

North Coast Regional Water Quality Control Board

**ORDER NO. R1-2018-0035
NPDES NO. CA0022888
WDID NO. 1B840290MEN**

**WASTE DISCHARGE REQUIREMENTS
AND
WATER RECYCLING REQUIREMENTS**

FOR THE

**CITY OF UKIAH
WASTEWATER TREATMENT PLANT
MENDOCINO COUNTY**

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

Table 1. Permittee Information

Permittee	City of Ukiah
Name of Facility	City of Ukiah Wastewater Treatment Plant
Facility Address	300 Plant Road
	Ukiah, CA 95482
	Mendocino County
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	Secondary Wastewater Treatment: 3.01 million gallons per day (mgd) (average dry weather treatment capacity) 24.5 mgd (peak wet weather treatment capacity) Advanced Wastewater Treatment: 7.0 mgd (peak wet weather treatment capacity)

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Tertiary Treated Wastewater	39° 07' 07"	123° 11' 28"	Russian River
002	Secondary Treated Wastewater	--	--	Percolation Ponds Adjacent to the Russian River
003	Tertiary Treated Wastewater	--	--	Recycled Water System

Table 3. Administrative Information

This Order was adopted on:	September 6, 2018
This Order shall become effective on:	November 1, 2018
This Order shall expire on:	October 31, 2023
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:	November 1, 2022
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

IT IS HEREBY ORDERED, that Waste Discharge Requirements (WDR) Order No. R1-2012-0068 and Monitoring and Reporting Program (MRP) No. R1-2012-0068, are rescinded upon the effective date of this Order except for enforcement purposes, and in order to meet the provisions contained in division 7 of the California Water Code (Water Code) (commencing with section 13000) and regulations and guidelines adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Permittee shall comply with the requirements of this Order. This action in no way prevents the North Coast Regional Water Quality Control Board (Regional Water Board) from taking enforcement action for past violations of the previous permit.

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 **September 6, 2018**.

 Matthias St. John, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Ukiah (Permittee) Wastewater Treatment Plant (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 location described in Table 2 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 VI, VII, VIII.C, IX.A, IX.B, IX.D, 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 dry weather flow of waste through the Facility shall not exceed 3.01 million gallons per day (mgd), measured daily and averaged over a calendar month. The peak daily wet weather flow of waste through the Facility shall not exceed 24.5 mgd, measured daily. The peak daily wet weather flow of waste through the advanced wastewater treatment system shall not exceed 7.0 mgd, measured daily. 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 October 1 through May 14, discharges of treated wastewater to the Russian River shall not exceed one percent of the flow of the Russian River, as measured near Hopland at USGS Gauge No. 11462500. 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, one percent of the most recent daily flow measurement of the Russian River near Hopland at USGS Gauge No. 11462500. 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 one percent of the total volume of the Russian River measured near Hopland at USGS Gauge No. 11462500 in the same calendar month. 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.
- 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 acceptance 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

- a. The discharge of treated wastewater shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001B 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-001B)

Parameter	Units	Effluent Limitations ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	10	15	--	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
Copper, Total Recoverable	µg/L	21	--	40	--	--
Cyanide, Total (as CN) ²	µg/L	4.3	--	8.5	--	--
Dichlorobromomethane	µg/L	0.56	--	1.7	--	--
Chlorodibromomethane	µg/L	0.40	--	0.80	--	--
Ammonia Nitrogen, Total (as N)	mg/L	2.5	--	5.6	--	--
Chlorine, Total Residual ⁴	mg/L	0.01	--	0.02	--	--
Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	--	--

Table Notes:

1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.
2. 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.
3. The sum of bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.
4. See section VII.M of this Order regarding compliance with chlorine residual effluent limitations.

- b. **Percent Removal.** The average monthly percent removal of BOD₅ 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-001B, respectively.

- c. Disinfection.** Disinfected effluent discharged from the Facility through Discharge Point 001 to the Russian River shall not contain coliform bacteria exceeding the following concentrations, as measured at Monitoring Location EFF-001A:
 - i.** The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters (mL) using the bacteriological results of the last 7 days for which analyses have been completed¹;
 - 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.
- d. Acute Toxicity.** There shall be no acute toxicity in treated wastewater discharged to the Russian River. 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).

2. Interim Effluent Limitations – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

B. Land Discharge Specifications and Requirements

1. Final Discharge Specifications – Discharge Point 002

- a.** The discharge of treated wastewater shall maintain compliance with the following discharge specifications at Discharge Point 002, with compliance measured at Monitoring Location EFF-002 as described in the MRP (Attachment E). The secondary treated wastewater shall be adequately oxidized and disinfected as defined in title 22, division 4, chapter 3, of the CCR.

¹ See section VII.H of this Order regarding compliance with bacteriological limitations.

Table 5. Discharge Specifications – Discharge Point 002

Parameter	Units	Effluent Limitations ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	30	45	--	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids (TSS)	mg/L	30	45	--	--	--

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 002 to the percolation ponds shall not contain coliform bacteria exceeding the following concentrations, as measured at Monitoring Location EFF-002:
 - i.** The median concentration shall not exceed an MPN of 23 per 100 milliliters (mL) using the bacteriological results of the last 7 days for which analyses have been completed²; and
 - ii.** The number of coliform bacteria shall not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

C. Water Recycling Specifications and Requirements – Discharge Point 003

1. Water Recycling Specifications

- a.** When discharging to the recycled water system, the Permittee shall maintain compliance with the following limitations at Discharge Point 003, with compliance measured at Monitoring Location REC-001, as described in the attached MRP (Attachment E).

Table 6. Recycling Discharge Specifications – Discharge Point 003

Parameter	Units	Discharge Specifications ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
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.

² See section VII.H of this Order regarding compliance with bacteriological limitations.

- b. Disinfection.** Disinfected effluent discharged from the Facility through Discharge Point 003 to the recycled water system shall not contain total coliform bacteria exceeding the following concentrations, as measured 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 completed³;
 - ii.** The number of total 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 per 100 mL.

2. Water Recycling Requirements

- a.** This Order includes water recycling requirements that apply to the production of recycled water. The Permittee submitted an incomplete Notice of Intent (NOI) in January 2018 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 submit a complete NOI and obtain coverage under the Recycled Water General Order prior to initiating 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 – 60357 of the CCR (Water Recycling Criteria).

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 five (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. 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

³ See section VII.H of this Order regarding compliance with bacteriological limitations.

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 for Chlorine Disinfection System

a. Discharge Points 001 and 003

When discharging to the Russian River at Discharge Point 001 or the recycled water system at Discharge Point 003, treated effluent shall be disinfected in a manner that ensures effective pathogen reduction as described in the following specifications, with compliance measured at the end of the disinfection process at Monitoring Location EFF-001A:

- i. The chlorine disinfection process shall at all times provide a CT value⁴ of not less than 450 milligram-minutes per liter (mg-min/L).
- ii. Effluent not meeting the CT criteria shall be 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 disinfection process requirements as required by section IX.B.1.c of the MRP (Attachment E).

b. Discharge Point 002

As measured at the end of the secondary chlorine contact pipe at Monitoring Location EFF-002, the total residual chlorine concentration shall be maintained at a level that ensures the discharge meets the total coliform effluent limitations at the end of the disinfection process when discharging to the percolation ponds at Discharge Point 002.

- c. Total Residual Chlorine Analyzer Calibration.** The Permittee shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate and reliable operation.

- 3. Storage Ponds.** Ponds used for the storage of recycled water shall be constructed in a manner that protects groundwater. Prior to construction of any new wastewater storage ponds or use of any existing pond for storage of recycled water, 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 title 27 of the CCR and is protective of ground water quality. Pond design and operation plan must include features and best management practices (BMP's) 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

⁴ The CT value is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

measured at monitoring locations described in the MRP (Attachment E). The Regional Water Board may require an investigation 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 concentration of the receiving water to be depressed below 9.0 mg/L.

In those waterbodies for which the aquatic life-based DO requirements are unachievable due to natural conditions⁵, site-specific background DO requirements can be applied⁶ 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 natural receiving water temperature⁷. In no event may controllable factors reduce the daily minimum DO below 6.0 mg/L.

For the protection of estuarine habitat (EST), the dissolved oxygen concentration of enclosed bays and estuaries shall not be depressed to levels adversely affecting beneficial uses as a result of controllable water quality factors.

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 specific conductance (micromhos⁸) concentration of the receiving waters to increase above 250 micromhos more than 50 percent of the time, or above 320 micromhos more than 10 percent of the time. Compliance will be determined by evaluating the 50th percentile and 90th percentile of the monthly means of receiving water data each calendar year.
4. The discharge shall not cause the total dissolved solids concentration of the receiving waters to increase above 150 mg/L more than 50 percent of the time, or above 170 mg/L more than 10 percent of the time. Compliance will be determined by evaluating the 50th percentile and 90th percentile of the monthly means of receiving water data each calendar year.
5. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
6. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

⁵ 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.

⁶ Upon approval from the Regional Water Board Executive Officer

⁷ 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.

⁸ Measured at 77°F.

7. 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.
8. 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.
9. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.
10. The discharge shall not cause bottom deposits in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
11. 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.
12. 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. 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.
13. The discharge shall not cause a measurable temperature change in the receiving water at any time.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.

19. 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.

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 alterations of groundwater that contain chemical concentrations in excess of 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..
3. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause groundwater to contain radionuclides in concentrations that cause nuisance or adversely affect beneficial uses, 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.
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. In groundwaters used for domestic or municipal supply (MUN), 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 1 colony/100 mL.
6. 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. 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, except for copper for which a site-specific WER of 5.33 has been used as

further described in section IV.C.3 of the Fact Sheet. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. 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 ammonia and nitrate and effluent monitoring for nutrients (ammonia, nitrate, nitrite, organic nitrogen, and 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 Recycled Water Policy adopted by the State Water Board on February 3, 2009, and effective May 14, 2009, 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 for modifications to effluent limitations or receiving water monitoring locations if the Permittee demonstrates to the satisfaction of the Regional Water Board Executive Officer that it has evaluated all reasonable alternatives for compliance with human health-based effluent limitations for chlorine disinfection by-products and conducts a mixing zone study that provides a basis for determining that permit conditions should be modified.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Ammonia Study.** The Permittee shall conduct a study on its own or in collaboration with other dischargers to determine the presence of freshwater mussels in the receiving water or to calculate site-specific criteria to support implementation of the water quality criteria for ammonia in the April 2013 *Aquatic Life Ambient Water Quality for Ammonia – Freshwater 2013* (EPA-822-R-13-001). The Permittee may conduct literature searches of historical mussel surveys and/or conduct a site-specific mussel survey to evaluate the presence/absence of mussels in the receiving water. The study

shall be conducted in accordance with the August 2013 *Technical Support Document for Conducting and Reviewing Freshwater Mussel Occurrence Surveys for the Development of Site-Specific Water Quality Criteria for Ammonia* (EPA-800-R-13-003). The Permittee shall submit a work plan for conducting the study by **March 1, 2021**. The study shall be initiated within 3 years of the permit effective date and a final report summarizing the results of the study shall be submitted to the Regional Water Board in conjunction with the ROWD by **November 1, 2022**.

- b. Groundwater Characterization.** Upon completion of well installation, the Permittee shall conduct groundwater monitoring for each groundwater monitoring parameter/constituent identified in Tables E-9 in the MRP (Attachment E) of this Order, and shall conduct monitoring necessary to perform a complete characterization of all constituents present in the groundwater. After 2 years of monitoring the Permittee shall submit a groundwater quality characterization technical report **by May 1, 2022**, presenting, at a minimum, a summary of monitoring data, calculation of the concentration of each monitored parameter/constituent in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitoring the Facility for each monitored parameter/constituent. The technical report shall also identify any wastewater-specific constituents, in addition to those provided in the MRP (Attachment E) of this Order, that are present in the groundwater. Determinations presented in the technical report shall be made in accordance with requirements set forth in section VI.C.2.c and based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. The groundwater characterization shall also include an analysis of the hydrogeological interaction of groundwater beneath the Facility with surface water in the Russian River.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. The technical report shall be prepared by or under the direction of appropriately qualified professional(s) and shall bear the professional's signature and stamp.

- c. Antidegradation Reevaluation.** As part of an iterative evaluation of compliance with State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Anti-Degradation Policy), the Permittee shall submit an Antidegradation Reevaluation with its Report of Waste Discharge at least 180 days prior to the expiration date of this Order. The Antidegradation Reevaluation must use information obtained from groundwater, river, and seep monitoring in addition to results of discharge to the percolation ponds, to evaluate impacts of the percolation ponds on surface water and groundwater and of recycled water storage and use on groundwater.

If the data indicate that pollutants discharged to the percolation ponds can be traced to surface water or that exceedances of applicable groundwater water quality objectives or impacts to beneficial uses have occurred, the Permittee shall include a work plan (with an implementation schedule) to implement additional treatment or control

measures to further limit any impacts from the percolation ponds. Determination of background groundwater quality for use in the analysis shall be made using the methods described in title 27, section 20415(e)(10) of the CCR or other method approved by the Executive Officer.

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.** 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.** 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.

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 **November 1, 2019**.
- 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 scan⁹ 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 12-month period that begins on **January 1, 2020**.
 - (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 **June 1, 2021**. The written report shall include a certification report indicating whether the Facility receives pollutants from any IU that

⁹ 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.

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. **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 – Not Applicable**

Compliance schedules for ammonia, nitrate, chlorodibromomethane, and dichlorobromomethane are included in a time schedule order (TSO).

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 (Total Coliform)

- 1. Median.** 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.

2. 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.

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-001B.

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 shall constitute compliance with the chronic toxicity requirements, as specified in the MRP (Attachment E, sections V.B.8 and V.C).

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 3.01 mgd or less for the month with the lowest average monthly flow.

L. Peak Daily Wet Weather Flow

The peak daily wet weather flow is the maximum flow rate that occurs over a 24-hour period. Compliance with the peak daily wet weather flow prohibition for the Facility in section III.H of this Order will be determined daily by measuring the daily average flow at Monitoring Location INF-001. Compliance with the peak daily wet weather flow prohibition for the advanced wastewater treatment system in section III.H of this Order will be determined daily by measuring the daily average flow at Monitoring Location INT-001A. If the measured daily average flow exceeds 24.5 mgd at Monitoring Location INF-001 or 7.0 mgd at Monitoring Location INT-001A, the discharge is not in compliance with Prohibition III.H of this Order.

M. Chlorine Residual Effluent Limitations

1. Compliance with the chlorine residual effluent limitations in section IV.A.1.a, Table 4 shall be based on continuous chlorine residual monitoring at Monitoring Locations EFF-001B in order to demonstrate that the discharge has been adequately dechlorinated. Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the chlorine residual effluent limitations in section IV.A.1.a, Table 4. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or chlorine residual at or below the prescribed limit

are sufficient to show compliance with the total residual chlorine effluent limitation prescribed in section IV.A.1.a, Table 4, provided that the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

2. The Permittee shall calibrate continuous analyzers (e.g., chlorine residual, bisulfite residual) against grab samples as frequently as necessary to maintain accurate and reliable operation.
3. The Permittee shall report from discrete readings of the continuous monitoring every hour on the hour. Compliance shall be based on an average of these discrete hourly readings on a daily basis. The Permittee shall retain continuous monitoring readings for at least 3 years. The Regional Water Board retains the right to use all continuous monitoring data for discretionary enforcement.
4. Any excursion above the chlorine residual effluent limitations specified in section IV.A.1.a, Table 4, of this Order is a violation. If the Permittee conducts continuous monitoring and the Permittee can demonstrate through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Attachment D, section IV Standard Provisions.

