

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

1515 Clay Street, Suite 1400, Oakland, California 94612
waterboards.ca.gov/sanfranciscobay

**ORDER R2-2021-0004
NPDES PERMIT CA0038016**

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

Discharger **City of St. Helena**
Name of Facility **City of St. Helena Wastewater Treatment and Reclamation Plant and Wastewater Collection System**
Facility Address **1 Chaix/Thomann Lane
St. Helena, California 94574
Napa County**

Table 1. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North-South)	Discharge Point Longitude (East-West)	Receiving Water
001	Secondary-Treated Municipal Wastewater	38.5028°	-122.4375°	Napa River

This Order was adopted on: **April 14, 2021**
This Order shall become effective on: **June 1, 2021**
This Order shall expire on: **May 30, 2026**
CIWQS regulatory measure number: **442938**

The Discharger shall file a Report of Waste Discharge as an application for updated WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than **September 1, 2025**. The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) have classified this discharge as “**minor**.”

I hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the Regional Water Board on the date indicated above.

Michael Montgomery, Executive Officer

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1. FACILITY INFORMATION

Information describing the City of St. Helena Wastewater Treatment and Reclamation Plant and its wastewater collection system (collectively, Facility) is summarized on the cover page and in Fact Sheet (Attachment F) sections 1 and 2. Fact Sheet section 1 also includes information regarding the permit application.

2. FINDINGS

The Regional Water Board finds the following:

- 2.1. Legal Authorities.** This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States as described in Table 1 subject to the WDRs in this Order.
- 2.2. Background and Rationale for Requirements.** The Regional Water developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, and G are also incorporated into this Order.
- 2.3. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and has provided an opportunity to submit written comments and recommendations. Fact Sheet section 8.1 provides details regarding the notification.
- 2.4. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Fact Sheet section 8.3 provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order R2-2016-0003 (previous order) is rescinded upon the effective date of this Order, except for enforcement purposes, and, in order to meet the provisions contained in Water Code division 7 (commencing with § 13000) and regulations adopted thereunder and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for violations of the previous order.

3. DISCHARGE PROHIBITIONS

- 3.1. Discharge of treated or partially-treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- 3.2. Discharge of treated wastewater at Discharge Point 001 is prohibited unless the river flow-to-effluent flow ratio is at least 19:1.
- 3.3. Bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D, section 1.7 of this Order.
- 3.4. Average dry weather influent flow in excess of 0.50 MGD is prohibited. Average dry weather influent flow shall be determined from three consecutive dry weather months each year, with compliance measured at Monitoring Location INF-001 as described in the Monitoring and Reporting Program (MRP, Attachment E).
- 3.5. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.
- 3.6. Discharge to the Napa River at Discharge Point 001 is prohibited during the dry season each year, from June 1 through October 31, except when Facility effluent flow exceeds the capacity of influent storage and the capacity of the recycled water distribution and storage system (described in Fact Sheet section 2) to meet recycled water demand. Discharge shall not arise as a result of the Discharger's failure to produce, use, or supply recycled water. The discharge shall be monitored and meet limitations, and shall consist of fully treated effluent.

If there is discharge during the dry season, the Discharger shall describe the reasons for the discharge in the transmittal letter of its next self-monitoring report, with supporting information, and include a table that describes the volume, duration, and estimated dilution within the receiving water. In accordance with the Monitoring and Reporting Program, all discharge volume and quality data shall be reported in the appropriate monthly self-monitoring report.

