee to comply with applicable state and local requirements regarding the production of recycled water. When distributing recycled water to the recycled water system, the Permittee must monitor its treated effluent at Monitoring Location REC-001 for flow, BOD5, TSS, pH, and total coliform bacteria to demonstrate compliance with water recycling specifications in section IV.C.1 of the Order.

Recycled water monitoring requirements at Monitoring Locations REC-003A, REC-003B, REC-004, and REC-005 have not been retained in this Order and will be included in the monitoring and reporting program issued as part of the Permittee's enrollment under the Recycled Water General Order.

E. Receiving Water Monitoring

1. Surface Water

a. Monitoring Locations RSW-001 and RSW-002

i. Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations. Monitoring requirements at Monitoring Locations RSW-001 and RSW-002 for pH, dissolved oxygen, ammonia (total and

unionized), nitrate, organic nitrogen, total phosphorus, hardness, and CTR priority pollutants have been retained from Order No. R1-2013-0042.

ii. In order to determine compliance with the flow rate prohibition in section III.J of this Order, this Order requires the Permittee to report the receiving water flow rate from USGS Gauge No. 11455800 (Mark West Creek at Trenton-Healdsburg Bridge).

iii. Order No. R1-2013-0042 required continuous receiving water monitoring for temperature during periods of discharge to Mark West Creek in October, November, April, and May (1-14). Continuous receiving water monitoring data collected during these periods between April 2016 and May 2019 demonstrate that the discharge did not cause or contribute to an exceedance of the applicable receiving water limitations for temperature in the downstream receiving water. Therefore, this Order reduces the frequency of temperature monitoring during October, November, April, and May (1-14) from continuous to weekly. The Regional Water Board finds that this frequency will be sufficient to determine the impact of the discharge on the receiving water.

iv. This Order establishes receiving water monitoring requirements for nitrite and requires the Permittee to calculate and report the effluent concentration of total nitrogen at Monitoring Location to characterize the impact of the discharge on the receiving water.

2. Groundwater

a. The North Coast Region has 58 groundwater basins as defined by the Department of Water Resources Bulletin 118.The Santa Rosa Plain is one of 16 priority groundwater basins/sub-basins within the North Coast Region.

Groundwater basins within the North Coast Region are prioritized by combining the methodologies developed by DWR for the Sustainable Groundwater Management Act (SGMA, 2014) and by the State Water Board Comprehensive Groundwater Quality Monitoring Program for California (2003).

b. The Recycled Water Policy requires the development of salt and nutrient management plans (SNMP) for groundwater basins to determine salt and nutrient management contamination risk to the groundwater quality can be caused by naturally-occurring sources of salinity, discharges of agricultural, domestic, industrial, and municipal wastewater; fertilizers; and residual solids (including on-site wastewater treatment systems). In addition, irrigation using imported water, diverted water, surface water, groundwater, or recycled water, and indirect potable reuse for groundwater recharge (groundwater recharge) can contribute to increased salt and nutrient loading. The State Water Board

recognizes that regulation of recycled water alone will not fully address these conditions and encourages collaborative work among salt and nutrient management planning groups, the agricultural community, regional water boards, Integrated Regional Management Planning groups and groundwater sustainability agencies formed under SGMA to achieve the goals of groundwater sustainability, recycled water use, and water quality protection.

c. The City of Santa Rosa led a salt and nutrient management planning group to develop an SNMP for the Santa Rosa Plain. The draft SNMP submitted by the City recognizes the increasing trend in salts and nutrients in the Santa Rosa Plain groundwater basin. The City's primary recommendation in the final SNMP, dated May 2013, is the development of a monitoring and reporting program to support the refinement of the SNMP in the future. The conceptual monitoring framework described in the SNMP proposes the collection of data from existing wells, as well as from new groundwater monitoring wells to be installed for this purpose. The objective is to develop a basin-wide groundwater monitoring plan that will allow for a comprehensive assessment of water quality in relation to beneficial uses supported within the basin and applicable water quality objectives.