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-Kärber. 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

Figure B-1. Facility Location Map

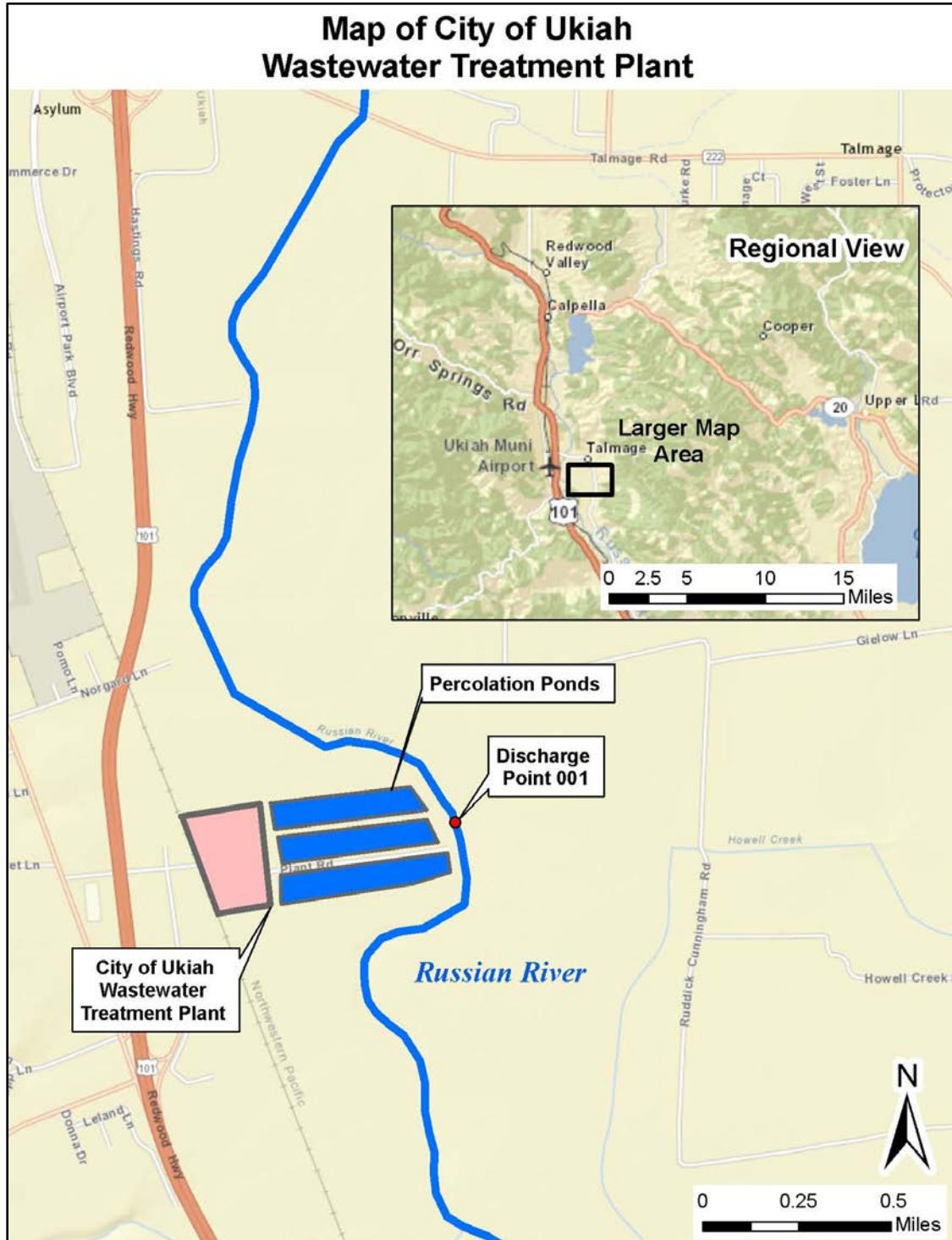
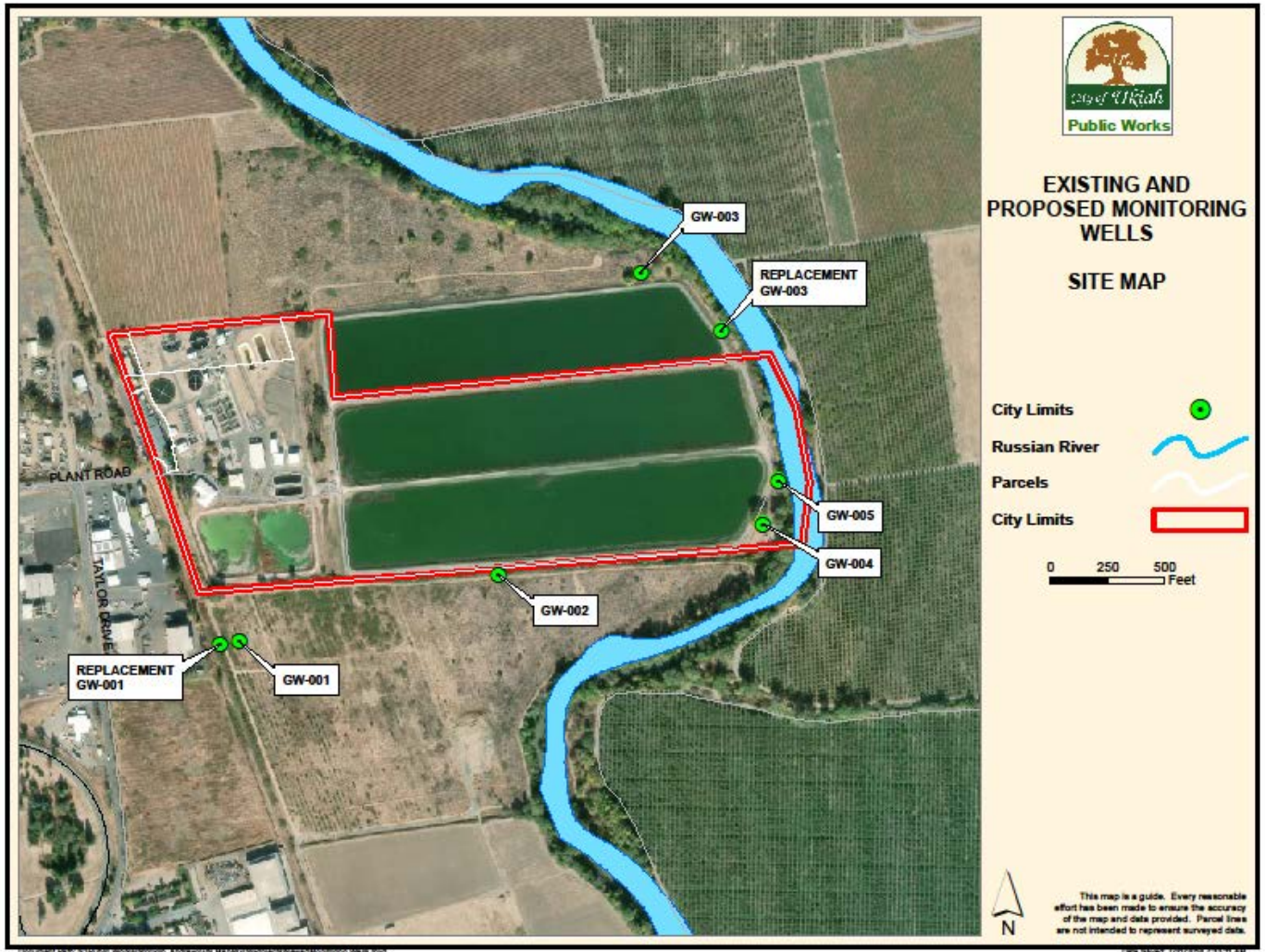
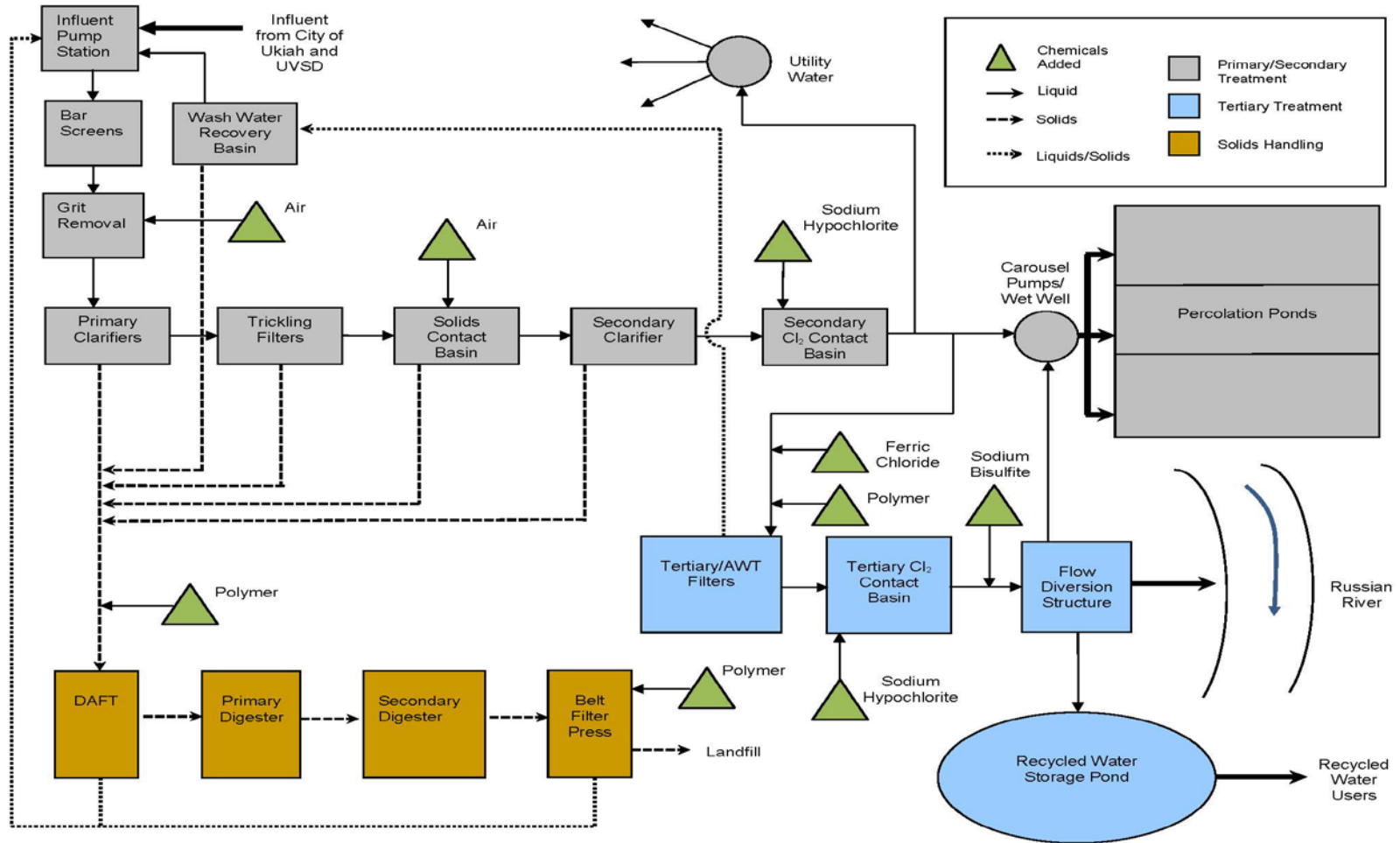


Figure B-2. Groundwater Monitoring Well Locations



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 seeking 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)

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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 approved by the Executive Officer 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 monthly and annual discharge monitoring reports.
- C. Laboratory Certification.** 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.
- 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.
001	INT-001A	Location for monitoring the flow and surface loading rate through the advanced wastewater treatment process filters.
001	INT-001B	Treated wastewater immediately following the advanced wastewater treatment process and prior to the chlorine contact basin.
001	EFF-001A ¹	A representative point immediately following advanced wastewater treatment disinfection but prior to dechlorination.
001	EFF-001B	Treated wastewater after advanced wastewater treatment disinfection but prior to discharge to the Russian River.
002	EFF-002	Treated wastewater after secondary disinfection but prior to discharge to the percolation ponds.
003	REC-001 ¹	Treated wastewater following advanced wastewater treatment disinfection but prior to discharge to the recycled water storage pond.
--	BIO-001	A representative sample of the sludge or biosolids generated when removed for disposal.
--	RSW-001	Upstream receiving water monitoring location in the Russian River, approximately 50 feet upstream of Discharge Point 001 and at a location that is not influenced by the discharge.
--	RSW-002	Downstream receiving water monitoring location in the Russian River, in an area influenced by Discharge Point 001. This monitoring location ranges between 50 and 200 feet downstream of the discharge outfall and depends on the river stage.
--	RSW-003	Russian River monitoring location, upstream of any potential influence of the percolation ponds.
--	RSW-004	Russian River monitoring location in the vicinity of the southern end of the Middle Percolation Pond and upstream of RSW-005.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-005	Russian River monitoring location, immediately downstream of the percolation ponds.
--	GW-001 ¹	Up-gradient shallow groundwater monitoring well (approximately 27 feet deep) located 600 feet southwest of the percolation ponds.
--	GW-002	Down-gradient shallow monitoring well (approximately 25 feet deep) located 150 feet south of the percolation ponds.
--	GW-003 ²	Up-gradient monitoring well currently located 150 feet north of the percolation ponds and to be relocated to new east of Percolation Pond 3.
--	GW-004	Shallow well (approximately 33 feet deep) at eastern berm of Percolation Pond 1 (between pond and the Russian River)
--	GW-005	Deeper well (approximately 140 feet deep) at eastern berm of Percolation Pond 1 (between pond and the Russian River)
--	SEEP-XXX	Monitoring location for seeps located along the bank of the Russian River. Seeps are to be numbered SEEP-001, SEEP-002, etc.

Table Notes:

1. EFF-001A and REC-001 are the same location, the sampling point immediately following the chlorine disinfection system. Different discharge point and monitoring location names have been assigned due to differences in monitoring requirements at Discharge Point 001 (for discharges to the Russian River) and 003 (for discharge to the recycled water system).
2. Existing GW-001 will be decommissioned when the recycled water storage pond is constructed. After construction, a new GW-001 well will be installed as close as possible to the current location in accordance with the May 2018, *City of Ukiah, Ukiah Wastewater Treatment Plant Groundwater Monitoring Plan*.
3. GW-003 is an old inactive agricultural well (>77 feet deep) that the Permittee has historically monitored. The Permittee plans to replace this well in accordance with the June 2018, *City of Ukiah, Ukiah Wastewater Treatment Plant Groundwater Monitoring Plan*.

III. 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 ¹
Influent Flow ²	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Weekly	Standard Methods
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly	Standard Methods
CTR and Title 22 Pollutants ³	µg/L	24-hr Composite ⁴	Once per permit term ⁵	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
<u>Table Notes:</u>				
1. In accordance with the current edition of <i>Standard Methods for Examination of Water and Wastewater</i> (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.				
2. The Permittee shall report the daily average and monthly average flows.				
3. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38 and 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.				
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. CTR priority pollutant sampling shall be completed no later than December 31, 2020 .				

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001A

The Permittee shall monitor advanced treated wastewater immediately following disinfection but prior to dechlorination at Monitoring Location EFF-001A during periods of discharge to the Russian River as follows:

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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Total Coliform Organisms	MPN/100 ml	Grab	Weekly	Standard Methods
Chlorine, Total Residual ²	mg/L	Grab	Continuous	Standard Methods
<u>Table Notes:</u>				
1. In accordance with the current edition of <i>Standard Methods for Examination of Water and Wastewater</i> (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.				
2. See additional chlorine residual monitoring and reporting requirements in Order section VII.M and MRP section IX.B.				

B. Monitoring Location EFF-001B

1. The Permittee shall monitor advanced treated wastewater when discharging to the Russian River at Monitoring Location EFF-001B, as follows:

Table E-4. Effluent Monitoring – Monitoring Location EFF-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Effluent Flow ²	mgd	Meter	Continuous	--
Discharge Dilution Rate	% of stream flow	Calculate	Daily	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Weekly ³	Standard Methods
	% Removal	Calculate	Weekly	--
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly ³	Standard Methods
	% Removal	Calculate	Weekly	--
pH	standard units	Grab	Daily ^{4,5}	Standard Methods
Total Coliform Bacteria	MPN/ 100 mL	Grab	Weekly ³	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Chlorine, Total Residual ⁶	mg/L	Meter	Continuous	Standard Methods
Bromoform	µg/L	Grab	Monthly	GC (ML 0.50 µg/L) GCMS (ML 2.0 µg/L) ⁷
Chlorodibromomethane	µg/L	Grab	Monthly ⁸	GC (ML 0.50 µg/L) ⁷
Chloroform	µg/L	Grab	Monthly	GC (ML 0.50 µg/L) GCMS (ML 2.0 µg/L) ⁷
Dichlorobromomethane	µg/L	Grab	Monthly ⁸	GC (ML 0.50 µg/L) ⁷
Total Trihalomethanes ⁹	µg/L	Calculate	Monthly ⁸	--
Copper, Total Recoverable	µg/L	Grab	Monthly ^{8,10}	GFAA (ML 5.0 µg/L) ICP (ML 10 µg/L) ICPMS (ML 0.50 µg/L) SPGFAA (ML 2.0 µg/L) ⁷
Cyanide, Total (as CN) ¹¹	µg/L	Grab	Monthly ⁸	Standard Methods
Ammonia Nitrogen, Total (as N) ¹²	mg/L	Grab	Weekly ^{3,5}	Standard Methods
Ammonia Nitrogen, Unionized (as N)	mg/L	Calculate	Weekly	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Weekly ³	Standard Methods
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Monthly ¹⁰	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Monthly	Standard Methods
Temperature	°F or °C	Grab	Daily ⁵	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly	Standard Methods
Aluminum	µg/L	Grab	¹³	Standard Methods
CTR Priority Pollutants ¹⁴	µg/L	24-hr Composite ¹⁵	Annually	Standard Methods
Acute Toxicity ¹⁶	% Survival, Pass or Fail, and % Effect	24-hr Composite	Annually	See Section V.A Below
Chronic Toxicity ¹⁶	Pass or Fail, and % Effect	24-hr Composite	Annually	See Section V.B Below

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
<p>Table Notes:</p> <ol style="list-style-type: none"> 1. In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136. 2. The Permittee shall report the daily average and monthly average flows. 3. 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. 4. Accelerated Monitoring (daily monitoring frequency). If a test result exceeds an effluent limitation, the Permittee shall increase 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. pH and temperature shall be measured at EFF-001 and RSW-001 concurrently with ammonia sampling at EFF-001. 6. Chlorine residual monitoring at Monitoring Location EFF-001B shall demonstrate that there is no detectable chlorine during periods of discharge to the Russian River and shall demonstrate compliance as further described in Compliance Determination section VII.M of this Order. All chlorine residual measurements shall be reported as total chlorine residual. 7. GC = Gas Chromatography GCMS = Gas Chromatography/Mass Spectrometry GFAA = Graphite Furnace Atomic Absorption ICP = Inductively Coupled Plasma ICPMS = Inductively Coupled Plasma/Mass Spectrometry SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption 8. 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. 9. The sum of bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane. 10. Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent sampling for copper. 11. 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. 12. Monitoring for ammonia shall be concurrent with acute whole effluent toxicity monitoring (section V.A.1 of this MRP). Effluent and receiving water temperature and pH shall be recorded at the time of the ammonia sample. 13. Aluminum monitoring is required if the Permittee is using any aluminum-containing chemicals in the wastewater treatment process. The Permittee's quarterly monitoring reports shall either certify that no aluminum-containing chemicals are in use, or include aluminum results. This certification or monitoring is necessary to demonstrate that the discharge does not contribute to the aluminum impairment in the Russian River. 14. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. Hardness shall be monitored concurrently with the priority pollutant sample. 15. 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. 16. Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements in section V of this MRP. 				