4. EFFLUENT LIMITATIONS

- 4.1. **Effluent Limitations.** The discharge at Discharge Point 001 shall meet the following effluent limitations, with compliance measured at Monitoring Locations EFF-001 and EFF-001-D as described in the MRP:

Table 2. Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	15	25	-	-	-
Total Suspended Solids	mg/L	15	20	-	-	-

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH ^[1]	standard units	-	-	-	6.5	8.5
Oil and Grease	mg/L	10	-	20	-	-
Chlorine, Total Residual	mg/L	-	-	-	-	0.0
Ammonia, Total	mg/L as N	7.8	-	16	-	-
Copper, Total Recoverable	µg/L	8.3	-	14	-	-
Cyanide, Total	µg/L	9.3	-	26	-	-
Chlorodibromomethane	µg/L	1.4	-	2.7	-	-
Dichlorobromomethane	µg/L	6.6	-	13	-	-
Total Trihalomethanes	µg/L	160	-	320	-	-

Footnote:

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

4.2. Percent Removal. The average monthly percent removal of biochemical oxygen demand (BOD) and total suspended solids (TSS) at Discharge Point 001 shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of BOD and TSS, by concentration, of effluent samples collected at Monitoring Location EFF-001 as described in the MRP, shall not exceed 15 percent of the arithmetic mean of BOD and TSS, by concentration, of influent samples collected at Monitoring Location INF-001 as described in the MRP, at approximately the same times during the same periods).

4.3. *E. coli* Bacteria. The discharge at Discharge Point 001 shall meet the following *Escherichia coli* (*E. coli*) effluent limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:

4.3.1. The six-week rolling geometric mean of *E. coli* bacteria shall not exceed 100 colony forming units per 100 milliliters (CFU/100 mL). Compliance with this limit shall be determined weekly by calculating the geometric mean of all *E. coli* sample results from the past six weeks.

4.3.2. No more than 10 percent of all *E. coli* bacteria samples collected in a calendar month shall exceed 320 CFU/100 mL. Compliance with this limit shall be determined based on measured sample results. The Discharger shall not report interpolated results. If the Discharger has 9 or fewer sample results in a calendar month, compliance shall be based on the highest result. If the Discharger has 10 to 19 sample results, compliance shall be based on the second highest result, and so on.

4.4. Total Coliform. The discharge at Discharge Point 001 shall meet the following total coliform effluent limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:

4.4.1. The five-sample moving median of all total coliform samples shall not exceed 23 Most Probable Number per 100 milliliters (MPN/100 mL).

4.4.2. The daily maximum shall not exceed 240 MPN/100 mL.

4.5. Acute Toxicity. The discharge at Discharge Point 001 shall meet the following acute toxicity effluent limitation, with compliance measured at Monitoring Location EFF-001 as described in the MRP: the single-sample survival rate shall not be less than 70 percent. A bioassay showing less than 70 percent survival shall represent a violation of this effluent limit.

If the Discharger can demonstrate that toxicity exceeding this acute toxicity limit is caused solely by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Table 2 of this Order, then such toxicity shall not constitute a violation of this acute toxicity limit.

5. RECEIVING WATER LIMITATIONS

5.1. The discharge shall not cause the following conditions at any place in receiving waters:

5.1.1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;

5.1.2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;

5.1.3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;

5.1.4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

5.1.5. Alteration of temperature beyond present natural background levels unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses;

5.1.6. Changes in turbidity that cause nuisance or adversely affect beneficial uses, or increases from normal background light penetration or turbidity greater than 10 percent in areas where natural turbidity is greater than 50 nephelometric turbidity units, or above 55 nephelometric turbidity units in areas where natural turbidity is less than or equal to 50 nephelometric turbidity units;

5.1.7. Coloration that causes nuisance or adversely affects beneficial uses;

5.1.8. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or

5.1.9. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

5.2. The discharge shall not cause the following limits to be exceeded at any place in receiving waters within one foot of the water surface:

5.2.1. Dissolved Oxygen 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations

5.2.2. Dissolved Sulfide Natural background levels

5.2.3. pH The pH shall not be depressed below 6.5 nor raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.

5.2.4. Nutrients Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

5.3. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or State Water Resources Control Board (State Water Board) as required by the CWA and regulations adopted thereunder beyond any mixing zone established through this Order. If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise or modify this Order in accordance with the more stringent standards.

6. PROVISIONS

6.1. Standard Provisions

6.1.1. The Discharger shall comply with all "Standard Provisions" in Attachment D.

6.1.2. The Discharger shall comply with all applicable provisions of the "Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits" in Attachment G.