d. On September 1, 2015, the Regional Water Board Executive Officer sent a letter to the City approving the proposed conceptual monitoring framework presented in the final SNMP and directing the City to develop a basin-specific MRP and schedule of implementation. Attachment A of the September 1, 2015 Regional Water Board letter included recommendations titled "Necessary Components of a Basin-Specific Monitoring and Reporting Program" for a basin-specific MRP designed to evaluate changes in groundwater basin water quality over time.

e. This Order includes new groundwater monitoring requirements to implement the Permittee's July 10, 2015 Storage Pond Integrity Program Work Plan and Regional Water Board recommendations for a basin-specific MRP designed to evaluate changes in groundwater basin water quality over time as stated in the September 1, 2015 Regional Water Board letter, included as Attachment J to this Order.

F. Other Monitoring Requirements

1. **Filtration Process Monitoring.** Monitoring of the surface loading rate at Monitoring Location INT-001A is necessary to demonstrate compliance with technology requirements set forth in DDW's Alternative Treatment Technology Report for Recycled Water (September 2014 or subsequent). Monitoring of effluent turbidity of the tertiary filters at Monitoring Location INT-001B is required to demonstrate compliance with section 60301.320 of title 22 CCR filtration requirements for disinfected tertiary recycled water.

2. **Disinfection Process Monitoring for UV Disinfection System (Monitoring Location INT-002).** UV disinfection system monitoring requirements at Monitoring Location INT-002 are included to assess compliance of the UV disinfection system with title 22 and guidelines established by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWARF) Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (3rd or subsequent editions).

3. **Visual Monitoring.** Visual monitoring requirements for the effluent (Monitoring Location EFF-002) and the receiving water (Monitoring Locations RSW-001 and RSW-002) have been added to ensure compliance with receiving water limitations in section V of the Order.

4. **Sludge Monitoring.** Sludge monitoring requirements at Monitoring Location BIO-001 serve as a basis for the Permittee to develop the Sludge Handling and Disposal report that is required as part of the Annual Report pursuant to section X.D.2.f of the MRP.

5. **Discharge Monitoring Report Quality Assurance (DMR-QA) Study Program.** Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires major and select minor permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Permittee can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or

   (2) Per the waiver issued by U.S. EPA to the State Water Board, the Permittee can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Permittee shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

6. **Accelerated Monitoring Requirements.** Tables E-3, E-4, and E-5 of the MRP include accelerated monitoring requirements for parameters that are required to be monitored daily, five times per week, weekly, and monthly.

7. **Flow Monitoring.** Section I.D of the MRP requires proper installation, calibration, operation, and maintenance of flow metering devices.

8. **Spill Notification (MRP section X.E).** The MRP that is part of this Order establishes requirements for reporting spills and unauthorized discharges, with the exception of SSOs, which must be reported in accordance with the requirements of State Water Board Order No. 2006-0003-DWQ and WQ-2013-0058-EXEC and any future revisions.

9. **Volumetric Reporting.** Section X.D.4 of the MRP requires reporting of influent volumes, discharge volumes and reuse volumes from the Facility as part of an annual report submitted to GeoTracker. These reporting requirements are in accordance with Order No. WQ 2019-0037-EXEC and any future revisions. Volumetric reporting requirements have been limited to discharge locations and uses that the Permittee currently utilizes. If additional discharge locations or use types are added in the future, the volumetric reporting language should be updated accordingly.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Windsor Water District, Wastewater Treatment, Reclamation, and Disposal Facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following posting on the Regional Water Board's Internet site.

Additionally, the Regional Water Board notified the Permittee and interested agencies and persons of its intent to modify waste discharge requirements for the existing discharge and provided opportunity to submit written comments and recommendations. Notification was provided through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml on September 9, 2021. On December 9, 2021, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding adoption of Order No. R1-2021-0042, modifying Order No. R1-2020-0010.

The Permittee and interested agencies and persons have been notified of the Regional Water Board's intent to modify waste discharge requirements for the existing discharge and have been provided opportunities for public meetings and to submit their written views and recommendations. Notification was provided through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml on September 7, 2021. On December 2, 2021, after due notice to the Permittee and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding adoption of Order No. R1-2021-0042 modifying Order No. R1-2020-0010.