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 001, 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.
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_0) for the TST approach is: mean discharge IWC response $\leq 0.80 \times$ 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: $((\text{mean control response} - \text{mean discharge IWC response}) \div \text{mean control response}) \times 100$.
 - 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.

¹ The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-001B.

- 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 are 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 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 001, 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.²
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 species sensitivity screening shall be used for routine monitoring during the permit term.

² 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.

- 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 (H_0) for the TST approach is mean discharge IWC response $0.75 \times$ 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: $((\text{mean control response} - \text{mean discharge IWC response}) \div \text{mean control response}) \times 100$.
 - 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 are 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, 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 the 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.** The trigger for accelerated monitoring for chronic toxicity is exceeded 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.
9. **Reporting**
 - a. **Routine Reporting.** Chronic toxicity monitoring results shall be submitted with the quarterly SMR for the quarter in which chronic toxicity monitoring was performed. Routine reporting shall include the following in order to demonstrate compliance with requirements of this Order:
 - 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 No Observed Effect Concentration (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 TST 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:
$$\text{“Percent (\%) Effect” (or Effect, in \%)} = ((\text{Control mean response} - \text{IWC mean response}) \div \text{Control mean response}) \times 100$$
- (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 (\pm 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, dissolved oxygen, 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 to the Regional Water Board on May 7, 2007. **By September 1, 2019**, the Permittee's TRE Work Plan shall be reviewed for consistency with permit requirements and the Permittee's procedures, and updated as necessary in order to remain current and applicable to the discharge and requirements of this Order.

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 acute three-sample median minimum limitation (90 percent survival) or in the chronic test result in section V.B.8 (above) results in "Fail", the Permittee shall immediately initiate a TRE using EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989) 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 if monitoring finds there is no longer toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location EFF-002

1. The Permittee shall monitor secondary treated wastewater when discharging to the percolation ponds at Monitoring Location EFF-002, as follows:

Table E-5. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Effluent Flow ²	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Weekly ³	Standard Methods
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly ³	Standard Methods
pH	standard units	Grab	Daily ^{4,5}	Standard Methods
Total Coliform Organisms	MPN/100 mL	Grab	Weekly ³	Standard Methods
Chlorine, Total Residual ⁶	mg/L	Meter	Continuous	Standard Methods
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly ⁵	Standard Methods
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen, Total (as N)	mg/L	Grab	Monthly	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Monthly ⁵	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly ⁵	Standard Methods
Chloride	mg/L	Grab	Monthly ⁵	Standard Methods
Sodium	mg/L	Grab	Monthly ⁵	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Hardness, Total (as CaCO ₃)	mg/L	Grab	Annually ⁵	Standard Methods
Total Organic Carbon	mg/L	Grab	Annually ⁵	Standard Methods
Turbidity	NTU	Grab	Annually ⁵	Standard Methods
General Minerals ⁷	mg/L	Grab	Annually ⁵	Standard Methods
Carbamazepine	µg/L	Grab	Annually ⁵	Standard Methods

Table Notes:

1. In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. The Permittee shall report the daily average and monthly average flows.
3. 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.
4. Accelerated monitoring (daily monitoring frequency). 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. Each year between May 15 and May 21, the Permittee shall sample the effluent for these parameters concurrently with receiving water monitoring at Monitoring Locations RSW-003 and RSW-004 and groundwater monitoring.
6. The Permittee shall monitor continuously to demonstrate that the appropriate chlorine residual concentration to ensure compliance with coliform effluent limitations is maintained in the effluent at Monitoring Location EFF-002 at all times. At a minimum, the Permittee shall record readings of the continuous monitoring every hour and report the maximum recorded daily chlorine residual.
7. General minerals shall include alkalinity, bicarbonate (as CaCO₃ and HCO₃), calcium, carbonate (as CaCO₃ and CO₃), chloride, iron, magnesium, manganese, potassium, orthophosphate, sodium, and sulfate.

VII. RECYCLING MONITORING REQUIREMENTS

The following requirements apply after the Permittee implements a recycled water system.

A. Recycled Water Monitoring Location REC-001

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

Table E-6. Recycled Water Monitoring – Monitoring Location REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Effluent Flow ²	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	Grab	Weekly	Standard Methods
pH	standard units	Grab	Weekly	Standard Methods
Total Suspended Solids (TSS)	mg/L	Grab	Weekly	Standard Methods
Total Coliform Bacteria	MPN/100 mL	Grab	Daily	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
<u>Table Notes:</u>				
1. In accordance with the current edition of <i>Standard Methods for Examination of Water and Wastewater</i> (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.				
2. The Permittee shall report the average daily and average monthly flows.				

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001 and RSW-002

- The Permittee shall monitor the Russian River at Monitoring Locations RSW-001 and RSW-002 during periods of discharge to the Russian River as follows:

Table E-7. Receiving Water Monitoring – Monitoring Locations RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Flow	mgd	Gauge ²	Daily	--
pH	standard units	Grab	Weekly ³	Standard Methods
Copper, Total Recoverable	µg/L	Grab	Monthly ⁴	Standard Methods
Cyanide, Total (as CN) ⁵	µg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Weekly ³	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Weekly	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Monthly ⁴	Standard Methods
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Monthly	Standard Methods
Temperature	°C	Grab	Weekly ^{3,6}	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly	Standard Methods
Turbidity	NTU	Grab	Weekly	Standard Methods
Phosphorus, Total as P	mg/L	Grab	Monthly	Standard Methods
<u>Table Notes:</u>				
1. In accordance with the current edition of <i>Standard Methods for Examination of Water and Wastewater</i> (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.				
2. The flow rate shall be determined using the flow at USGS Gauge No. 11462500.				
3. 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.				
4. Effluent and receiving water hardness samples shall be collected on the same day and at approximately the same time as effluent samples for copper.				
5. The Permittee may, at its option, analyze for cyanide 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.				
6. Receiving water monitoring for temperature shall occur concurrently with effluent monitoring at EFF-001B when discharges are occurring to the Russian River.				

B. Monitoring Locations RSW-003 through RSW-005

- The Permittee shall monitor the Russian River at Monitoring Locations RSW-003 through RSW-005 as follows:

Table E-8. Receiving Water Monitoring – Monitoring Locations RSW-003 through RSW-005⁶

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Specific Conductance @ 77°F	µmhos/cm	Grab	Monthly ² /Quarterly ^{3,4}	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly ² /Quarterly ^{3,4}	Standard Methods
pH	standard units	Grab	Quarterly ^{3,4}	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Quarterly ^{3,4}	Standard Methods
Chloride	mg/L	Grab	Quarterly ^{3,4}	Standard Methods
Sodium	mg/L	Grab	Quarterly ^{3,4}	Standard Methods
Oxidation Reduction Potential (ORP)	millivolts	Grab	Quarterly ³	Standard Methods
Dissolved Oxygen	mg/L		Quarterly ³	Standard Methods
Temperature	°C or °F	Grab	Quarterly ³	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Annually ⁴	Standard Methods
Total Organic Carbon	mg/L	Grab	Annually ⁴	Standard Methods
Turbidity	NTU	Grab	Annually ⁴	Standard Methods
General Minerals ⁵	mg/L	Grab	Annually ⁴	Standard Methods
Carbamazepine	µg/L	Grab	Annually ⁴	Standard Methods

Table Notes:

1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. Monthly sampling shall occur during periods that the Permittee is discharging to the Russian River at Discharge Point 001. The sampling shall occur concurrently with receiving water monitoring at RSW-001 and RSW-002.
3. Quarterly sampling shall occur in February, mid-May, July, and October. The mid-May sampling shall coincide with the annual sampling identified in Footnote 4 of this table.
4. Each year between May 15 and May 21, the Permittee shall sample the receiving water for these parameters concurrently with effluent monitoring at Monitoring Location EFF-002 and groundwater monitoring.
5. General minerals shall include alkalinity, bicarbonate (as CaCO₃ and HCO₃), calcium, carbonate (as CaCO₃ and CO₃), chloride, iron, magnesium, manganese, potassium, orthophosphate, sodium, and sulfate.
6. Monitoring requirements will be evaluated after the Permittee submits the Groundwater Characterization Technical Report required by Provision VI.C.2.b of the Order and appropriate modifications will be made to this MRP based on the results presented in the Technical Report.

C. Groundwater Monitoring to Assess Impacts of Percolation Pond Discharge

1. The Permittee shall install new groundwater monitoring wells identified in Table E-1 of this MRP in accordance with the June 2018, *Ukiah Wastewater Treatment Plan Groundwater Monitoring Plan*. Once installed, the new wells shall be added to the monitoring network and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.
2. The Permittee shall monitor groundwater to assess impacts from percolation pond disposal at Monitoring Locations GW-001, GW-002, GW-003, GW-004 and GW-005, and any new or replacement groundwater monitoring wells. All samples shall be collected using approved EPA methods and in accordance with the Permittee’s Groundwater QA/QC Plan. The groundwater monitoring program is as follows:

Table E-9. Groundwater Monitoring – Monitoring Locations GW-001 through GW-005⁶

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ¹
Surveyed Groundwater Level ²	feet	--	Quarterly ³	--
pH	standard units	Grab	Quarterly ³	Standard Methods
Chloride	mg/L	Grab	Quarterly ³	Standard Methods
Sodium	mg/L	Grab	Quarterly ³	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Quarterly ³	Standard Methods
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Quarterly ³	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Quarterly ³	Standard Methods
Total Dissolved Solids	mg/L	Grab	Quarterly ³	Standard Methods
Oxidation Reduction Potential (ORP)	millivolts	Grab	Quarterly ³	Standard Methods
Dissolved Oxygen	mg/L		Quarterly ³	Standard Methods
Temperature	°C or °F	Grab	Quarterly ³	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Annually ⁴	Standard Methods
Total Organic Carbon	mg/L	Grab	Annually ⁴	Standard Methods
Turbidity	NTU	Grab	Annually ⁴	Standard Methods
General Minerals ⁵	mg/L	Grab	Annually ⁴	Standard Methods
Carbamazepine	µg/L	Grab	Annually ⁴	Standard Methods

Table Notes:

1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.
3. Quarterly sampling shall occur in February, mid-May, July, and October. The mid-May sampling shall coincide with the annual sampling identified in Footnote 4 of this table.
4. Each year between May 15 and May 21, the Permittee shall sample the effluent for these parameters concurrently with effluent monitoring at Monitoring Location EFF-002 and receiving water monitoring at Monitoring Locations RSW-003 through RSW-005.
5. General minerals shall include alkalinity, bicarbonate (as CaCO₃ and HCO₃), calcium, carbonate (as CaCO₃ and CO₃), iron, magnesium, manganese, potassium, orthophosphate, and sulfate.
6. Monitoring requirements will be evaluated after the Permittee submits the Groundwater Characterization Technical Report required by Provision VI.C.2.b of the Order and appropriate modifications will be made to this MRP based on the results presented in the Technical Report.

3. On November 20, 2012, the Permittee submitted a Groundwater Monitoring Program Quality Assurance/Quality Control (QA/QC) Plan. The QA/QC Plan addresses specific procedures to be followed to ensure that groundwater sampling data is reliable and defensible and includes a procedure for testing an additional sample anytime there are detections of monitored pollutants above a specific threshold. The QA/QC Plan has been developed in accordance with acceptable QA/QC standards. The Permittee shall keep this Plan updated to reflect any changes in the Permittee’s groundwater monitoring program and procedures.

4. **Groundwater Monitoring Reports.** Groundwater monitoring data shall be maintained in a spreadsheet format that allows for analysis of the on-going data. The electronic spreadsheet shall be submitted with the groundwater monitoring reports.

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring

Filtration process monitoring shall demonstrate compliance with section IV.D.1 (Filtration Process Requirements) of the Order and applies to all treated wastewater flows at Discharge Points 001 and 003. 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 SMR's.

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.
- 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. 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).

B. Disinfection Process Monitoring for Chlorine Disinfection System

Disinfection process monitoring shall demonstrate compliance with section IV.D.2 (Disinfection Process Requirements for Chlorine Disinfection System) of this Order. Disinfection process monitoring at Monitoring Location EFF-001A shall apply to all treated wastewater flows through Discharge Points 001 and 003. The following disinfection process monitoring requirements must be implemented:

1. Disinfection Process Monitoring (Monitoring Location EFF-001A)

- a. Monitoring.** When discharging to Discharge Points 001 and 003, the chlorine residual of the effluent from the advanced wastewater treatment chlorine contact basin shall be monitored continuously at a point prior to dechlorination and recorded, and the modal contact time shall be determined at the same point.
- b. Compliance.** The chlorine disinfection CT (the product of total chlorine residual and modal contact time) shall not fall below 450 mg-min/L, with a modal contact time of at least 90 minutes.

Each day, the Permittee shall calculate the CT values for the following conditions:

- i.** Modal contact time under highest daily flow and corresponding chlorine residual.
- ii.** Modal contact time under lowest daily flow and corresponding chlorine residual.
- iii.** Lowest chlorine residual and corresponding modal contact time.
- iv.** Highest chlorine residual and corresponding modal contact time.

The lowest calculated CT value under the aforementioned conditions shall be reported as the daily CT value on the quarterly SMR.

- c. Reporting.** If the chlorine disinfection CT is less than 450 mg-min/L or if the chlorination equipment fails, the event shall be reported in the quarterly SMR and the incident shall be reported to the Regional Water Board and DDW by telephone within 24 hours in accordance with Special 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. The report shall describe the measures taken to bring the discharge into compliance. Upon discovery of any equipment failure or failure to achieve 450 mg-min/L after disinfection, inadequately treated and disinfected wastewater shall be diverted to a storage basin or an upstream process for adequate treatment.

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

- 1.** Visual observations of the discharge (Monitoring Location EFF-001B) 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. Seep Monitoring (SEEP-001, etc.)

1. Visual monitoring for groundwater seeps along the banks of the receiving water directly east of the Facility shall be conducted weekly following any ripping work performed on the percolation ponds. Weekly visual monitoring for groundwater seeps may be discontinued 2 months following the date on which the percolation pond maintenance was performed. If groundwater seeps are observed, the location and approximate flow rate shall be reported in the quarterly SMR.
2. The Permittee shall monitor any observed groundwater seeps at Monitoring Location SEEP-001, SEEP-002, etc. as follows:

Table E-10. Seep Monitoring – Monitoring Location SEEP-001, SEEP-002, etc.¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ²
pH	standard units	Grab	Annually	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Annually	Standard Methods
Chloride	mg/L	Grab	Annually	Standard Methods
Sodium	mg/L	Grab	Annually	Standard Methods
Specific Conductance @ 77°F	µmhos/cm	Grab	Annually	Standard Methods
Total Dissolved Solids	mg/L	Grab	Annually	Standard Methods
Oxidation Reduction Potential (ORP)	millivolts	Grab	Quarterly ³	Standard Methods
Dissolved Oxygen	mg/L	Grab	Quarterly ³	Standard Methods
Temperature	°C or °F	Grab	Quarterly ³	Standard Methods
Hardness, Total (as CaCO ₃)	mg/L	Grab	Annually	Standard Methods
Total Organic Carbon	mg/L	Grab	Annually	Standard Methods
Turbidity	NTU	Grab	Annually	Standard Methods
General Minerals ⁴	mg/L	Grab	Annually	Standard Methods
Carbamazepine	µg/L	Grab	Annually	Standard Methods

Table Notes:

1. If the seep flow is lower than practicable for sample collection, only bottles that can be filled within one hour will be filled and analyzed. If the full volume for all analyses cannot be collected, analyte priorities will be discussed with Regional Water Board staff prior to analysis. A description of the sampling event, flow limitations, and selected analytes will be described in the quarterly self-monitoring report.
2. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
3. Quarterly sampling shall occur in February, mid-May, July, and October.
4. General minerals shall include alkalinity, bicarbonate (as CaCO₃ and HCO₃), calcium, carbonate (as CaCO₃ and CO₃), chloride, iron, magnesium, manganese, potassium, orthophosphate, sodium, and sulfate.