6.1.3. If there is any conflict, duplication, or overlap between provisions in this Order, the more stringent provision shall apply.

6.2. Monitoring and Reporting Provisions

The Discharger shall comply with the Monitoring and Reporting Program (MRP, Attachment E) and future revisions thereto, and applicable monitoring and reporting requirements in Attachments D and G.

6.3. Special Provisions

6.3.1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law or as otherwise authorized by law. The Discharger may request a permit modification based on any of these circumstances. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses as necessary.

- 6.3.1.1. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters;
- 6.3.1.2. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay or contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives or wasteload allocations. Adoption of the effluent limitations in this Order is not intended to restrict in any way future modifications based on legally-adopted water quality objectives or TMDLs or as otherwise permitted under federal regulations governing NPDES permit modifications;
- 6.3.1.3. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified;
- 6.3.1.4. If a State Water Board precedential decision, new policy, new law, or new regulation is adopted;
- 6.3.1.5. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge; or
- 6.3.1.6. If the Discharger requests adjustments in effluent limits due to the implementation of stormwater diversion for redirecting dry weather and first flush discharges from a storm drain system to the sanitary sewer system as a stormwater pollutant control strategy.

6.3.2. Effluent Characterization Study and Report

6.3.2.1. **Study Elements.** The Discharger shall characterize and evaluate the discharge from Discharge Point 001 as required by the MRP to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall evaluate on an annual basis if concentrations of any of the priority pollutants listed in Attachment G, Table B, significantly increase over past performance based on sample results from the previous year. Additionally, the Discharger shall evaluate if concentrations of any pollutants specified in Basin Plan section 3.3.22, except for color, turbidity, odor and radioactivity, significantly increase over past performance. The Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a “pollutant of concern” in the Discharger’s Pollutant Minimization Program, described in Provision 6.3.3.

6.3.2.2. Reporting Requirements

6.3.2.2.1. **Routine Reporting.** The Discharger shall report the pollutants detected at or above applicable water quality objectives (see Fact Sheet Table F-8 for the objectives) in the transmittal letter for the self-monitoring report associated with the month in which samples were collected. This requirement does not apply to pollutants with effluent limitations (see Table 2 of this Order).

6.3.2.2.2. **Annual Reporting.** The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report.

6.3.3. Pollutant Minimization Program

6.3.3.1. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

6.3.3.2. The Discharger shall submit an annual report no later than February 28 of each calendar year. Each annual report shall include at least the following information:

6.3.3.2.1. **Brief description of treatment plant.** The description shall include the service area and treatment plant processes.

6.3.3.2.2. **Discussion of current pollutants of concern.** Periodically, the Discharger shall analyze its circumstances to determine which pollutants

are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.

- 6.3.3.2.3. **Identification of sources for pollutants of concern.** This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.
- 6.3.3.2.4. **Identification of tasks to reduce the sources of pollutants of concern.** This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.
- 6.3.3.2.5. **Outreach to employees.** The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the Facility. The Discharger may provide a forum for employees to provide input.
- 6.3.3.2.6. **Continuation of Public Outreach Program.** The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.
- 6.3.3.2.7. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions 6.3.3.2.3, 6.3.3.2.4, 6.3.3.2.5, and 6.3.3.2.6.
- 6.3.3.2.8. **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

- 6.3.3.2.9. **Evaluation of Pollutant Minimization Program and task effectiveness.** The Discharger shall use the criteria established in Provision 6.3.3.2.7 to evaluate the program and task effectiveness.
- 6.3.3.2.10. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the treatment plant, and subsequently in its effluent.
- 6.3.3.3. The Discharger shall develop and conduct a Pollutant Minimization Program as described below when there is that a priority pollutant is present in the effluent above an effluent limitation evidence (e.g., sample results reported as detected but not quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) and either:
- 6.3.3.3.1. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
- 6.3.3.3.2. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the MRP.
- 6.3.3.4. If triggered for a reason set forth in Provision 6.3.3.3, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:
- 6.3.3.4.1. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;
- 6.3.3.4.2. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;
- 6.3.3.4.3. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;
- 6.3.3.4.4. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
- 6.3.3.4.5. Inclusion of the following specific items within the annual report required by Provision 6.3.3.2, above:

- 6.3.3.4.5.1. All Pollutant Minimization Program monitoring results for the previous year;
- 6.3.3.4.5.2. List of potential sources of the reportable priority pollutants;
- 6.3.3.4.5.3. Summary of all actions undertaken pursuant to the control strategy; and
- 6.3.3.4.5.4. Description of actions to be taken in the following year.