B. Written Comments

Interested persons were invited to submit written comments concerning these tentative WDRs as provided through the notification process. Comments were due to the Regional Water Board Executive Office electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DCD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at http://www.waterboards.ca.gov/northcoast.

To be fully responded to by staff and considered by the Regional Water Board, the written comments were due at the Regional Water Board office by 5:00 p.m. on April 29, 2020.

Furthermore, to be fully responded to by staff and considered by the Regional Water Board, written comments on modifications to Order No. R1-2020-0010 contained in Order No. R1-2021-0042 were due at the Regional Water Board offices by 5:00 p.m. on October 9, 2021.

C. Public Hearing

The Regional Water Board held a public hearing on the draft WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**August 20, 2020**
Time:	8:30 a.m. or as announced in the Regional Water Board's agenda
Location:	Regional Water Board Virtual Board Meeting due to COVD-19 restrictions

Interested persons were invited to participate. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/northcoast where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs.
The petition must be received by the State Water Board at the following address within 30 calendar days of the Regional Water Board's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instruction on how to file a petition for review see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The ROWD, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address identified in section VIII.C, above, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707) 576-2220.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Justin McSmith at Justin.McSmith@waterboards.ca.gov or (707)-576-2082.

Attachment F-1 – Windsor Water District RPA Summary

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Antimony	µg/L	DNQ	0.42	DNQ	0.27	6	--	--	14	--	6	No
Arsenic	µg/L	=	1.5	=	2.8	10	340	150	--	--	10	No
Beryllium	µg/L	=	0.11	=	0.26	4	--	--	--	--	4.0	No
Cadmium	µg/L	=	0.27	=	0.15	1.7	1.7	1.3	--	--	5.0	No
Chromium (III)	µg/L	--	--	--	--	104	870	104	--	--	--	Ud
Chromium (VI)	µg/L	DNQ	0.34	=	0.57	11	16	11	--	--	50	No
Copper	µg/L	=	12	=	11	16	22	16	1,300	--	--	No
Lead	µg/L	DNQ	0.23	=	4.0	1.1	28	1.1	--	--	--	Yes
Mercury	ng/L	=	0.792[1]	=	31.1[1]	4[2]	--	--	50	--	2,000	No
Nickel	µg/L	=	4.5	=	25	26	230	26	610	--	100	No
Selenium	µg/L	DNQ	0.44	DNQ	0.31	5	--	5	--	--	50	No
Silver	µg/L	<	0.020	<	0.020	1.0	1.0	--	--	--	--	No
Thallium	µg/L	<	0.020	DNQ	0.082	1.7	--	--	1.7	--	2	No
Zinc	µg/L	=	39	=	45	59	59	59	--	--	--	No
Cyanide	µg/L	=	5.6	=	6.7	5.2	22	5.2	700	--	150	Yes
Asbestos	MFL	=	0.2	<	0.2	7	--	--	7	--	7	No
2,3,7,8 TCDD	µg/L	<	1.49E-06	<	1.49E-06	1.3E-08	--	--	1.3E-08	--	3.0E-05	No
Acrolein	µg/L	<	2.0	<	2.0	320	--	--	320	780	--	No
Acrylonitrile	µg/L	<	0.40	<	0.40	0.059	--	--	0.059	--	--	No
Benzene	µg/L	<	0.30	<	0.30	1	--	--	1.2	--	1	No
Bromoform	µg/L	<	0.30	<	0.30	4.3	--	--	4.3	--	--	No
Carbon Tetrachloride	µg/L	<	0.40	<	0.40	0.25	--	--	0.25	--	0.5	No
Chlorobenzene	µg/L	<	0.30	<	0.30	70	--	--	680	--	70	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reason-able Potential
Chlorodibromo-methane	µg/L	<	0.40	<	0.40	0.401	--	--	0.401	--	--	No
Chloroethane	µg/L	<	0.40	<	0.40	--	--	--	--	--	--	Uo
2-Chloroethylvinyl ether	µg/L	<	0.70	<	0.70	--	--	--	--	--	--	Uo
Chloroform	µg/L	<	0.40	<	0.40	--	--	--	--	--	--	Uo
Dichlorobromo-methane	µg/L	<	0.40	<	0.40	0.56	--	--	0.56	--	--	No
1,1-Dichloroethane	µg/L	<	0.10	<	0.10	5	--	--	--	--	5	No
1,2-Dichloroethane	µg/L	<	0.40	<	0.40	0.38	--	--	0.38	--	0.5	No
1,1-Dichloroethylene	µg/L	<	0.30	<	0.30	0.057	--	--	0.057	--	6	No
1,2-Dichloropropane	µg/L	<	0.40	<	0.40	0.52	--	--	0.52	--	5	No
1,3-Dichloropropylene	µg/L	<	0.40	<	0.40	0.5	--	--	10	--	0.5	No
Ethylbenzene	µg/L	<	0.40	<	0.40	300	--	--	3,100	--	300	No
Methyl Bromide	µg/L	<	0.40	<	0.40	48	--	--	48	--	--	No
Methyl Chloride	µg/L	<	0.40	<	0.40	--	--	--	--	--	--	Uo