E. Sludge Monitoring (Monitoring Location BIO-001)

1. Sludge sampling shall be conducted according to the requirements specified by the location and type of disposal activities undertaken.
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. 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-11. Monitoring Periods and Reporting Schedule¹

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	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)
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)

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
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	Closes 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 quarter (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 (with annual report)
Once per permit term	Permit effective date	All	As stated in MRP tables or by November 1, 2022
<p><u>Table Notes:</u></p> <p>1. Quarterly reporting periods are as follows: January 1 through March 31; April 1 through June 30; July 1 through September 30; and October 1 through December 31.</p>			

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 (\pm 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>).

The Permittee shall also submit all groundwater monitoring data to the State Water Board's Geographic Environmental Information Management System database (GeoTracker) at

http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml.

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 http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

D. Other Reports

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

Table E-12. Reporting Requirements for Special Provisions Reports

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.a	Ammonia Study Work Plan	March 1, 2021
Special Provision VI.C.2.a	Ammonia Study Final Report	November 1, 2022
Special Provision VI.C.2.c	Groundwater Quality Characterization Technical Report	May 1, 2022
Special Provision VI.C.2.d	Antidegradation Reevaluation	November 1, 2022
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 IV.C.5.b.i	Source Control Program Technical Report	November 1, 2019
Special Provision VI.C.5.b.i	Source Control and Pretreatment Provisions, Annual Report	March 1 , annually
Special Provision VI.C.5.b.i.(c)	Source Control and Pretreatment Provisions, Industrial Waste Survey and Priority Pollutant Monitoring Results ¹	June 1, 2021
Special Provision VI.C.5.b.ii(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.ii(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
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.
MRP Effluent Monitoring Requirement V.B.9.b	TRE/TIE Results	Within 60 days of completion of TRE/TIE analyses

Order Section	Special Provision Requirement	Reporting Requirements
MRP Effluent Monitoring Requirement V.C.1	TRE Work Plan review and update (as necessary)	September 1, 2019
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.C.3	Groundwater Monitoring Program QA/QC Plan review and update	As necessary
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
<p>Table Notes:</p> <p>1. The IWS and priority pollutant monitoring is required during the 12-month period that begins on January 1, 2020.</p>		

2. **Annual Report.** 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 a paper copy of the annual report is required, the Permittee shall submit the report to the email address in section X.B.6.c., above. The report shall be submitted by March 1st of the following year. 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. **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 1st of each 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.
- g. 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 date and locations where biosolids were applied, the Regional Water Board's WDRs Order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, 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. 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.
- h. **Storm Water Reporting.** The Permittee shall submit, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the Permittee's best management practices (BMPs) to control the run-on of storm water to the Facility site, as well as activities to maintain and upgrade these BMPs.
- 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 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.

E. Spill 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 Board³ 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;

³ 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.

- 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.
- 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 Water⁴**
 - 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.

⁴ 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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ATTACHMENT F – FACT SHEET

As described in 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	1B84029OMEN
Permittee	City of Ukiah
Name of Facility	City of Ukiah Wastewater Treatment Plant
Facility Address	300 Plant Road
	Ukiah, CA 95482
	Mendocino County
Facility Contact, Title and Phone	Sean White, Director of Water and Sewer, (707) 467-5712
Authorized Person to Sign and Submit Reports	Sean White, Director of Water and Sewer, (707) 467-5712
Mailing Address	300 Seminary Avenue, Ukiah, CA 95482
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	Secondary Wastewater Treatment: 3.01 million gallons per day (mgd) (average dry weather flow) 24.5 mgd (peak wet weather flow) Advanced Wastewater Treatment: 7.0 mgd (peak wet weather flow)
Facility Design Flow	Secondary Wastewater Treatment: 3.01 mgd (average dry weather treatment capacity) 24.5 mgd (peak wet weather treatment capacity) Advanced Wastewater Treatment: 7.0 mgd (peak wet weather treatment capacity)
Watershed	Russian River Hydrologic Unit, Ukiah Hydrologic Subarea
Receiving Water	Russian River
Receiving Water Type	Inland surface water

- A.** The City of Ukiah (hereinafter Permittee) is the owner and operator of the Ukiah Wastewater Treatment Plant (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 3 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 the Russian River, a water of the United States. The Permittee was previously regulated by Order No. R1-2012-0068 and NPDES Permit No. CA0022888 adopted on August 23, 2012, and expired on September 30, 2017. 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 January 26, 2017, 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 December 29, 2016. The ROWD was deemed incomplete and additional information was requested on February 24, 2017. The Permittee resubmitted its ROWD on April 14, 2017. Supplemental information was submitted by the Permittee on March 26, 2018. The application was deemed complete on **April 5, 2018**.

II. FACILITY DESCRIPTION

The Permittee owns and operates a municipal wastewater treatment plant (WWTP) and associated collection system. The Facility serves the City of Ukiah and residential areas to the north and south of Ukiah, as well as east of the Russian River. The Facility treats wastewater from two entities, the City of Ukiah and the Ukiah Valley Sanitation District (UVSD). The Facility serves a population of approximately 21,059, including 16,059 within the City of Ukiah and 5,000 in the UVSD. The UVSD also serves Mendocino College, El Dorado Estates, Vichy Springs and areas contiguous to the City of Ukiah. The UVSD owns the collection system in its service area and the City of Ukiah maintains it. The City of Ukiah does not accept wastewater from any collection system not owned or maintained by the City.

A. Description of Wastewater and Biosolids Treatment and Controls

1. Collection System

The wastewater collection system in the City of Ukiah and UVSD consists of approximately 67 miles of pipelines that are 6-inches in diameter or larger. A trunk sewer that ranges in size from 15 to 42 inches in diameter extends northward from the Facility for a distance of 6 miles. The majority of the sewers are gravity collection lines. There are no bypass or overflow structures in the system.

Three lift stations from El Dorado Estates, Ford Street, and Vichy Springs discharge to force mains that cross under the Russian River. Each lift station has a bypass pipe around the pumps that allows the system to flow by gravity (via a siphoning effect), and prevent lift station overflows.

Leachate from the City of Ukiah's municipal landfill is discharged to the Facility. Leachate is clarified in a sedimentation basin at the landfill and subsequently stored in above-ground tanks prior to being pumped to the sewer line. The leachate is analyzed on a quarterly basis for pollutants of concern, including total dissolved solids, nutrients, biochemical oxygen demand (BOD₅), volatile organic compounds and petroleum hydrocarbons. Monitoring results demonstrate that the leachate does not contain any pollutants that could cause upset conditions at the Facility. Volumes of leachate discharged to the Facility vary from month to month and may be mixed with rainwater in the winter. Since 2012, the annual volume of leachate discharged from the landfill to the Facility ranged from 0.5 million gallons in 2014 to 2.5 million gallons in 2017. Leachate discharges occur primarily during wet weather months.

The flow from commercial and business facilities is approximately 28 percent of the total plant inflow. Commercial and business facilities served by the Facility include restaurants, hotels, car washes, automotive mechanics, car dealerships, hospitals, dental offices, photo processors, and other typical small city businesses. The remaining 72 percent of flow is considered residential flow. The Permittee had a large industrial user, Mendocino Brewing Company, which was required to pretreat its wastewater to lower the BOD₅ and total suspended solids (TSS) and monitor BOD₅ and TSS prior to discharging to the Facility. The brewery closed in 2017, but could reopen in the future. The Permittee does not accept flow from septage, chemical toilets, or other bulk waste sources.

2. Wastewater Treatment Facility

The Facility is designed to treat an average dry weather flow of 3.01 mgd and a peak wet weather flow of 24.5 mgd of secondary treated wastewater, as well as a peak wet weather flow of 7.0 mgd of advanced treated wastewater. The Facility's treatment train consists of an influent wet well, bar screens, aerated grit removal, primary clarifiers, trickling filters, aerated solids contact tank, secondary clarifiers, and a chlorine contactor pipe where secondary disinfection is performed using sodium hypochlorite. This disinfected secondary effluent is discharged to three percolation ponds year-round. During the period from October 1 through May 14, treatment continues with the addition of a ferric chloride polymer as the wastewater is sent to multi-media filters, a tertiary chlorine contact basin where disinfection is performed using sodium hypochlorite, and a dechlorination facility where dechlorination is performed using sodium bisulfite. The resulting disinfected, dechlorinated advanced treated wastewater effluent is discharged to the Russian River.

3. Biosolids Management

Biosolids generated during the treatment process are reduced through thickening in dissolved air flotation units followed by stabilization using anaerobic digesters (mesothermic). Digested sludge is dewatered using a belt-filter press. If the press is out of service, digested sludge is stored in a lagoon, then dredged to a solar drying bed in the dry season. Dried solids are hauled to a landfill for disposal as alternative daily cover.

B. Discharge Points and Receiving Waters

1. The Facility is located within the Ukiah Hydrologic Subarea within the Upper Russian River Hydrologic Unit.
2. During the wet weather season (October 1 – May 14), effluent treated in accordance with permit requirements in section IV.A of the Order is discharged from the Facility via an outfall pipe at Discharge Point 001 to the Russian River, a water of the United States, at a point latitude 39° 07' 07" N and longitude 123° 11' 28" W. The rate of discharge is governed by flow conditions in the Russian River, monitored near Hopland at United States Geological Survey (USGS) Gauge No. 11462500, and is limited to a rate not to exceed one percent of the flow of the Russian River. The Permittee preferentially discharges disinfected secondary treated effluent to its percolation ponds and utilizes its advanced wastewater treatment facilities and outfall as needed to balance flows.
3. The Facility has three percolation ponds located adjacent to the Russian River, with a combined storage capacity of 115 million gallons. The Permittee discharges disinfected secondary wastewater to the percolation ponds year-round. Percolation Pond 1 is 14.7 acres and has a design percolation rate of 50,000 gallons per day (gpd) per acre. Percolation Pond 2 is 14.7 acres and has a design percolation rate of 80,000 gpd per acre. Percolation Pond 3 is 12.4 acres and has a design percolation rate of 175,000 gpd per acre. These ponds are maintained to maximize percolation by alternately ripping the bottom of one pond each summer to increase permeability. The ponds' bottoms slope toward the Russian River.

The Permittee's water balance is dependent on having sufficient percolation pond capacity available at the beginning of each rainy season. In addition, the Permittee is limited to discharging up to one percent of the Russian River flow, and has stated that Russian River flows have decreased over the years, perhaps due to lower water releases from Lake Mendocino.

To improve the water balance, the Permittee plans to construct a recycled water system during the term of this Order to provide for beneficial reuse of its treated effluent and minimize discharges to the Russian River. See section II.E of this Fact Sheet for additional information regarding the proposed recycled water system.

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

Effluent limitations contained in Order No. R1-2012-0068 for discharges from Discharge Point 001 (previous Monitoring Location EFF-001B) and Discharge Point 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order No. R1-2012-0068 are as follows:

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

Parameter	Units	Effluent Limitation			Monitoring Data (October 2012 – December 2016)		
		Average Monthly	Average Weekly	Maximum 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	--	6.3	8.2	--
	lbs/day ¹	580	880	--	218	348	--
	% Removal	85	--	--	97.5 ²	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	3.2	6.5	--
	lbs/day ¹	580	880	--	71	126	--
	% Removal	85	--	--	99.2 ²	--	--
pH	standard units	--	--	6.5 – 8.5 ³	--	--	6.8 – 7.8
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	4.5	--	4.5
2,3,7,8-TCDD	pg/L	1.3	--	2.6	<0.96	--	<0.96
Copper, Total Recoverable	µg/L	35	--	70	41	--	42
Dichlorobromomethane	µg/L	0.56	--	1.1	9.93	--	9.93
Ammonia, Total (as N)	mg/L	3.5	--	6.8	10	--	12
Chlorine, Total Residual	mg/L	0.01	--	0.02	<0.01	--	<0.01
Nitrate, Total (as N)	mg/L	10	--	--	18	--	--
Total Coliform Organisms ⁴	MPN/100 mL	--	2.2 ⁵	23 ⁶ /240 ⁷	--	23	23
Acute Toxicity	% Survival	70 ⁸ /90 ⁹	--	--	95 ¹⁰	--	--

Table Notes:

1. Based on the peak wet weather design capacity of the advanced wastewater treatment filtration system of 7.0 mgd.
2. Represents the minimum observed percent removal.
3. Represents instantaneous minimum and instantaneous maximum effluent limits.
4. Compliance with effluent limits for total coliform organisms measured at previous Monitoring Location EFF-001A.
5. Expressed as a 7-day median.
6. 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.
7. No sample shall exceed an MPN of 240 coliform bacteria per 100 mL.
8. Minimum for one bioassay.
9. Median for any three or more consecutive bioassays.
10. Represents the minimum observed percent survival.

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

Parameter	Units	Effluent Limitation			Monitoring Data (October 2012 – December 2016)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	30	45	60	24	33	33
	% Removal	85	--	--	NR	--	--
pH	standard units	--	--	6.0 – 9.0 ¹	--	--	6.2 – 7.8
Total Suspended Solids (TSS)	mg/L	30	45	60	20	36	36
	% Removal	85	--	--	NR	--	--
Total Coliform Organisms	MPN/100 mL	--	23 ²	240 ³	--	540	540

NR=Not Reported
Table Notes:
 1. Represents instantaneous minimum and instantaneous maximum effluent limits.
 2. Expressed as a 7-day median.
 3. The number of coliform bacteria shall not exceed an MPN of 240 per 100 mL in more than one sample in any 30-day period.

D. Compliance Summary

On October 31, 2014, the Executive Officer issued Administrative Civil Liability (ACL) Complaint No. R1-2014-0058 for 17 violations of effluent limitations for acute toxicity, copper, cyanide, and dichlorobromomethane in Order Nos. R1-2006-0049 and R1-2012-0068. The ACL Complaint assessed a penalty of \$51,000 for these violations. On April 21, 2016, the Executive Officer issued a Settlement Agreement and Stipulation for Entry of ACL Order No. R1-2015-0069, which outlined six additional effluent violations that occurred since the end of the Complaint Period for ACL Complaint No. R1-2014-0058 and assessed \$63,000 in total penalties. The Permittee agreed to pay \$24,000 within 30 days of the issuance of Settlement Agreement and Stipulation for Entry of ACL Order No. R1-2015-0069 and the remaining \$39,000 was suspended pending completion of a Supplemental Environmental Project (SEP). The SEP consisted of a source control study of the Facility’s collection system to evaluate potential areas of high BOD₅.

On June 7, 2017, the Executive Officer issued ACL Complaint No. R1-2017-0030 for 40 violations of effluent limitations for ammonia, nitrate, dichlorobromomethane, and copper in Order No. R1-2012-0068. The ACL Complaint assessed a penalty of \$33,000 for these violations. On March 16, 2018, the Executive Officer issued a Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order No. R1-2018-0024 acknowledging that the Permittee will apply the entire penalty amount of \$33,000 towards the completion of a proposed SEP. The proposed SEP, which will be implemented by the San Francisco Estuary Institute (SFEI) on behalf of the Permittee, is a project to support the City’s Storm Water Resource Management and Habitat Protection and Restoration utilizing the San Francisco Estuary Institute’s (SFEI) GreenPlan-IT tool to support the development of a map of potential high priority green infrastructure project locations, and using the GreenPlan-IT’s Site Locator Tool to identify and rank potential urban low impact development (LID)/green infrastructure (GI) project locations

within the City of Ukiah based on the priorities set by a project workgroup of municipal separate storm water sewer system (MS4) managers, after which SFEI will use the RipZET tool to help the City identify stream restoration opportunities. Pending satisfactory completion of the SEP, the entire \$33,000 penalty will be suspended.