6.3.4. **Special Provisions for Publicly-Owned Treatment Works**

6.3.4.1. **Sludge and Biosolids Management**

- 6.3.4.1.1. Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- 6.3.4.1.2. Sludge and biosolids treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion, and to prevent conditions that would cause drainage from the stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal stage that may occur.
- 6.3.4.1.3. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. The Discharger shall file a Report of Waste Discharge and bring the site into compliance with applicable regulations prior to commencement of any such activity.

- 6.3.4.2. **Collection System Management.** The Discharger shall properly operate and maintain its collection system (see Attachments D and G, section 1.4), report any noncompliance with respect to its collection system (see Attachment D, section 5.5.1, and Attachment G, sections 5.5.1 and 5.5.2), and mitigate any discharges in violation of this Order associated with its collection system (see Attachments D and G, section 1.3).

State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC (statewide WDRs), contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The statewide WDRs clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementing the requirements for operation and maintenance and mitigation of sanitary sewer overflows set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the corresponding federal NPDES requirements specified in Attachments D and G of this Order for the collection systems. Following the reporting requirements set forth in the

statewide WDRs (and any subsequent order updating those requirements) shall satisfy the NPDES reporting requirements for sanitary sewer overflows specified in Attachments D and G.

- 6.3.4.3. **Resource Recovery from Anaerobically Digestible Material.** If the Discharger receives hauled-in anaerobically-digestible material for injection into an anaerobic digester, the Discharger shall notify the Regional Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed prior to initiation of hauling. The Standard Operating Procedures shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; spill response; avoidance of the introduction of materials that could cause interference, pass through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the Standard Operating Procedures and maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition, location, and quantity of cumulative pre-digestion segregated solid waste hauled offsite.

6.3.5. **Other Special Provisions**

- 6.3.5.1. **Plant Upgrades.** Until the Discharger completes plant upgrades necessary to comply with Cease and Desist Order R2-2016-0004, it shall submit quarterly progress reports on January 1, April 1, July 1, and October 1 of each year that include actions completed over the previous quarter and any updates to the schedule described in Fact Sheet section 2.1.6. The following documentation shall be submitted to the Regional Water Board upon completion of plant upgrades:
- 6.3.5.1.1. Documentation that the reliability, capability, and performance of plant upgrades will maintain compliance with this Order (i.e., the Discharger shall evaluate the hydraulic and organic loading capacities of the Facility by appropriate desk-top analyses and treatment process stress testing to simulate design peak loading conditions under both dry weather and wet weather flow conditions);
 - 6.3.5.1.2. Certification by a licensed professional that the upgrades have been constructed as designed, have been tested, and are ready for use;
 - 6.3.5.1.3. Demonstration of compliance with all applicable provisions of the California Environmental Quality Act (California Public Resources Code Division 13, Chapter 3, section 21100 et seq.);

- 6.3.5.1.4. Updates to the Operations and Maintenance Manual and Contingency Plan to reflect plant upgrades; and
- 6.3.5.1.5. The specific date the Discharger will commence use of the fully upgraded system.
- 6.3.5.2. **Average Annual Selenium Load.** The Discharger shall report the average annual selenium load from Discharge Point 001 with its application for permit reissuance. The average annual load shall be the arithmetic mean of the annual mass discharges for the previous permit term. Annual mass emissions shall be computed as follows:

$$\text{Annual Mass emission rate (kg/day)} = (3.785/N) \sum Q_i C_i$$

Where:

N = number of samples in a year

Q_i = flow rate (MGD) associated with the i^{th} sample, valid until a new sample is collected

C_i = selenium concentration (mg/L) associated with the i^{th} sample, valid until a new sample is collected

When calculating selenium loads, the Discharger shall use estimated values and assume data reported below the method detection limit equal half of the detection limit.