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Methylene Chloride	µg/L	<	0.50	<	0.50	4.7	--	--	4.7	--	5	No
1,1,2,2-Tetrachloroethane	µg/L	<	0.30	<	0.30	0.17	--	--	0.17	--	1	No
Tetrachloro-ethylene	µg/L	<	0.40	<	0.40	0.8	--	--	0.8	--	5	No
Toluene	µg/L	<	0.30	<	0.30	150	--	--	6,800	--	150	No
1,2-Trans-Dichloroethylene	µg/L	<	0.40	<	0.40	10	--	--	700	--	10	No
1,1,1-Trichloroethane	µg/L	<	0.40	<	0.40	200	--	--	--	--	200	No
1,1,2-Trichloroethane	µg/L	<	0.40	<	0.40	0.6	--	--	0.6	--	5	No
Trichloroethylene	µg/L	<	0.40	<	0.40	2.7	--	--	2.7	--	5	No
Vinyl Chloride	µg/L	<	0.40	<	0.40	0.5	--	--	2	--	0.5	No
2-Chlorophenol	µg/L	<	0.66	<	0.66	120	--	--	120	--	--	No
2,4-Dichlorophenol	µg/L	<	0.66	<	0.66	93	--	--	93	--	--	No
2,4-Dimethylphenol	µg/L	<	1.0	<	1.0	540	--	--	540	--	--	No
2-Methyl- 4,6-Dinitrophenol	µg/L	<	0.75	<	0.75	13	--	--	13	--	--	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
2,4-Dinitrophenol	µg/L	<	1.3	<	1.3	70	--	--	70	--	--	No
2-Nitrophenol	µg/L	<	0.90	<	0.90	--	--	--	--	--	--	Uo
4-Nitrophenol	µg/L	<	0.99	<	0.99	--	--	--	--	--	--	Uo
3-Methyl 4-Chlorophenol	µg/L	<	0.58	<	0.58	--	--	--	--	--	--	Uo
Pentachlorophenol	µg/L	<	1.4	<	1.4	0.28	9	7	0.28	--	1	No
Phenol	µg/L	<	0.46	<	0.46	21,000	--	--	21,000	--	--	No
2,4,6-Trichlorophenol	µg/L	<	0.70	<	0.70	2.1	--	--	2.1	--	--	No
Acenaphthene	µg/L	<	0.030	<	0.030	1,200	--	--	1,200	--	--	No
Acenaphthylene	µg/L	<	0.030	<	0.030	--	--	--	--	--	--	Uo
Anthracene	µg/L	<	0.030	DNQ	0.15	9,600	--	--	9,600	--	--	No
Benzidine	µg/L	<	0.59	<	3.0	0.00012	--	--	0.00012	--	--	No
Benzo(a)Anthra-cene	µg/L	<	0.040	<	0.040	0.0044	--	--	0.0044	--	--	No
Benzo(a)Pyrene	µg/L	<	0.040	<	0.040	0.0044	--	--	0.0044	--	0.2	No
Benzo(b)Fluor-anthene	µg/L	<	0.040	<	0.040	0.0044	--	--	0.0044	--	--	No
Benzo(ghi)Pery-lene	µg/L	<	0.040	<	0.040	--	--	--	--	--	--	Uo
Benzo(k)Fluor-anthene	µg/L	<	0.040	<	0.040	0.0044	--	--	0.0044	--	--	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Bis(2-Chloroethoxy) Methane	µg/L	<	0.40	<	0.40	--	--	--	--	--	--	Uo