E. Planned Changes

The Permittee is constructing a recycled water system that will be completed during the term of this Order to provide recycled water for landscape irrigation, agricultural irrigation, and frost protection. The Permittee has received funding for the construction of Phases 1 through 3 of the recycled water system that began in Spring 2018 and is expected to be completed by Spring 2019. The Phase 1 to 3 projects include construction of new tertiary chlorine contact basins to increase the chlorination capacity; the installation of a recycled water fill station; the construction of a recycled water storage pond, pump station and transmission system; and a connection to 28 metered customers. The Permittee anticipates the implementation of Phases 1 through 3 of the recycled water system will reduce discharge to the Russian River by 60%. The Permittee also plans to seek additional funding for Phase 4 of its recycled water system, which is estimated to reduce discharge to the Russian River an additional 20%, resulting in a cumulative surface water discharge reduction of 80%.

This Order includes requirements that apply to the production of recycled water at the Facility. The Permittee submitted an incomplete notice of intent (NOI) and Title 22 Engineering Report in December 2016 to obtain coverage under State Water Resources Control Board (State Water Board) Order No. WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use (Recycled Water General Order). The Permittee submitted a revised NOI and Title 22 Engineering Report on January 4, 2018. The Permittee must resubmit the NOI and Title 22 Engineering Report with responses to comments from the State Board Division of Drinking Water (DDW) in a comment letter dated February 8, 2018, and from the Regional Water Board in an email dated February 20, 2018. Upon submittal of a complete NOI and Title 22 Engineering Report, the Regional Water Board Executive Officer will complete the Permittee's enrollment under the Recycled Water General Order.

In addition, the Permittee will need to complete testing of its upgraded tertiary chlorine disinfection system to demonstrate that it meets recycled water requirements in section 60301.230 of title 22 of the CCR before commencing discharges of recycled water to any recycled water use sites identified during the term of this Order.

No other modifications or operational changes that will cause a material change in the volume or quality of discharges from the Facility have been identified for the term of this Order.

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 waste discharge requirements for an existing facility that discharges treated wastewater to land through the use of percolation ponds for disposal, and as such, is also exempt from CEQA as an existing facility for which no expansion of design flow is being permitted pursuant to title 14, CCR, section 15301.

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. Beneficial uses applicable to the Russian River, within the Ukiah Hydrologic Subarea of the Upper 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)
001	Russian River within the Ukiah Hydrologic Subarea of the Upper Russian River Hydrologic Area	<p><u>Existing:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Groundwater recharge (GWR); Freshwater replenishment (FRSH); Navigation (NAV); Hydropower generation (POW); 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); and Spawning, reproduction, and/or early development (SPWN).</p> <p><u>Potential:</u> Industrial process supply (PRO); Shellfish Harvesting (SHELL), and Aquaculture (AQUA).</p>
002 and 003	Groundwater	<p><u>Existing:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); and Native American culture (CUL).</p> <p><u>Potential:</u> Industrial process supply (PRO); and Aquaculture (AQUA).</p>

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 does not include any compliance schedules or interim effluent limitations.

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. Some effluent limitations from the previous Order have been removed or are less stringent than those in the previous Order. As discussed in detail in section IV.D.1 of this

Fact Sheet, removal or relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- 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 June 26, 2015, the U.S. EPA provided final approval of the 2012 303(d) list of impaired water bodies for the North Coast Region prepared by the state. The list identifies the entire Russian River watershed as impaired by sedimentation/siltation and temperature, and the main stem Russian River within the Ukiah Hydrologic Subarea as impaired by aluminum. Pursuant to CWA section 303(d), the Regional Water Board will develop TMDLs to address the impairment for sediment, temperature, and aluminum, which will be implemented through various programs, including through provisions of NPDES permits.

Aspects of the sediment impairing the Russian River 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 the Russian River indicates levels of BOD₅, TSS, and total coliform bacteria 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. 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 the Russian River. This finding is also supported by the summer discharge prohibition, the one percent flow limitation for the winter discharge, and previous solids and

turbidity monitoring that has demonstrated that the Facility removes settleable solids and turbidity to negligible levels.

The discharge is not anticipated to contribute to impairments of the receiving water by 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. The MRP includes requirements for daily temperature monitoring of effluent discharged to the Russian River, and weekly temperature monitoring of the Russian River both upstream and downstream of Discharge Point 001 in order to monitor compliance with receiving water limitations.

Aluminum concentrations in the advanced treated effluent were not detectable based on one sample collected during the term of Order No. R1-2012-0068. The Permittee does not use any aluminum containing chemicals in its wastewater treatment process. Therefore, the discharge is not anticipated to contribute to aluminum impairments of the main stem of the Russian River within the Ukiah Hydrologic Subarea. The MRP requires the Permittee to monitor for aluminum only if the Permittee uses any aluminum-containing chemicals in its wastewater treatment process.

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. The Permittee is enrolled under the Industrial Storm Water General Permit. See section VI.B.6 of this Fact Sheet for additional discussion of the Permittee's storm water discharges.
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 requires the Permittee to obtain coverage under Order No. 2004-0012-DWQ prior to any removal of biosolids from the Facility that will be land disposed on property owned or controlled by the Permittee.
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 January 22, 2013, effective April 25, 2013) 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 an SNMP.

5. On January 4, 2018, the Permittee submitted an incomplete NOI to enroll under the Recycled Water General Order for the use of recycled water. The Permittee shall submit a complete NOI and obtain coverage under the Recycled Water General Order prior to initiating 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 chlorine disinfection requirements because these requirements apply to both recycled water and surface water discharges, as well as monitoring requirements for nitrogen (ammonia, nitrate, nitrite, and organic nitrogen) and salts (total dissolved solids and specific conductance).
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 February 11, 2015, with regard to its plans to decrease discharges to the Russian river upon completion of its recycled water system and received approval from the Division of Water Rights on August 31, 2015.

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. R1-2012-0068 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. R1-2012-0068 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. R1-2012-0068 with a minor modification. The term “reclamation” has been replaced with the term “recycling.” 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 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. R1-2012-0068 with a minor modification. A reference to groundwater has been removed because groundwater is captured in the broader term, “waters of the state.” 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. R1-2012-0068, with minor modifications. 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. R1-2012-0068. 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 dry weather flow of waste through the Facility shall not exceed 3.01 mgd, measured daily and averaged over a calendar month. The peak daily wet weather flow of waste through the Facility shall not exceed 24.5 mgd, measured daily. The peak daily wet weather flow through the advanced wastewater treatment system shall not exceed 7.0 mgd, measured daily. 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. R1-2012-0068 and is based on the average dry weather treatment capacity of the Facility. The peak daily wet weather flow prohibitions for the Facility and the advanced wastewater treatment system are newly established in this Order and are based on the peak wet weather treatment capacity of the Facility and the advanced wastewater treatment system. Exceedance of these capacities on a daily basis may result in effluent violations and/or the need to bypass 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. R1-2012-0068 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 October 1 through May 14, discharges of treated wastewater to the Russian River shall not exceed one percent of the flow of the Russian River, as measured near Hopland at USGS Gauge No. 11462500. 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, one percent of the most recent daily flow measurement of the Russian River near Hopland at USGS Gauge No. 11462500. 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 one percent of the total volume of the Russian River near Hopland at USGS Gauge No. 11462500 in the same calendar month. 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.

This prohibition has been retained from Order No. R1-2012-0068 and is required by the Basin Plan (chapter 4, North Coastal Basin Discharge Prohibition No. 4). The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow. Basin Plan Prohibition No. 4 does not specify how compliance with the one-percent flow requirement will be determined. This prohibition specifies that the discharge may comply with the one percent requirement as a monthly average for the surface water discharge season if a reading at USGS Gauge No. 11462500 is taken at least once daily, and the discharge flow rate shall not be set for greater than one percent of the flow of the river at the time of the daily reading.

- 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. R1-2012-0068 and is based on the discharge prohibitions contained in section 13375 of the Water Code.

- 12. Discharge Prohibition III.L.** The acceptance 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 is not accepted in the absence of a septage management program to ensure that pollutants associated with domestic septage do not pass through or interfere with the operation or 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 4 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

The pH shall be maintained within the limits of 6.0 to 9.0.

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 BOD₅, 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. Discharge Point 001 (Discharge to the Russian River)

- i. **BOD₅ 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 BOD₅, TSS, and pH. For the purpose of regulating municipal waste discharges from the Facility to the Russian River, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD₅ 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. R1-2012-0068.

- ii. **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. Note that a more stringent effluent limitation range of 6.5 – 8.5 for pH is required to meet the water quality objective for hydrogen ion concentration (pH) in the Russian River contained in Basin Plan, Table 3-1.
- iii. **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):

- (a) BOD₅ and TSS, because these two parameters are expressed in terms of concentration and percent removal; and
 - (b) pH, because this parameter cannot appropriately be expressed by mass.
- iv. **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. R1-2012-0068. These effluent limitations 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.

b. Discharge Point 002 (Discharge to Percolation Ponds)

- i. **BOD₅ and TSS.** 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 BOD₅, TSS, and pH. With the exception of maximum daily effluent limitations (MDELs), numeric effluent limitations for BOD₅ and TSS, including the percent removal requirements, are retained from Order No. R1-2012-0068 and reflect the secondary treatment standards at 40 C.F.R. part 133.

Order No. R1-2012-0068 included MDELs of 60 mg/L for BOD₅ and TSS based on BPJ. 40 C.F.R. section 125.3(a)(2) allows for establishment of technology-based effluent limitations based on BPJ for dischargers other than POTWs. For POTWs, 40 C.F.R. section 125.3(a)(1) and part 133 specify that technology-based effluent

limitations must be based upon secondary treatment or equivalent to secondary treatment standards. Since the Facility is a POTW, the establishment of technology-based effluent limitations for BOD₅ and TSS based on BPJ is not permissible under 40 C.F.R. section 125.3(a)(2). 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. The Regional Water Board does not find that these limitations, which are more stringent than the applicable technology-based requirements in 40 C.F.R. part 133, are necessary to achieve applicable water quality standards. Therefore, this Order does not retain the more stringent MDELS for BOD₅ and TSS from Order No. R1-2012-0068.

- ii. **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. This Order includes effluent limitations for pH consistent with the secondary treatment requirements established in 40 C.F.R. part 133.
- iii. **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 secondary 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. R1-2012-0068. These effluent limitations reflect standards for secondary treated recycled water as adopted by 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 Russian River 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, the Russian River, 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 water quality-based effluent limitations 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 State Implementation Policy (SIP) states that maximum daily effluent limitations shall be used for POTWs in place of average weekly effluent limitations for Water Quality Based Effluent Limitations. 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.

Effluent limitations that are based on state and federal drinking water MCLs (e.g., trihalomethanes and nitrate) are established as average monthly limits only, because the MCLs are based on long-term exposure.

The RPA for this Facility was conducted as follow.

a. Non-Priority Pollutants

- i. **pH.** The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2012-0068. 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. **Chlorine Residual.** The Basin Plan establishes a narrative water quality objective for toxicity which states “[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.” The Regional Water Board considers any chlorinated discharge as having the reasonable potential to cause or contribute to exceedances of this water quality objective for toxicity, and therefore this Order includes effluent limitations for chlorine. U.S. EPA has established the following criteria for chlorine-produced oxidants for protection of freshwater aquatic life in *Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5-86-001).

Chronic Criterion	Acute Criterion
0.011 mg/L	0.019 mg/L

Consistent with Order No. R1-2012-0068, the water quality criteria for total chlorine residual recommended by U.S. EPA have been translated to an AMEL of 0.01 mg/L and an MDEL of 0.02 mg/L in this Order.

- iii. 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. The Facility achieves varying levels of nitrification and denitrification throughout the year. Sampling data for ammonia and nitrate reveals an annual pattern of nitrification and denitrification, with lower concentrations during the winter, moderate concentrations during the summer, and higher concentrations during transition periods. 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 ammonia and nitrate are included in the Order to assure that the Permittee protects the beneficial uses of the receiving water and to prevent aquatic toxicity.

 - (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. The Permittee sampled its discharge at Monitoring Location EFF-001B monthly between October 2012 and December 2016. Monitoring results ranged from 0.24 mg/L to 18 mg/L based on 115 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 retained from Order No. R1-2012-0068.
 - (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.

Adequate information is not available to determine if these freshwater mussels are present in the receiving water. The 2013 Freshwater Criteria document states, “*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*” This Order includes a special study requirement in Special Provision VI.C.2.a requiring the Permittee to conduct a study to determine the presence of mussels in the receiving water. Until the study is completed, the Regional Water Board will implement the 2013 Freshwater Criteria with the assumed presence of salmonids and assumed absence of mussels to interpret the Basin Plan’s narrative toxicity objective.

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 8.0 and temperature of 16.4°C for the acute criterion and paired receiving water pH of 7.9 and temperature of 14.6°C for the chronic criterion at Monitoring Location RSW-001, the assumed presence of salmonids, and the assumed absence of mussels) to calculate U.S. EPA’s 2013 Freshwater Criteria, which result in acute and chronic criteria of 5.62 mg/L and 2.93 mg/L, respectively.

Effluent monitoring results ranged from non-detect (ND) to 12 mg/L based on 112 samples collected at Monitoring Location EFF-001B between October 2012 and December 2016. Upstream receiving water monitoring results ranged from ND to 1.8 mg/L based on 112 samples collected at Monitoring Location RSW-001 between October 2012 and December 2016.

Because ammonia levels in the effluent have been measured at concentrations greater than EPA’s 2013 Freshwater Criteria, 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 toxicity. Effluent limitations, consisting of an AMEL of 2.5 mg/L and an MDEL of 5.6 mg/L, have been established for ammonia.

- iv. **Biostimulatory Substances (Phosphorus and Nitrogen).** The Basin Plan contains a 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.” The Regional Water Board is increasingly concerned about the biostimulatory properties of discharges to surface waters in the North Coast Region. Nutrients, such as phosphorus and nitrogen containing compounds, in treated wastewater stimulate biological growth, thereby depleting dissolved oxygen and advancing eutrophication of receiving waters. At present, for interpretation of the Basin Plan’s narrative water quality objective for biostimulatory substances, U.S. EPA has established recommended water quality criteria for nutrients in *Nutrient Criteria Documents for Lakes and Rivers and Nutrient Criteria Documents for Rivers and Streams*. U.S. EPA has defined 14 “ecoregions” and further categorized surface waters as lakes and reservoirs or rivers and streams for purposes of defining applicable numeric water quality criteria for nutrients. The State and Regional Water Boards continue to examine other methods of interpreting the Basin Plan’s narrative water quality objective for biostimulatory substances. When the Boards determine that U.S. EPA’s recommended criteria are appropriate for implementing the Basin Plan objectives, or when a more appropriate and meaningful method is established, the need for limiting nutrients in relation to biostimulatory properties, including phosphorus and nitrogen-containing compounds, in all discharges in the Region will be reassessed. In the meantime, the RPA for nutrients in relation to biostimulatory properties, performed for development of this Order, is inconclusive. The Order retains monitoring requirements for phosphorus and nitrogen containing compounds in discharges from the Facility to allow a determination of reasonable potential at such time as the State and Regional Water Boards select an appropriate method for interpretation of the Basin Plan’s narrative objective.

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. R1-2012-0068, priority pollutant sampling was conducted on November 6, 2012, January 8, 2013, April 1, 2014, January 7, 2015, and January 13, 2016 at Monitoring Location EFF-001B. In addition, the Permittee conducted monthly monitoring for bis (2-ethylhexyl) phthalate (effluent only), bromoform (effluent only), chlorodibromomethane (effluent only), chloroform

(effluent only), copper (effluent and receiving water), cyanide (effluent and receiving water), and dichlorobromomethane (effluent only), and annual monitoring for 2,3,7,8-TCDD (effluent and receiving water). 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 51 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 copper, cyanide, dichlorobromomethane, and chlorodibromomethane 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 122 of the 126 priority pollutants.