ATTACHMENT A – DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Arithmetic Mean (μ)

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

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where: Σx is the sum of the measured ambient water concentrations,
and n is the number of samples

Average Monthly Effluent Limitation (AMEL)

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)

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

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

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation (CV)

Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge

Either: (1) the total mass of a constituent discharged over a calendar day (12:00 a.m. through 11:59 p.m.) 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 a constituent over a 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 is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

Sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

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.

Effluent Concentration Allowance (ECA)

Value derived from the water quality criterion or objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV 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 the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

Concentration that results from the confirmed detection of a substance below the ML by the analytical method.

Estuaries

Waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220; Suisun Bay; Carquinez Strait downstream to the Carquinez Bridge; and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the state that are not the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

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

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).

Maximum Daily Effluent Limitation (MDEL)

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

Middle measurement in a data set. The median of a data set 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 $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

Minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 C.F.R. part 136, Appendix B.

Minimum Level (ML)

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

Limited volume of receiving water 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)

Sample results less than the laboratory's MDL.

Persistent Pollutants

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

Pollutant Minimization Program

Program of 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 a Pollutant Minimization Program is to reduce all potential sources of a priority pollutant 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. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill the Pollutant Minimization Program requirements.

Pollution Prevention

Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant 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 Water Resources Control Board or Regional Water Board.

Reporting Level (RL)

ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. For priority pollutants, 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 State Implementation Plan (SIP) Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. 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.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)

Measure of variability calculated as follows:

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

where: x is the observed value
 μ is the arithmetic mean of the observed values
 n is the number of samples

Toxicity Reduction Evaluation (TRE)

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 chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

ABBREVIATIONS

%	Percent
µg/L	Micrograms per liter
1/Blending Event	Once per blending event
1/Day	Once per day
1/Month	Once per month
1/Quarter	Once per quarter
1/Week	Once per week
1/Year	Once per year
2/Month	Two times per month
2/Week	Twice per week
2/Year	Twice per year
3/Week	Three times per week
4/Week	Four times per week
5/Week	Five times per week
AMEL	Average monthly effluent limitation
AWEL	Average weekly effluent limitation
B	Background concentration
C	Water quality criterion or objective
C-24	24-hour composite
CFU/100 mL	Colony forming units per 100 milliliters
CIWQS	California Integrated Water Quality System

Continuous	Measured continuously
Continuous/D	Measured continuously, and recorded and reported daily
Continuous/H	Measured continuously, and recorded and reported hourly
CTR	California Toxics Rule
CV	Coefficient of Variation
DMR	Discharge Monitoring Report
DNQ	Detected, but not quantified
DL	Detection level
ECA	Effluent Concentration Allowance
Grab	Grab sample
MDEL	Maximum Daily Effluent Limitation
MDL	Method detection limit
MEC	Maximum effluent concentration
MG	Million gallons
mg/L	Milligrams per liter
mg/L as N	Milligrams per liter as nitrogen
MGD	Million gallons per day
ML	Minimum level
MPN/100 mL	Most probable number per 100 milliliters
NTR	National Toxics Rule
ND	Not detected
NTU	Nephelometric turbidity units
RL	Reporting level
RPA	Reasonable potential analysis
SIP	<i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy)</i>
SMR	Self Monitoring Report
s.u.	Standard pH units
TIE	Toxicity identification evaluation
TRE	Toxicity reduction evaluation
TUa	Acute toxicity units
TUc	Chronic toxicity units