Bis(2-Chloroethyl)Ether	µg/L	<	0.14	<	0.14	0.031	--	--	0.031	--	--	No
Bis(2-Chloroisopropyl) Ether	µg/L	<	0.40	<	0.40	1,400	--	--	1,400	--	--	No
Bis(2-Ethylhexyl) Phthalate	µg/L	<	0.83	<	0.83	1.8	--	--	1.8	--	4	No
4-Bromophenyl Phenyl Ether	µg/L	<	0.40	<	0.40	--	--	--	--	--	--	Uo
Butylbenzyl Phthalate	µg/L	<	0.60	<	0.60	3,000	--	--	3,000	--	--	No
2-Chloronaphthalene	µg/L	<	0.57	<	0.57	1,700	--	--	1,700	--	--	No
4-Chlorophenyl Phenyl Ether	µg/L	<	0.90	<	0.90	--	--	--	--	--	--	Uo
Chrysene	µg/L	<	0.04	<	0.040	0.0044	--	--	0.0044	--	--	No
Dibenzo(a,h) Anthracene	µg/L	<	0.08	<	0.080	0.0044	--	--	0.0044	--	--	No
1,2-Dichlorobenzene	µg/L	<	0.4	<	0.40	600	--	--	2,700	--	600	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
1,3-Dichlorobenzene	µg/L	<	0.4	<	0.40	400	--	--	400	--	--	No
1,4-Dichlorobenzene	µg/L	<	0.10	<	0.10	5	--	--	400	--	5	No
3,3 Dichlorobenzidine	µg/L	<	0.28	<	2.0	0.04	--	--	0.04	--	--	No
Diethyl Phthalate	µg/L	<	0.30	<	0.30	23,000	--	--	23,000	--	--	No
Dimethyl Phthalate	µg/L	<	0.30	<	0.30	313,000	--	--	313,000	--	--	No
Di-n-Butyl Phthalate	µg/L	<	0.90	<	0.90	2,700	--	--	2,700	--	--	No
2,4-Dinitrotoluene	µg/L	<	0.20	<	0.20	0.11	--	--	0.11	--	--	No
2,6-Dinitrotoluene	µg/L	<	0.30	<	0.30	--	--	--	--	--	--	Uo
Di-n-Octyl Phthalate	µg/L	<	0.60	<	0.60	--	--	--	--	--	--	Uo
1,2-Diphenylhydrazine	µg/L	<	0.33	<	0.33	0.04	--	--	0.04	--	--	No
Fluoranthene	µg/L	<	0.030	DNQ	0.15	300	--	--	300	--	--	No
Fluorene	µg/L	<	0.030	<	0.030	1,300	--	--	1,300	--	--	No
Hexachloro-benzene	µg/L	<	0.89	<	0.89	0.00075	--	--	0.00075	--	1	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reason-able Potential
Hexachloro-butadiene	µg/L	<	0.80	<	0.80	0.44	--	--	0.44	--	--	No
Hexachlorocyclo-pentadiene	µg/L	<	0.45	<	0.45	50	--	--	240	--	50	No
Hexachloroethane	µg/L	<	0.58	<	0.58	1.9	--	--	1.9	--	--	No
Indeno(1,2,3-cd)Pyrene	µg/L	<	0.030	<	0.030	0.0044	--	--	0.0044	--	--	No
Isophorone	µg/L	<	0.30	<	0.30	8.4	--	--	8.4	--	--	No
Naphthalene	µg/L	<	0.040	<	0.040	--	--	--	--	--	--	Uo