Table F-5 summarizes the RPA for each pollutant that was 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-5. 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	0.17	Not Available	No
2	Arsenic	µg/L	10	0.49	Not Available	No
5a	Chromium (III)	µg/L	119	0.24	Not Available	No
6	Copper	µg/L	28 ⁴	42	14	Yes (Trigger 1)
7	Lead	µg/L	1.4	0.085	Not Available	No
8	Mercury	µg/L	0.05	0.00273	Not Available	No
9	Nickel	µg/L	30	2.5	Not Available	No
10	Selenium	µg/L	5.0	0.24	Not Available	No
13	Zinc	µg/L	68	63	Not Available	No
14	Cyanide	µg/L	5.2	4.5	5.3	Yes (Trigger 2)
16	2,3,7,8-TCDD	µg/L	1.3 x 10 ⁻⁸	<9.6 x 10 ⁻⁷	<9.7 x 10 ⁻⁷	No ⁵
23	Chlorodibromomethane	µg/L	0.41	4.31	Not Available	Yes (Trigger 1)
26	Chloroform	µg/L	No Criteria	66.3	Not Available	No
27	Dichlorobromomethane	µg/L	0.56	9.93	Not Available	Yes (Trigger 1)
Not Applicable	Total Trihalomethanes	µg/L	80	77.08 ⁶	Not Available	No
39	Toluene	µg/L	150	2.7	Not Available	No
Not Applicable	Barium	µg/L	1,000	31	Not Available	No
Not Applicable	Fluoride	mg/L	2.0	0.12	Not Available	No
Not Applicable	Specific Conductance	µmhos/cm	900	764	281	No
Not Applicable	Total Dissolved Solids	mg/L	500	440	410	No

CTR #	Pollutant	Unit	C or Most Stringent WQO/WQC	MEC or Minimum DL ¹	B or Minimum DL ^{1,2}	RPA Results ³
Not Applicable	Ammonia	mg/L	2.93 ⁷	12	1.8	Yes (Trigger 1)
Not Applicable	Nitrate (as N)	mg/L	10	18	1.3	Yes (Trigger 1)
Not Applicable	Nitrite (as N)	mg/L	1.0	0.21	Not Available	No

Table Notes:

- 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).
- The MEC or B is "Not Available" when there are no monitoring data for a constituent.
- 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).
- Copper WQO calculated with a water effects ratio (WER) of 5.33 and the most stringent WQO from the CTR using the lowest receiving water hardness of 51 mg/L ($5.33 \times 5.2 \mu\text{g/L} = 28 \mu\text{g/L}$).
- See discussion in the narrative portion of this section (section IV.C.3.c), immediately following this table.
- Represents the maximum observed TTHM concentration calculated by summing the results for bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane collected on the same date (March 18, 2015).
- Ammonia criteria are determined on a sliding scale based upon temperature and pH. The criterion represented in this table is based upon chronic exposure and a temperature of 14.6°C and a pH of 7.9.

Additional details regarding priority pollutant constituents for which reasonable potential was found are included in the following paragraphs:

Copper. Order No. R1-2012-0068 included effluent limitations for 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 5.33 for total recoverable copper applies to the discharge. Using the worst-case measured hardness from the receiving water (51 mg/L), the U.S. EPA recommended dissolved-total translator of 0.96, and the site-specific WER, the applicable chronic criterion (maximum 4-day average concentration) is adjusted to 28 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is adjusted to 40 µg/L.

The Permittee sampled the effluent and receiving water for copper 33 and 28 times, respectively, during the term of Order No. R1-2012-0068. Copper was detected in the effluent in all 33 effluent samples, with results ranging from 4.9 µg/L to 42 µg/L. Copper was also detected in all 28 receiving water samples, with results ranging from 1.6 µg/L to 14 µg/L. A determination of reasonable potential has been made based on the MEC of 42 µg/L exceeding the most stringent water quality objective of 28 µg/L.

Cyanide. Order No. R1-2012-0068 included effluent limitations for 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 32 and 28 times, respectively, during the term of Order No. R1-2012-0068. Cyanide was detected in 15 of the effluent samples, with results ranging from non-detect to 4.5 µg/L. Cyanide was detected in four of the receiving water samples, with results ranging from non-detect to 5.3 µg/L. A determination of reasonable potential has been made based on the maximum background concentration of 5.3 µg/L exceeding the most stringent water quality objective of 5.2 µg/L and cyanide being detected in the effluent. The Order gives the Permittee the option to 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.

Chlorodibromomethane. The CTR establishes a water quality objective for the protection of human health for chlorodibromomethane of 0.41 µg/L. The Permittee sampled the effluent for chlorodibromomethane 35 times during the term of Order No. R1-2012-0068. Chlorodibromomethane was detected in the effluent in five of these samples, with results ranging from non-detect to 4.3 µg/L. No receiving water samples were collected for chlorodibromomethane. A determination of reasonable potential has been made based on the MEC of 4.3 µg/L exceeding the most stringent water quality objective of 0.41 µg/L.

Dichlorobromomethane. Order No. R1-2012-0068 included effluent limitations for dichlorobromomethane. The CTR establishes a water quality objective for the protection of human health for dichlorobromomethane of 0.56 µg/L. The Permittee sampled the effluent for dichlorobromomethane 35 times during the term of Order No. R1-2012-0068. Dichlorobromomethane was detected in the effluent in 15 of these samples, with results ranging from non-detect to 9.9 µg/L. No receiving water samples were collected for dichlorobromomethane. A determination of reasonable potential has been made based on the MEC of 9.9 µg/L exceeding the most stringent water quality objective of 0.56 µg/L.

Additional details regarding priority pollutant constituents for which reasonable potential was not found but warrant further explanation are included in the following paragraphs:

2,3,7,8-TCDD. Order No. R1-2012-0068 included effluent limitations for 2,3,7,8-TCDD. The CTR establishes a water quality criterion for the protection of human health for 2,3,7,8-TCDD of 1.3×10^{-8} µg/L. 2,3,7,8-TCDD was not detected in the effluent based on six samples collected between October 2012 and December 2016. The lowest MDL for 2,3,7,8-TCDD in the effluent samples was 9.6×10^{-7} µg/L. 2,3,7,8-TCDD was not detected in the receiving water based on five samples collected between October 2012 and December 2016. The lowest MDL for 2,3,7,8-TCDD in the receiving water samples was 9.7×10^{-7} µg/L. The lowest MDLs for 2,3,7,8-TCDD in both the effluent and the receiving water were greater than the applicable water quality criterion. However, because there are no known potential sources of 2,3,7,8-TCDD in the Permittee's service area and all effluent monitoring results were ND, a determination of no reasonable potential has been made and effluent limitations for this parameter have not been retained.

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 (copper, cyanide, and ammonia), 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.

The SIP procedure assumes a 4-day averaging period for calculating the LTA. However, U.S. EPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA for ammonia corresponding to the 30-day CCC was calculated assuming a 30-day averaging period.

From Table 1 in the SIP, the ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for copper are 0.365 (acute multiplier) and 0.574 (chronic multiplier). The ECA multipliers for cyanide are 0.330 (acute multiplier) and 0.537 (chronic multiplier). The ECA multipliers for ammonia are 0.263 (acute multiplier), 0.458 (chronic 4-day multiplier), and 0.734 (chronic 30-day multiplier). The LTAs are determined as follows in Table F-6.

Table F-6. Determination of Long Term Averages

Pollutant	Units	ECA			ECA Multiplier			LTA		
		Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day
Copper, Total Recoverable	µg/L	40	28	--	0.365	0.574	--	14.6	16.1	--
Cyanide, Total (as CN)	µg/L	22	5.2	--	0.330	0.537	--	7.26	2.79	--
Ammonia (as N)	mg/L	5.62	7.32	2.93	0.263	0.458	0.734	1.48	3.35	2.15

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 0.51 for copper, 0.58 for cyanide, and 0.75 for ammonia. The sampling frequency is set equal to 4 (n = 4) for the acute criterion and chronic 4-day criterion, and 30 (n = 30) for the chronic 30-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 copper is 2.74 and the AMEL multiplier is 1.47. From Table 2 of the SIP, the MDEL multiplier for cyanide is 3.03 and the AMEL multiplier is 1.53. From Table 2 of the SIP, the MDEL multiplier for ammonia is 3.80 and the AMEL multiplier is 1.70. Final WQBELs for copper, cyanide and ammonia are determined as follows.

Table F-7. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	Unit	LTA	MDEL Multiplier	AMEL Multiplier	MDEL	AMEL
Copper, Total Recoverable	µg/L	14.6	2.74	1.47	40	21
Cyanide, Total (as CN)	µg/L	2.79	3.03	1.53	8.5	4.3
Ammonia (as N)	mg/L	1.48	3.80	1.70	5.6	2.5

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective (as for chlorodibromomethane, dichlorobromomethane, and nitrate), the AMEL is set equal to the ECA. From Table 2 of the SIP, when CV = 0.60 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 (for chlorodibromomethane). From Table 2 of the SIP, when CV = 1.8 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 7.87, and the AMEL multiplier at the 95th percentile occurrence probability equals 2.62 (for dichlorobromomethane). From Table 2 of the SIP, when CV = 0.48 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 2.61, and the AMEL multiplier at the 95th percentile occurrence probability equals 1.44 (for nitrate). The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier. Final WQBELs for chlorodibromomethane, dichlorobromomethane, and nitrate are determined as follows.

Table F-8. Determination of Final WQBELs Based on Human Health Criteria

Pollutant	ECA (µg/L)	MDEL/AMEL	MDEL (µg/L)	AMEL (µg/L)
Chlorodibromomethane	0.40	2.0	0.80	0.40
Dichlorobromomethane	0.56	3.0	1.7	0.56
Nitrate Nitrogen, Total (as N) ¹	10	1.8	18	10

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. R1-2012-0068, 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 table summarizes the chronic toxicity testing results from the term of Order No. R1-2012-0068.

Table F-9. Summary of Chronic Toxicity Results

Date	<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>		<i>Selenastrum capricornutum</i>
	Survival (TUC)	Reproduction (TUC)	Survival (TUC)	Growth (TUC)	Growth (TUC)
January 8, 2013	1	2	1	1	1
January 30, 2013	1	1.3	--	--	--
February 6, 2013	1	1.3	--	--	--
February 13, 2013	1	8	--	--	--
February 23, 2013	1	1	--	--	--
March 26, 2013	1	1	--	--	--
May 2, 2013	1	>8	--	--	--
May 8, 2013	1	>8	--	--	--
October 15, 2013	1	>8	--	--	--
April 8, 2014	--	--	1	1	1
April 21, 2014	1	>8	--	--	--
May 10, 2014	1	2	--	--	--
November 11, 2014	1	2	--	--	--
December 3, 2014	1	1	--	--	--
January 7, 2015	1	1	--	--	--
January 7, 2015	1	1	--	--	--
January 22, 2015	1	1	--	--	--
January 29, 2015	1	1	--	--	--
February 10, 2015	1	1	--	--	--
September 22, 2015	1	1	--	--	--
January 12, 2016	1	1	--	--	--
January 16, 2017	1	1	--	--	--
February 22, 2018	--	1	1	1	1

Chronic toxicity to *C. dubia* reproduction was observed on January 8, 2013, January 30, 2013, February 6, 2013, February 13, 2013, May 2, 2013, May 8, 2013, October 15, 2013, April 21, 2014, May 10, 2014, and November 11, 2014. The Permittee conducted a toxicity identification evaluation in March 2013 that lead to the general conclusion that the most likely pollutants causing the toxicity were either a metal or organic pollutant. In 2014, the Permittee submitted a toxicity reduction evaluation work plan and conducted a detailed TRE to identify the source of toxicity. The results of the TRE were submitted in a May 2015 report prepared by Pacific Ecorisk titled *Toxicity Reduction Evaluation of the Chronic Toxicity of the City of Ukiah Wastewater Treatment Plant Effluent to Ceriodaphnia dubia: Final Report*. On the basis of multiple lines of evidence, the TRE concluded that periodic overdosing of the polymer used in the advanced wastewater treatment process was the cause of the observed toxicity to *C. dubia*. In response to this finding, the Permittee’s toxicity laboratory conducted additional tests to determine the polymer dose that could not be exceeded. Since the Permittee began implementing the recommendation to moderate its use of the polymer (which the Permittee began even before the TRE report was final), the Permittee’s chronic toxicity tests for *C. dubia* reproduction have all demonstrated no toxicity. Due to the Permittee’s demonstration of no toxicity since implementing the changes in December 2014, the Regional Water Board concludes that the discharge has no

reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, this Order does not establish 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 Toxicity Reduction Evaluation (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 annual chronic WET testing at Discharge Point 001, 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. R1-2012-0068 established a numeric chronic toxicity trigger of $1.0 \text{ TUC} = 100/\text{NOEC}$, 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) \leq 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 001 is 100%. The chronic toxicity trigger for Discharge Point 001 is expressed as a null hypothesis (H_0) 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) \leq 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. R1-2012-0068, with the exception of mass-based effluent limitations for BOD₅ and TSS and effluent limitations for 2,3,7,8-TCDD at Discharge Point 001 and MDELS for BOD₅ and TSS at Discharge Point 002.

Order No. R1-2012-0068 established final mass-based effluent limitations for BOD₅ and TSS at Discharge Point 001. Historically, the Regional Water Board routinely incorporated mass-based limits (in addition to concentration-based limits) for BOD₅ and TSS in NPDES permits to encourage correction of inflow and infiltration (I&I). Applied in this way, mass-based limitations effectively restrict a POTW's wet weather influent flows to less than or equal to the Facility's design capacity in situations where POTWs experience excessive I&I as a result of climate conditions and/or aging infrastructure. The application of mass-based effluent limitations for BOD₅ and TSS is not necessary to limit wet weather inflow to the Facility because the Order includes flow limitations (Discharge Prohibition III.H) that require the Permittee to control influent flow to stay below the design capacity of the Facility, and because the Permittee has recognized sources of I&I and is in the process of improving its collection system in order to limit I&I impacts. The Permittee has completed camera surveys of the entire collection system and is planning to reduce I&I by replacing failed mains and laterals in high priority areas within the next fiscal year. In addition, the voters of Ukiah recently approved a road improvement sales tax (Measure Y), which is anticipated to result in the improvement of underlying utilities as well.

Mass limitations for BOD₅ and TSS for discharges of treated wastewater have been removed because Regional Water Board staff misinterpreted the exception of 40 C.F.R. section 122.45(f)(2), which states that mass limitations are not required "*when applicable standards and limitations are expressed in terms of other units of measure.*" Secondary treatment standards for BOD₅ and TSS in 40 C.F.R. section 133.102, on which the effluent limitations in previous permits were based, are expressed in terms of concentration and percent removal (i.e., other units of measure). The relaxation of effluent limitations for BOD₅ and TSS in this Order is permissible under CWA section 402(o)(2)(B)(ii), because Regional Water Board staff has determined that mass-based limitations for BOD₅ and TSS were applied in the previous permits as a result of a mistaken interpretation of law when issuing those previous permits.

In addition, Regional Water Board staff previously held that anti-backsliding regulations prevented the removal of mass-based limitations for BOD₅ and TSS because they were appropriate and necessary to protect water quality and prevent water quality degradation in receiving waters. While it is conceivable that the absence of mass-based limitations for

these pollutants may result in an increased pollutant loading to surface waters, recent self-monitoring reports indicate that compliance with concentration-based effluent limitations for BOD₅ and TSS effectively maintain the Permittee's mass emission rates for BOD₅ and TSS well below permitted mass-based limitations. In addition, even if there is a resulting increase in pollutant loading, there is no evidence that the increase will result in degradation of water quality. Therefore, relaxation of effluent limitations for BOD₅ and TSS in this Order is also permissible under CWA section 402(o)(2)(B)(i), based on new information available to the Regional Water Board.

Order No. R1-2012-0068 included effluent limitations for 2,3,7,8-TCDD at Discharge Point 001 based on the CTR human health criteria. As explained in section IV.C.3.c of this Fact Sheet, although the MDLs utilized to sample for 2,3,7,8-TCDD are greater than the applicable criteria, there are no known potential sources of 2,3,7,8-TCDD in the Permittee's service area. The lack of potential sources of 2,3,7,8-TCDD, in combination with the updated effluent data indicating all samples as ND, constitutes new information that permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). Therefore, this Order does not retain effluent limitations for 2,3,7,8-TCDD.

Order No. R1-2012-0068 included MDELs for BOD₅ and TSS for discharges at Discharge Point 002. These effluent limitations were retained from previous Order No. R1-2006-0049 based on BPJ. 40 C.F.R. section 125.3(a)(2) allows for the establishment of technology-based effluent limitations based on BPJ for dischargers other than POTWs. For POTWs, 40 C.F.R. section 125.3(a)(1) and part 133 specify that technology-based effluent limitations must be based upon secondary treatment or equivalent to secondary treatment standards. The secondary treatment standards require an AMEL and AWEL for BOD₅ and TSS. Since the Facility is a POTW, the establishment of a more stringent technology-based MDEL for BOD₅ and TSS based on BPJ is not permissible under 40 C.F.R. section 125.3(a)(2). 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. The Regional Water Board does not find that these limitations, which are more stringent than the applicable technology-based requirements in 40 C.F.R. part 133, are necessary to achieve applicable water quality standards. Therefore, this Order does not retain the more stringent MDELs for BOD₅ and TSS from Order No. R1-2012-0068. The removal of MDELs for BOD₅ and TSS is permissible under CWA section 402(o)(2)(B)(ii) because Regional Water Board staff has determined that the technology-based MDELs for BOD₅ and TSS were applied in the previous permit as a result of a mistaken interpretation of law when issuing the previous permit.

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. R1-2012-0068.

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, 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 ammonia, nitrate, pH, chlorine residual, copper, cyanide, dichlorobromomethane, and chlorodibromomethane 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 – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

F. Land Discharge Specifications and Requirements

This Order authorizes discharges to land using percolation ponds. 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 groundwater and comply with applicable provisions of the Basin Plan.