WDRs	Waste discharge requirements
WQBEL	Water quality-based effluent limitation

ATTACHMENT B – MAPS

Figure B-1. Satellite Image of Facility



Figure B-2. Facility Treatment Ponds

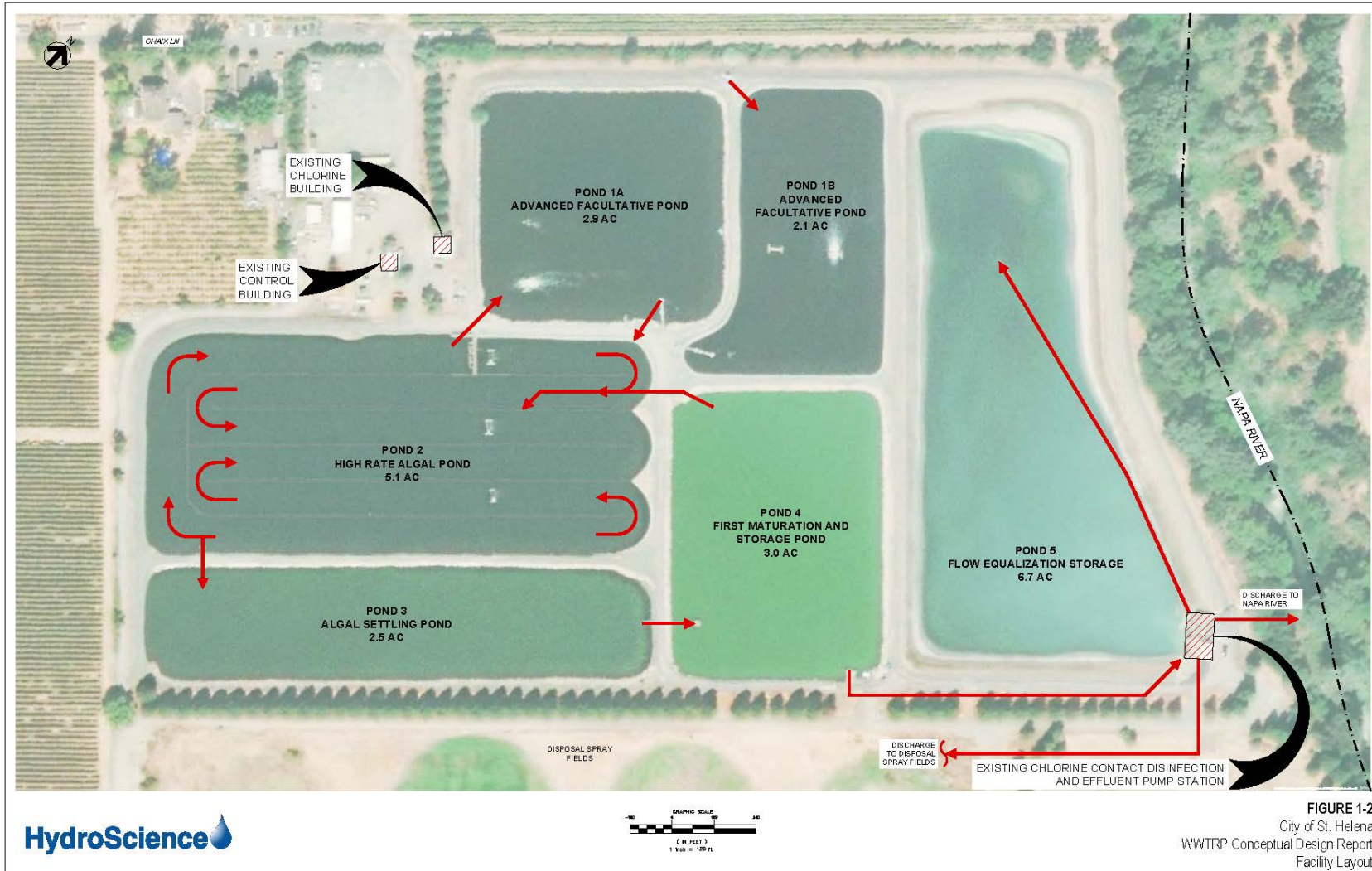