Nitrobenzene	µg/L	<	0.30	<	0.30	17	--	--	17	--	--	No
N-Nitrosodimethyl-amine	µg/L	<	0.30	<	0.30	0.00069	--	--	0.00069	--	--	No
N-Nitrosodi-n-Propylamine	µg/L	<	0.30	<	0.30	0.005	--	--	0.005	--	--	No
N-Nitrosodiphenyl-amine	µg/L	<	0.30	<	0.30	5	--	--	5	--	--	No
Phenanthrene	µg/L	<	0.030	=	0.24	--	--	--	--	--	--	Uo
Pyrene	µg/L	<	0.030	<	0.030	960	--	--	960	--	--	No
1,2,4-Trichlorobenzene	µg/L	<	0.59	<	0.59	5	--	--	--	--	5	No
Aldrin	µg/L	<	0.00091	<	0.0020	0.00013	3	--	0.00013	--	--	No
alpha-BHC	µg/L	<	0.0013	<	0.0040	0.0039	--	--	0.0039	--	--	No
beta-BHC	µg/L	<	0.0015	<	0.0020	0.014	--	--	0.014	--	--	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reason-able Potential
gamma-BHC	µg/L	<	0.0037	<	0.0040	0.019	0.95	--	0.019	--	0.2	No
delta-BHC	µg/L	<	0.0018	<	0.0020	--	--	--	--	--	--	Uo
Chlordane	µg/L	<	0.010	<	0.010	0.00057	2.4	0.0043	0.00057	--	0.1	No
4,4'-DDT	µg/L	<	0.0030	<	0.0030	0.00059	1.1	0.001	0.00059	--	--	No
4,4'-DDE	µg/L	<	0.0013	<	0.0040	0.00059	--	--	0.00059	--	--	No
4,4'-DDD	µg/L	<	0.0013	<	0.0050	0.00083	--	--	0.00083	--	--	No
Dieldrin	µg/L	<	0.0015	<	0.0050	0.00014	0.24	0.056	0.00014	--	--	No
alpha-Endosulfan	µg/L	<	0.0021	<	0.0040	0.056	0.22	0.056	110	--	--	No
beta-Endolsulfan	µg/L	<	0.0020	<	0.0020	0.056	0.22	0.056	110	--	--	No
Endosulfan Sulfate	µg/L	<	0.0012	<	0.0030	110	--	--	110	--	--	No
Endrin	µg/L	<	0.0013	<	0.0020	0.036	0.086	0.036	0.76	--	2	No
Endrin Aldehyde	µg/L	<	0.0019	<	0.0020	0.76	--	--	0.76	--	--	No
Heptachlor	µg/L	<	0.0018	<	0.0030	0.00021	0.52	0.0038	0.00021	--	0.01	No
Heptachlor Epoxide	µg/L	<	0.00077	<	0.0090	0.0001	0.52	0.0038	0.0001	--	0.01	No
PCBs sum[3]	µg/L	<	0.040	<	0.040	0.00017	--	0.014	0.00017	--	0.5	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Toxaphene	µg/L	<	0.044	<	0.20	0.0002	0.73	0.0002	0.00073	--	3	No
Ammonia (mussels present)	mg/L	=	0.38	=	0.18	1.71	6.17	1.71	--	--	--	No
Ammonia (mussels absent)	mg/L	=	0.38	=	0.18	4.57	6.17	4.57	--	--	--	No
Nitrate	mg/L	=	19	=	3.2	10	--	--	--	--	10	Yes