Implementation of this Order will result in the best practicable treatment or control of the discharge and lead to a net benefit to water quality by improving and monitoring existing conditions related to the land disposal of treated wastewater effluent through the use of percolation ponds. The Order is designed to protect beneficial uses and does not promote or authorize discharges that exceed water quality standards or result in the permanent lowering of high quality waters. The beneficial uses of the underlying groundwater are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and aquaculture, and Native American cultural uses. This Order contains discharge prohibitions, discharge specifications, and groundwater limitations that are expected to maintain or improve water quality by addressing nutrients, salts, bacteria, and other pollutants in the waste stream.

The discharge of treated effluent to land may result in degradation of groundwater, primarily due to salts and nitrogen. Groundwater monitoring is required by this Order to determine if the land disposal of treated effluent is impacting groundwater or resulting in the exceedance of applicable water quality objectives.

Degradation of groundwater by constituents in treated effluent (primarily salts and nitrogen) may be permitted where it has been demonstrated 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 such water, and will not result in water quality less than that prescribed in the Basin Plan. In addition, it must be demonstrated that discharges to high quality waters meet waste discharge requirements that result in the best practicable treatment or control of the discharge necessary to avoid pollution or nuisance and assure that the highest water quality consistent with the maximum benefit to the people of the state is maintained.

G. Water Recycling Specifications and Requirements

Water Recycling Specifications and Requirements are contained in section IV.C of the Order. The Permittee has submitted an NOI for coverage 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 proposed upgrades to 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 BOD₅, 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 Russian River within the Ukiah Hydrologic Subarea of the Upper 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 – 60357 of the CCR (Water Recycling Criteria). The Permittee has submitted an NOI for coverage under the Recycled Water General Order and will obtain coverage prior to delivering recycled water. As such, this Order does not include use area requirements, rather only contains requirements for discharges of recycled water.

- a. BOD₅ and TSS.** This Order includes discharge specifications for BOD₅ 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.** 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.** 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.

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.

In addition, the Recycled Water General Order addresses antidegradation for the storage and use of recycled water and the Permittee's enrollment under the Recycled Water General Order requires groundwater monitoring in a recycled water use area to verify that the use of recycled water does not adversely impact groundwater. The recycled water storage pond

has been designed with a synthetic liner to ensure that recycled water does not leak to groundwater.

H. Other Requirements

This Order contains additional specifications that apply to the Facility including:

1. Filtration Process Requirements

- a. **Filtration Rate.** For discharges at Discharge Points 001 and 003, 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.
- b. **Turbidity.** For discharges at Discharge Points 001 and 003, section IV.D.1.b of 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 advanced wastewater treatment process and prior to the chlorine contact basin.

2. Disinfection Process Requirements for Chlorine Disinfection System

- a. **Chlorine Disinfection Contact Time (CT).** For discharges at Discharge Points 001 and 003, chlorine disinfection process requirements for CT are necessary to determine compliance with requirements for recycled wastewater systems established at title 22, division 4, chapter 3 of the CCR and to ensure that the advanced wastewater treatment disinfection process achieves effective pathogen reduction.
- b. **Residual Chlorine.** For discharges at Discharge Point 002, this Order requires the Permittee to maintain a chlorine residual concentration that ensures the discharge meets the total coliform effluent limitations at the end of the disinfection process so that adequate pathogen reduction is continuously achieved prior to discharge to the percolation ponds.

3. **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.

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, bacteria, 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 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 COLD and SPWN beneficial uses occur in the Salt River and its tributaries. 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.

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. 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 ammonia and effluent monitoring for nutrients (ammonia, nitrate, nitrite, organic nitrogen, and 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.** This provision allows the Regional Water Board to reopen this Order if the Permittee demonstrates to the satisfaction of the Regional Water Board Executive Officer that it has evaluated all reasonable alternatives for compliance with human health-based effluent limitations for chlorine disinfection by-products and conducts a mixing zone study that provides a basis for determining that permit conditions (i.e., effluent limitations and/or receiving water monitoring locations) should be considered for modification.

2. Special Studies and Additional Monitoring Requirements

- a. Ammonia Study (Special Provision VI.C.2.a).** The 2013 Freshwater Criteria for ammonia vary based on pH and temperature, and reflect the latest scientific knowledge on the toxicity of ammonia to freshwater aquatic life, including new data on sensitive freshwater mussels and gill-breathing snails. Under most conditions, the 2013 Freshwater Criteria are more stringent than the 1999 Freshwater Criteria when mussels are present in the receiving water. Adequate information is not available to determine if these freshwater mussels are present in the receiving water. The 2013 Freshwater Criteria document states, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*" The 2013 Freshwater Criteria document

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.i, 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.
- 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 is required to obtain 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. **Storm Water (Special Provision VI.C.6.a).** The Permittee has storm water discharges associated with industrial activities, category “ix” as defined in 40 C.F.R. section 122.26(b)(14). This provision requires the Permittee to obtain coverage under the Industrial Storm Water General Permit (or subsequent renewed versions of the NPDES General Permit CAS000001). The Permittee is currently enrolled under the Industrial Storm Water General Permit and continues to implement a Storm Water Pollution Prevention Plan (SWPPP), which describes its storm water discharges, pollution prevention practices, and best management practices.

Storm water that falls northeast of the treatment process area is captured in a basin before it is discharged to surface waters. Storm water that collects in areas around the treatment process is routed to the sludge drying bed (located east of the treatment process area) and returned to the treatment process. Storm water that collects in the remaining part of the Facility is routed to one of two retention basins before it is discharged to surface waters.

7. Compliance Schedules – Not Applicable

This Order does not establish interim effluent limitations or schedules of compliance for final numeric effluent limitations. Compliance schedules for ammonia, nitrate, chlorodibromomethane, and dichlorobromomethane will be included in a time schedule order (TSO).

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. R1-2012-0068 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. R1-2012-0068 and are necessary to determine compliance with Discharge Prohibition III.H.
- 3. This Order retains influent monitoring for CTR priority pollutants and adds monitoring for title 22 pollutants once during the permit term to evaluate the contribution of industrial dischargers in the influent to the Facility.

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-001A, EFF-001B, 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-001A

- a.** This Order retains monitoring requirements for total coliform and chlorine residual at Monitoring Location EFF-001A in order to determine compliance with the disinfection requirements in sections IV.A.1.c and IV.D.2.a of this Order.
- b.** This Order includes new monitoring requirements at EFF-001A, for monitoring necessary to demonstrate compliance with new disinfection requirements in section IV.D.2.a of this Order.
- c.** EFF-001A and REC-001 are the same monitoring location, but have different monitoring location numbers because the requirements apply to different discharges that have some different monitoring requirements. EFF-001 applies to surface water discharges and REC-001 applies to discharges to the recycled water system.

2. Monitoring Location EFF-001B

- a.** Effluent monitoring frequencies and sample types for flow, BOD₅, pH, TSS, copper, cyanide, dichlorobromomethane (DCBM), chlorodibromomethane (CDBM), chlorine residual, bromoform, chloroform, dissolved oxygen, specific conductance, hardness, nitrate, ammonia, phosphorus, temperature, and total dissolved solids at Monitoring Location EFF-001B have been retained from Order No. R1-2012-0068.
- b.** Although cyanide effluent limitations and monitoring requirements are specified as total cyanide, this Order allows the Permittee the option to 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.
- c.** Monitoring data collected over the term of Order No. R1-2012-0068 indicates that the discharge at times contains total trihalomethane concentrations (sum of chloroform, bromoform, DCBM, and CDBM) that are very close to the water quality objective for TTHMs. Therefore, this Order requires the Permittee to calculate and report the effluent concentration of total trihalomethanes at Monitoring Location EFF-001B to determine if there is reasonable potential for TTHMs during the term of this Order.
- d.** Effluent monitoring data collected during the term of Order No. R1-2012-0068 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for bis (2-ethylhexyl) phthalate and 2,3,7,8-TCDD. Therefore, this Order discontinues effluent monitoring requirements for bis (2-ethylhexyl) phthalate and 2,3,7,8-TCDD.

- e. Effluent monitoring data for nitrite for discharges at Discharge Point 001 is unavailable; however, effluent nitrite concentrations at Discharge Point 002 exceeded the Primary MCL for nitrite. Because discharges at Discharge Point 001B receive additional treatment than discharges at Discharge Point 002, it is uncertain whether discharges at Discharge Point 001 have reasonable potential to cause or contribute to an exceedance of the Primary MCL. Therefore, this Order establishes monthly monitoring for nitrite in order to generate adequate data to perform an RPA prior to the next permit renewal.
 - f. This Order establishes a new monitoring requirement for aluminum in order to gather data needed to evaluate reasonable potential for aluminum. Aluminum monitoring is only required if the Permittee uses any aluminum-containing chemicals, otherwise, the Permittee's SMRs must certify that no aluminum-containing chemicals are in use. As previously described in section III.D of this Fact Sheet, the Russian River within the Ukiah Hydrologic Subarea is listed on the U.S. EPA 303(d) list as impaired for aluminum.
 - g. This Order includes a prohibition of discharges that exceed one percent of the flow of the Russian River. Therefore, this Order requires the Permittee to calculate and report the dilution rate.
 - h. Consistent with Order No. R1-2012-0068, this Order requires effluent monitoring for CTR priority pollutants annually at Monitoring Location EFF-001B to generate adequate data to perform an RPA. The sample type for CTR priority pollutants has been changed from grab to 24-hour composite, with the exception of those priority pollutants that are volatile.
 - i. This Order eliminates the effluent monitoring requirement for title 22 pollutants due to the fact that monitoring during the term of Order No. R1-2012-0068 demonstrated that no title 22 pollutants, except nitrate, exhibited reasonable potential to exceed applicable water quality objectives and effluent limitations and monitoring requirements are established for this pollutant in the Order.
- 3. Monitoring Location EFF-002**
- a. Effluent monitoring frequencies and sample types for flow, BOD₅, pH, TSS, ammonia, chloride, sodium, chlorine residual, nitrate, nitrite, organic nitrogen, total coliform organisms and total dissolved solids at Monitoring Location EFF-002 have been retained from Order No. R1-2012-0068.
 - b. The Permittee submitted a May 2010 *Fate and Transport of Wastewater Treatment Plant Discharge to Percolation Ponds, City of Ukiah, California* (Balance Hydrologics, Inc.) that evaluated water quality monitoring data from the percolation ponds, groundwater, and Russian River to evaluate whether a connection between the groundwater underlying the percolation ponds and the Russian River exists. The results of the study were inconclusive; however, seeps were observed which had similar characteristics to the wastewater in the ponds. Results of the study suggest that, due to the summer discharge prohibition contained in this Order, the development of groundwater seeps along the banks of the Russian River resulting from discharges to the percolation ponds will be especially likely from May 15 through June 1, since the

Permittee can only discharge to the percolation ponds and groundwater elevation is likely to be above the receiving water elevation during this period. Of the parameters evaluated, the study recommends that the antiepileptic drug carbamazepine would be a good wastewater tracer and that additional sampling was warranted. In order to gather data to further evaluate whether a direct hydrologic connection between the groundwater underlying the percolation ponds and the Russian River exists, this Order includes monitoring requirements for carbamazepine and the water quality indicators (i.e., hardness, pH, specific conductance, total dissolved solids, total organic carbon, and turbidity) and general minerals (i.e., alkalinity, bicarbonate, calcium, carbonate, chloride, iron, magnesium, manganese, potassium, orthophosphate, sodium, and sulfate) listed in Table 5 of the report for the effluent discharged to the percolation ponds (Monitoring Location EFF-002), receiving water (Monitoring Locations RSW-003 through RSW-005), and groundwater (Monitoring Locations GW-001 through GW-005, or any new or replacement wells added to the network). Monitoring for these parameters is required monthly to annually during the time when the seeps are most likely to occur.

C. Whole Effluent Toxicity Testing Requirements

WET monitoring requirements are retained from Order No. R1-2012-0068 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 annual monitoring requirements for chronic toxicity, but reduces the monitoring frequency from monthly to annually for acute toxicity based on sample results demonstrating consistent compliance with acute toxicity effluent limitations with 30 monthly results with 100 percent survival and two monthly results with 95 percent survival.

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 (REC-001)

This Order requires the Permittee to comply with applicable state and local requirements regarding the production of recycled water. Recycled water requirements will apply when the Permittee completes construction of its recycled water system. 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 for nitrate, nitrite, organic nitrogen, total dissolved solids, chloride, boron, and sodium 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 flow, pH, ammonia, dissolved oxygen, hardness, nitrate, temperature and turbidity have been retained from Order No. R1-2012-0068.
- ii. Consistent with Order No. R1-2012-0068, this Order does not require a CTR priority pollutant scan for the receiving water due to the fact that past CTR monitoring of the receiving water has shown that only a limited number of CTR pollutants are detected at concentrations of concern. The MRP requires, during periods of discharge to the Russian River, monthly monitoring for copper and cyanide due to the reasonable potential for discharges of these pollutants from the Facility to cause or contribute to an exceedance of water quality objectives. If future effluent monitoring reveals the presence of additional priority pollutants at concentrations greater than applicable water quality objectives, the Regional Water Board will require the Permittee to monitor the receiving water for those pollutants, either through the issuance of a 13267 technical report request or by modifying the MRP.

b. Monitoring Locations RSW-003 through RSW-005

- i. This Order includes quarterly monitoring requirements for pH, chloride, sodium, nitrate, specific conductance, and total dissolved solids at newly established Monitoring Locations RSW-003 through RSW-005 in order to gather data needed to evaluate whether the effluent, groundwater, and surface water monitoring data indicate a direct hydrologic connection between the groundwater underlying the percolation ponds and the Russian River. As described in Fact Sheet section VII.E.1.a.2, above, monthly monitoring for specific conductance and total dissolved solids at RSW-005 is also required.
- ii. This Order includes new monitoring requirements at newly established monitoring locations RSW-003 through RSW-005 for carbamazepine, water quality indicators (i.e., dissolved oxygen, hardness, oxidation-reduction potential, pH, specific conductance, total dissolved solids, total organic carbon, temperature, and turbidity), and general minerals (i.e., alkalinity, bicarbonate, calcium, carbonate, chloride, iron, magnesium, manganese, potassium, orthophosphate, sodium, and sulfate) to collect data needed to evaluate whether a connection between groundwater underlying the percolation ponds and the Russian River exists, as discussed in more detail in Fact Sheet section VII.B.2.c.

2. Groundwater

- a. Order R1-2012-0068 required groundwater monitoring at Monitoring Locations GW-001 through GW-003. In the Permittee's May 2010 *Fate and Transport of Wastewater Treatment Plant Discharge to Percolation Ponds, City of Ukiah, California* (Balance

Hydrologics, Inc.), the Permittee also collected groundwater data from a nested set of wells at the southeast corner of the southern percolation pond (MW-004 and MW-005) which have been added to the groundwater monitoring requirements included in this Order. The Permittee reported in the ROWD that existing Monitoring Well Nos. GW-001 and GW-002 will be destroyed to accommodate construction of the new recycled water storage pond. The Permittee later submitted the June 2018 *Ukiah Wastewater Treatment Plan Groundwater Monitoring Plan*. The Permittee determined that GW-002 will not be destroyed and that GW-003 should be replaced with a new well. The Permittee will replace GW-001 with a new groundwater well immediately west of the new recycled water storage pond, and close to the original GW-001 location and GW-003 with a new groundwater well placed east of Percolation Pond 3.

- b. Groundwater monitoring requirements for groundwater level, total coliform organisms and total dissolved solids have been retained from Order No. R1-2012-0068.
- c. This Order establishes new quarterly monitoring requirements for specific conductance and increases the monitoring frequencies from semiannually to quarterly for pH, chloride, and nitrate in order to assess the impact of the effluent on groundwater and evaluate whether the effluent, groundwater, and surface water monitoring data indicate a direct hydrologic connection between the percolation ponds and the Russian River.
- d. This Order includes new groundwater monitoring requirements for carbamazepine, water quality indicators (i.e., dissolved oxygen, hardness, oxidation-reduction potential, pH, specific conductance, temperature, total dissolved solids, total organic carbon, and turbidity), and general minerals (i.e., alkalinity, bicarbonate, calcium, carbonate, iron, magnesium, manganese, potassium, orthophosphate, and sulfate) to collect data needed to evaluate whether a connection between groundwater underlying the percolation ponds and the Russian River exists, as discussed in more detail in Fact Sheet section VII.B.2.c.

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 Chlorine Disinfection System.** For discharges at Discharge Points 001 and 003, chlorine disinfection system monitoring requirements at Monitoring Locations EFF-001A and REC-001 are included to ensure effective pathogen reduction. For discharges at Discharge Point 002, internal monitoring at the end of the chlorine contact pipe is required to measure chlorine residual in lieu of daily coliform monitoring to assure adequate disinfection on a daily basis. Continuous chlorine residual monitoring shall demonstrate that the appropriate chlorine residual concentration is maintained in the effluent at Monitoring Location EFF-002 at all times.