Table Notes:

1. In accordance with the implementation procedures specified in section IV.D.2.c of the State Water Board's *Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Statewide Mercury Objectives), this value represents the maximum observed annual average concentration for comparison with the water column concentration.
2. Represents the water column concentration for translation of the fish tissue WQO for protection of the COMM, WILD, and RARE beneficial uses applicable to Mark West Creek within the Laguna de Santa Rosa watershed, a slow moving waterbody, established in the Statewide Mercury Objectives.
3. PCBs sum refers to sum of PCB 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

ATTACHMENT G – AMEL AND MDEL LEAD STANDARDS BASED ON WATER QUALITY CRITERIA FOR FRESHWATER

Receiving Water Hardness as $CaCO_3$ (mg/L)	Freshwater CTR Water Quality Criteria (µg/L)		Effluent Limitations[1] (µg/L)	
	CMC 1-Hour Average	CCC 4-Day Average	Average Monthly	Maximum Daily
5	1.8	0.07	0.057	0.12
10	4.4	0.17	0.14	0.28
15	7.3	0.28	0.23	0.47
20	11	0.41	0.34	0.67
25	14	0.54	0.45	0.89
30	18	0.69	0.56	1.1
35	21	0.84	0.68	1.4
40	25	0.99	0.81	1.6
45	30	1.2	0.94	1.9
50	34	1.3	1.1	2.2
55	38	1.5	1.2	2.4
60	43	1.7	1.4	2.7
65	47	1.8	1.5	3.0
70	52	2.0	1.7	3.3
75	57	2.2	1.8	3.6
80	61	2.4	2.0	3.9
85	66	2.6	2.1	4.2
90	71	2.8	2.3	4.6
95	76	3.0	2.4	4.9
100	82	3.2	2.6	5.2
105	87	3.4	2.8	5.6
110	92	3.6	2.9	5.9
115	98	3.8	3.1	6.2
120	103	4.0	3.3	6.6
125	108	4.2	3.5	6.9
130	114	4.4	3.6	7.3
135	120	4.7	3.8	7.7
140	125	4.9	4.0	8.0
145	131	5.1	4.2	8.4
150	137	5.3	4.4	8.8
155	143	5.6	4.6	9.1
160	149	5.8	4.7	9.5
165	154	6.0	4.9	9.9
170	160	6.3	5.1	10
175	166	6.5	5.3	11

Receiving Water Hardness as $CaCO_3$ (mg/L)	Freshwater CTR Water Quality Criteria (µg/L)		Effluent Limitations[1] (µg/L)	
	CMC 1-Hour Average	CCC 4-Day Average	Average Monthly	Maximum Daily
180	173	6.7	5.5	11
185	179	7.0	5.7	11
190	185	7.2	5.9	12
195	191	7.4	6.1	12
200	197	7.7	6.3	13
205	204	7.9	6.5	13
210	210	8.2	6.7	13
215	216	8.4	6.9	14
220	223	8.7	7.1	14
225	229	8.9	7.3	15
230	236	9.2	7.5	15
235	242	9.4	7.7	16
240	249	9.7	7.9	16
245	255	10	8.2	16
250	262	10	8.4	17
255	269	10	8.6	17
260	276	11	8.8	18
265	282	11	9.0	18
270	289	11	9.2	19
275	296	12	9.4	19
280	303	12	10	19
285	310	12	10	20
290	317	12	10	20
295	324	13	10	21
300	331	13	11	21
310	345	13	11	22
320	359	14	11	23
340	388	15	12	25
350	402	16	13	26
360	417	16	13	27
370	432	17	14	28
380	447	17	14	29
390	462	18	15	30
400	477	19	15	31

Table Notes:

1. Hardness-dependent effluent limitations for lead were developed in accordance with the procedures detailed in section IV.C.4 of the Fact Sheet.

ATTACHMENT H – EXAMPLE LEAD IMPACT RATIO (LIR) CALCULATOR

A	B	C	D	E	F
Date of Sample	**Lead Value in Effluent (µg/L)**	**Receiving Water Hardness (mg/L)**	**Lead Standard as Determined from Lead Criteria Table**	**MDEL Lead Impact Ratio (Column B/ Column D)**	**AMEL Lead Impact Ratio (Column B/ Column D)**

ATTACHMENT I – WATER QUALITY TRADING FRAMEWORK

ATTACHMENT J –SEPTEMBER 1, 2015 REGIONAL WATER BOARD LETTER TO THE CITY OF SANTA ROSA

(Subject line: Santa Rosa Plain Salt and Nutrient Management Plan)