3. **Visual Monitoring.** Visual monitoring requirements for the effluent (Monitoring Location EFF-001B) and receiving water (Monitoring Locations RSW-001 and RSW-002) are retained from Order No. R1-2012-0068 and are necessary to ensure compliance with receiving water limitations in section V of the Order.
4. **Seep Monitoring**
 - a. The Permittee's 2010 Hydrogeological Study indicates that groundwater seeps have been observed adjacent to the percolation ponds, as well as upstream and downstream along the Russian River. Therefore, this Order requires visual monitoring of the banks of the Russian River following any ripping work performed on the percolation ponds in order to determine if percolation enhancement is leading to the development of groundwater seeps into the receiving water.
 - b. According to the findings in the Permittee's 2010 Hydrogeological Study, groundwater flow to the Russian River typically occurs from November through May of each year, as the groundwater elevation is above the Russian River elevation. Due to the summer discharge prohibition contained in this Order, the Regional Water Board finds that the development of groundwater seeps along the banks of the Russian River resulting from discharges to the percolation ponds will be especially likely from May 15 through June 1, since the Permittee can only discharge to the percolation ponds and groundwater elevation is likely to be above the receiving water elevation during this period. Therefore, annual monitoring requirements, to occur following May 15, for the effluent discharged to the percolation ponds (Monitoring Location EFF-002), receiving water (Monitoring Locations RSW-003 and RSW-004), and groundwater (Monitoring Locations GW-001 through GW-005) have been established to test for a direct hydrologic connection between the percolation ponds and the Russian River.
5. **Sludge Monitoring.** New sludge monitoring requirements at Monitoring Location BIO-001 serve as a basis for the Permittee to develop the Sludge Handling and Disposal Activity Report that is required as part of the Annual Report pursuant to section X.D.2.g of the MRP.
6. **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 all 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.

7. **Accelerated Monitoring Requirements.** Tables E-4 and E-5 of the MRP include accelerated monitoring requirements for parameters that are required to be monitored daily, weekly, monthly, and annually.
8. **Flow Monitoring.** Section I.D of the MRP requires proper installation, calibration, operation, and maintenance of flow metering devices.
9. **Spill Notification.** 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.

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 City of Ukiah Wastewater Treatment Plant. 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 at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the **Press Democrat** on **May 25, 2018**.

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 **June 25, 2018**.

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: **September 6, 2018**
Time: 8:30 a.m. or as announced in the Regional Water Board's agenda
Location: Regional Water Board Hearing Room
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Interested persons were invited to attend. 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 Cathleen Goodwin at Cathleen.Goodwin@waterboards.ca.gov or (707) 576-2687.

Attachment F-1 – City of Ukiah RPA Summary

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Antimony	µg/L	J	0.17	--	--	6.0	--	--	14	--	6	No
Arsenic	µg/L	J	0.49	--	--	10	340	150	--	--	10	No
Beryllium	µg/L	<	0.020	--	--	4.0	--	--	--	--	4.0	No
Cadmium	µg/L	<	0.020	--	--	1.5	2.1	1.5	--	--	5.0	No
Chromium (III)	µg/L	J	0.24	--	--	123	1,000	119	--	--	--	No
Chromium (VI)	µg/L	<	5.0	--	--	11	16	11	--	--	50	No
Copper	µg/L	=	42	=	14	28	40	28	1,300	--	--	Yes
Lead	µg/L	J	0.085	--	--	1.4	35	1.4	--	--	--	No
Mercury	µg/L	=	0.00273	--	--	0.050	--	--	0.050	--	2.0	No
Nickel	µg/L	J	2.5	--	--	30	265	30	610	--	100	No
Selenium	µg/L	J	0.24	--	--	5.0	--	5.0	--	--	50	No
Silver	µg/L	<	0.020	--	--	1.3	1.3	--	--	--	--	No
Thallium	µg/L	<	0.020	--	--	1.7	--	--	1.7	--	2.0	No
Zinc	µg/L	=	63	--	--	70	70	70	--	--	--	No
Cyanide	µg/L	=	4.5	=	5.3	5.2	22	5.2	700	--	150	Yes
Asbestos	MFL	<	0.10	--	--	7.0	--	--	7.0	--	7.0	No
2,3,7,8 TCDD	µg/L	<	9.6 x 10 ⁻⁷	<	9.7 x 10 ⁻⁷	1.3x10 ⁻⁸	--	--	1.3x10 ⁻⁸	--	3.0x10 ⁻⁵	No ¹
Acrolein	µg/L	<	0.62	--	--	320	--	--	320	--	--	No
Acrylonitrile	µg/L	<	0.19	--	--	0.059	--	--	0.059	--	--	No
Benzene	µg/L	<	0.30	--	--	1.0	--	--	1.2	--	1.0	No
Bromoform	µg/L	<	0.090	--	--	4.3	--	--	4.3	--	--	No
Carbon Tetrachloride	µg/L	<	0.11	--	--	0.25	--	--	0.25	--	0.5	No
Chlorobenzene	µg/L	<	0.083	--	--	70	--	--	680	--	70	No
Chlorodibromomethane	µg/L	=	4.31	--	--	0.41	--	--	0.41	--	--	Yes
Chloroethane	µg/L	<	0.13	--	--	No Criteria	--	--	--	--	--	No
2-Chloroethylvinyl ether	µg/L	<	0.60	--	--	No Criteria	--	--	--	--	--	No
Chloroform	µg/L	=	66.3	--	--	No Criteria	--	--	--	--	--	No
Dichlorobromomethane	µg/L	=	9.93	--	--	0.56	--	--	0.56	--	--	Yes
1,1-Dichloroethane	µg/L	<	0.072	--	--	5.0	--	--	--	--	5.0	No
1,2-Dichloroethane	µg/L	<	0.17	--	--	0.38	--	--	0.38	--	0.5	No
1,1-Dichloroethylene	µg/L	<	0.14	--	--	0.057	--	--	0.057	--	6.0	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org-Only	MCL	Reasonable Potential
1,2-Dichloropropane	µg/L	<	0.12	--	--	0.52	--	--	0.52	--	5.0	No
1,3-Dichloropropylene	µg/L	<	0.13	--	--	0.50	--	--	10	--	0.5	No
Ethylbenzene	µg/L	<	0.080	--	--	300	--	--	3,100	--	300	No
Methyl Bromide	µg/L	<	0.077	--	--	48	--	--	48	--	--	No
Methyl Chloride	µg/L	<	0.097	--	--	No Criteria	--	--	--	--	--	No
Methylene Chloride	µg/L	<	0.48	--	--	4.7	--	--	4.7	--	5.0	No
1,1,2,2-Tetrachloroethane	µg/L	<	0.086	--	--	0.17	--	--	0.17	--	1.0	No
Tetrachloroethylene	µg/L	<	0.092	--	--	0.80	--	--	0.80	--	5.0	No
Toluene	µg/L	=	2.7	--	--	150	--	--	6,800	--	150	No
1,2-Trans-Dichloroethylene	µg/L	<	0.11	--	--	10	--	--	700	--	10	No
1,1,1-Trichloroethane	µg/L	<	0.091	--	--	200	--	--	--	--	200	No
1,1,2-Trichloroethane	µg/L	<	0.13	--	--	0.60	--	--	0.60	--	5.0	No
Trichloroethylene	µg/L	<	0.12	--	--	2.7	--	--	2.7	--	5.0	No
Vinyl Chloride	µg/L	<	0.060	--	--	0.50	--	--	2.0	--	0.5	No
2-Chlorophenol	µg/L	<	0.66	--	--	120	--	--	120	--	--	No
2,4-Dichlorophenol	µg/L	<	0.66	--	--	93	--	--	93	--	--	No
2,4-Dimethylphenol	µg/L	<	1.2	--	--	540	--	--	540	--	--	No
2-Methyl- 4,6-Dinitrophenol	µg/L	<	0.75	--	--	13	--	--	13	--	--	No
2,4-Dinitrophenol	µg/L	<	1.3	--	--	70	--	--	70	--	--	No
2-Nitrophenol	µg/L	<	0.90	--	--	No Criteria	--	--	--	--	--	No
4-Nitrophenol	µg/L	<	0.99	--	--	No Criteria	--	--	--	--	--	No
3-Methyl 4-Chlorophenol	µg/L	<	0.58	--	--	No Criteria	--	--	--	--	--	No
Pentachlorophenol	µg/L	<	0.20	--	--	0.28	11	8.0	0.28	--	1.0	No
Phenol	µg/L	<	0.46	--	--	21,000	--	--	21,000	--	--	No
2,4,6-Trichlorophenol	µg/L	<	0.74	--	--	2.1	--	--	2.1	--	--	No
Acenaphthene	µg/L	<	0.57	--	--	1,200	--	--	1,200	--	--	No
Acenaphthylene	µg/L	<	0.48	--	--	No Criteria	--	--	--	--	--	No
Anthracene	µg/L	<	0.39	--	--	9,600	--	--	9,600	--	--	No
Benzidine	µg/L	<	3.4	--	--	0.00012	--	--	0.00012	--	--	No
Benzo(a)Anthracene	µg/L	<	0.39	--	--	0.0044	--	--	0.0044	--	--	No
Benzo(a)Pyrene	µg/L	<	0.50	--	--	0.0044	--	--	0.0044	--	0.2	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org-Only	MCL	Reasonable Potential
Benzo(b)Fluoranthene	µg/L	<	0.64	--	--	0.0044	--	--	0.0044	--	--	No
Benzo(ghi)Perylene	µg/L	<	0.93	--	--	No Criteria	--	--	--	--	--	No
Benzo(k)Fluoranthene	µg/L	<	0.34	--	--	0.0044	--	--	0.0044	--	--	No
Bis(2-Chloroethoxy) methane	µg/L	<	0.81	--	--	No Criteria	--	--	--	--	--	No
Bis(2-Chloroethyl)Ether	µg/L	<	0.14	--	--	0.031	--	--	0.031	--	--	No
Bis(2-Chloroisopropyl) ether	µg/L	<	0.41	--	--	1,400	--	--	1,400	--	--	No
Bis(2-Ethylhexyl) phthalate	µg/L	<	0.83	--	--	1.8	--	--	1.8	--	4.0	No
4-Bromophenyl Phenyl Ether	µg/L	<	0.43	--	--	No Criteria	--	--	--	--	--	No
Butylbenzyl Phthalate	µg/L	<	0.64	--	--	3,000	--	--	3,000	--	--	No
2-Chloronaphthalene	µg/L	<	0.57	--	--	1,700	--	--	1,700	--	--	No
4-Chlorophenyl Phenyl Ether	µg/L	<	0.93	--	--	No Criteria	--	--	--	--	--	No
Chrysene	µg/L	<	0.76	--	--	0.0044	--	--	0.0044	--	--	No
Dibenzo(a,h)Anthracene	µg/L	<	0.83	--	--	0.0044	--	--	0.0044	--	--	No
1,2-Dichlorobenzene	µg/L	<	0.61	--	--	600	--	--	2,700	--	600	No
1,3-Dichlorobenzene	µg/L	<	0.62	--	--	400	--	--	400	--	--	No
1,4-Dichlorobenzene	µg/L	<	0.61	--	--	5.0	--	--	400	--	5.0	No
3,3 Dichlorobenzidine	µg/L	<	2.0	--	--	0.040	--	--	0.040	--	--	No
Diethyl Phthalate	µg/L	<	0.86	--	--	23,000	--	--	23,000	--	--	No
Dimethyl Phthalate	µg/L	<	0.68	--	--	313,000	--	--	313,000	--	--	No
Di-n-Butyl Phthalate	µg/L	<	0.91	--	--	2,700	--	--	2,700	--	--	No
2,4-Dinitrotoluene	µg/L	<	0.68	--	--	0.11	--	--	0.11	--	--	No
2,6-Dinitrotoluene	µg/L	<	0.54	--	--	No Criteria	--	--	--	--	--	No
Di-n-Octyl Phthalate	µg/L	<	0.65	--	--	No Criteria	--	--	--	--	--	No
1,2-Diphenylhydrazine	µg/L	<	0.33	--	--	0.040	--	--	0.040	--	--	No
Fluoranthene	µg/L	<	0.76	--	--	300	--	--	300	--	--	No
Fluorene	µg/L	<	0.81	--	--	1,300	--	--	1,300	--	--	No
Hexachlorobenzene	µg/L	<	0.040	--	--	0.00075	--	--	0.00075	--	1.0	No
Hexachlorobutadiene	µg/L	<	0.50	--	--	0.44	--	--	0.44	--	--	No
Hexachlorocyclopentadiene	µg/L	<	0.40	--	--	50	--	--	240	--	50	No
Hexachloroethane	µg/L	<	0.58	--	--	1.9	--	--	1.9	--	--	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org-Only	MCL	Reasonable Potential
Indeno(1,2,3-cd)Pyrene	µg/L	<	0.63	--	--	0.0044	--	--	0.0044	--	--	No
Isophorone	µg/L	<	0.81	--	--	8.4	--	--	8.4	--	--	No
Naphthalene	µg/L	<	0.50	--	--	No Criteria	--	--	--	--	--	No
Nitrobenzene	µg/L	<	0.74	--	--	17	--	--	17	--	--	No
N-Nitrosodimethylamine	µg/L	<	1.1	--	--	0.00069	--	--	0.00069	--	--	No
N-Nitrosodi-n-Propylamine	µg/L	<	0.85	--	--	0.0050	--	--	0.0050	--	--	No
N-Nitrosodiphenylamine	µg/L	<	0.90	--	--	5.0	--	--	5.0	--	--	No
Phenanthrene	µg/L	<	0.65	--	--	No Criteria	--	--	--	--	--	No
Pyrene	µg/L	<	0.45	--	--	960	--	--	960	--	--	No
1,2,4-Trichlorobenzene	µg/L	<	0.50	--	--	5.0	--	--	--	--	5.0	No
Aldrin	µg/L	<	0.0020	--	--	0.00013	3.0	--	0.00013	--	--	No
alpha-BHC	µg/L	<	0.0020	--	--	0.0039	--	--	0.0039	--	--	No
beta-BHC	µg/L	<	0.0020	--	--	0.014	--	--	0.014	--	--	No
gamma-BHC	µg/L	<	0.0020	--	--	0.019	0.95	--	0.019	--	0.2	No
delta-BHC	µg/L	<	0.0010	--	--	No Criteria	--	--	--	--	--	No
Chlordane	µg/L	<	0.035	--	--	0.00057	2.4	0.0043	0.00057	--	0.1	No
4,4'-DDT	µg/L	<	0.0030	--	--	0.00059	1.1	0.001	0.00059	--	--	No
4,4'-DDE	µg/L	<	0.0030	--	--	0.00059	--	--	0.00059	--	--	No
4,4'-DDD	µg/L	<	0.0030	--	--	0.00083	--	--	0.00083	--	--	No
Dieldrin	µg/L	<	0.0020	--	--	0.00014	0.24	0.056	0.00014	--	--	No
alpha-Endosulfan	µg/L	<	0.0030	--	--	0.056	0.22	0.056	110	--	--	No
beta-Endosulfan	µg/L	<	0.0020	--	--	0.056	0.22	0.056	110	--	--	No
Endosulfan Sulfate	µg/L	<	0.0020	--	--	110	--	--	110	--	--	No
Endrin	µg/L	<	0.0020	--	--	0.036	0.086	0.036	0.76	--	2.0	No
Endrin Aldehyde	µg/L	<	0.0020	--	--	0.76	--	--	0.76	--	--	No
Heptachlor	µg/L	<	0.0020	--	--	0.00021	0.52	0.0038	0.00021	--	0.01	No
Heptachlor Epoxide	µg/L	<	0.0020	--	--	0.0001	0.52	0.0038	0.0001	--	0.01	No
PCBs sum	µg/L	<	0.040	--	--	0.00017	--	0.014	0.00017	--	0.5	No
Toxaphene	µg/L	<	0.20	--	--	0.00020	0.73	0.00020	0.00073	--	3.0	No
Total Trihalomethanes	µg/L	=	77.08	--	--	80	--	--	--	--	80	No
Aluminum	µg/L	<	50	--	--	--	--	--	--	--	200	No
Barium	µg/L	=	31	--	--	1,000	--	--	--	--	1,000	No
Fluoride	mg/L	=	0.12	--	--	2.0	--	--	--	--	2.0	No

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 City of Ukiah
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Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Specific Conductance @ 77°F	µmhos/cm	=	764	=	281	900	--	--	--	--	900	No
Total Dissolved Solids	mg/L	=	440	=	410	500	--	--	--	--	500	No
Ammonia Nitrogen, Total (as N)	mg/L	=	12	=	1.8	2.9	5.6	2.9	--	--	--	Yes
Nitrate, Total (as N)	mg/L	=	18	=	1.3	10	--	--	--	--	10	Yes
Nitrate Plus Nitrite, Total (as N)	mg/L	=	15	--	--	10	--	--	--	--	10	Yes
Nitrite, Total (as N)	mg/L	=	0.21	--	--	1.0	--	--	--	--	1.0	No
Table Notes:												
1. See discussion in the narrative portion of section IV.C.3.c.												