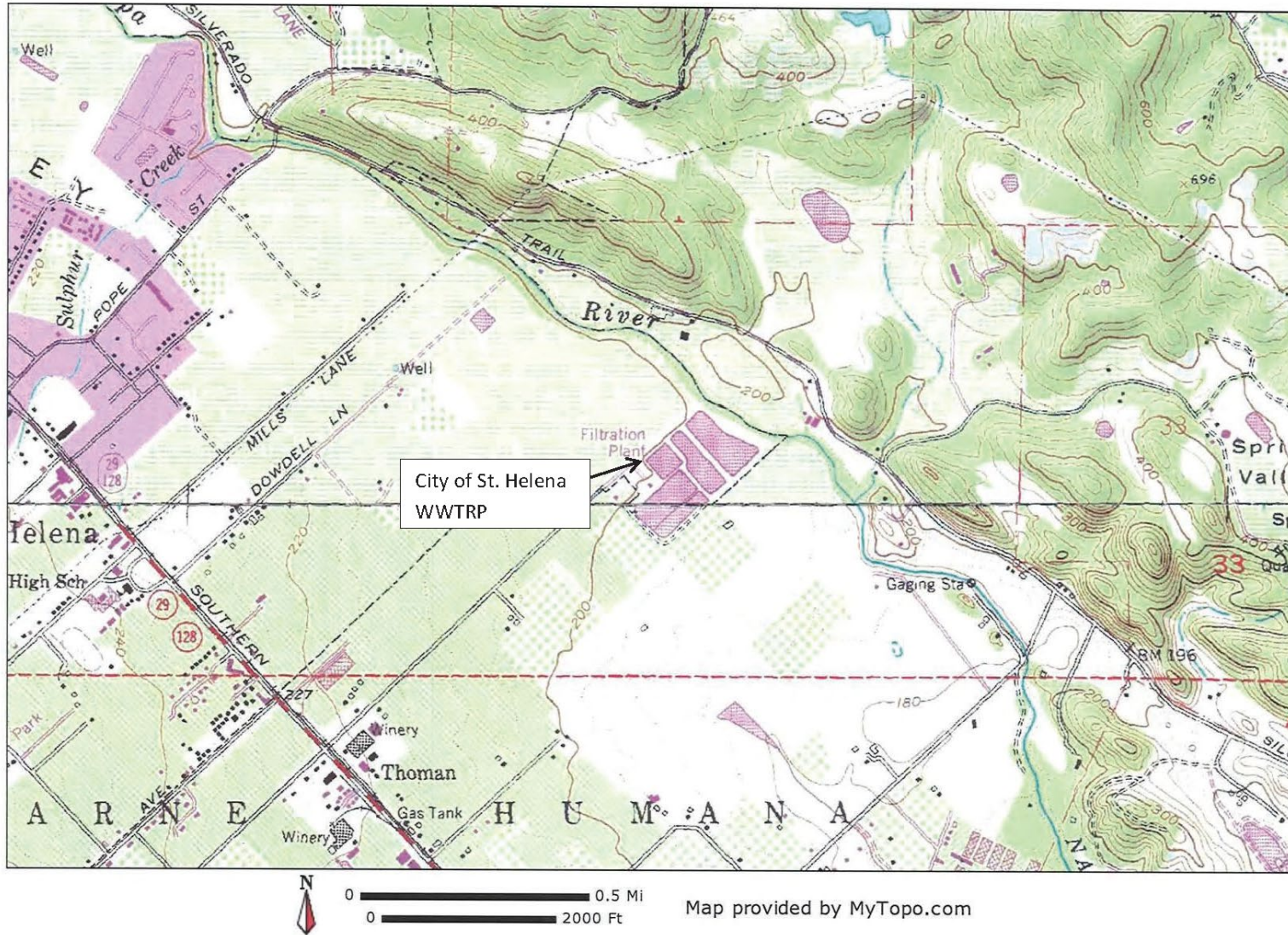


FIGURE 1-2
City of St. Helena
WWTRP Conceptual Design Report
Facility Layout

Figure B-3. Topographic Map of Facility and Surroundings



ATTACHMENT C – FLOW SCHEMATICS

Figure C-1. Existing Treatment Process

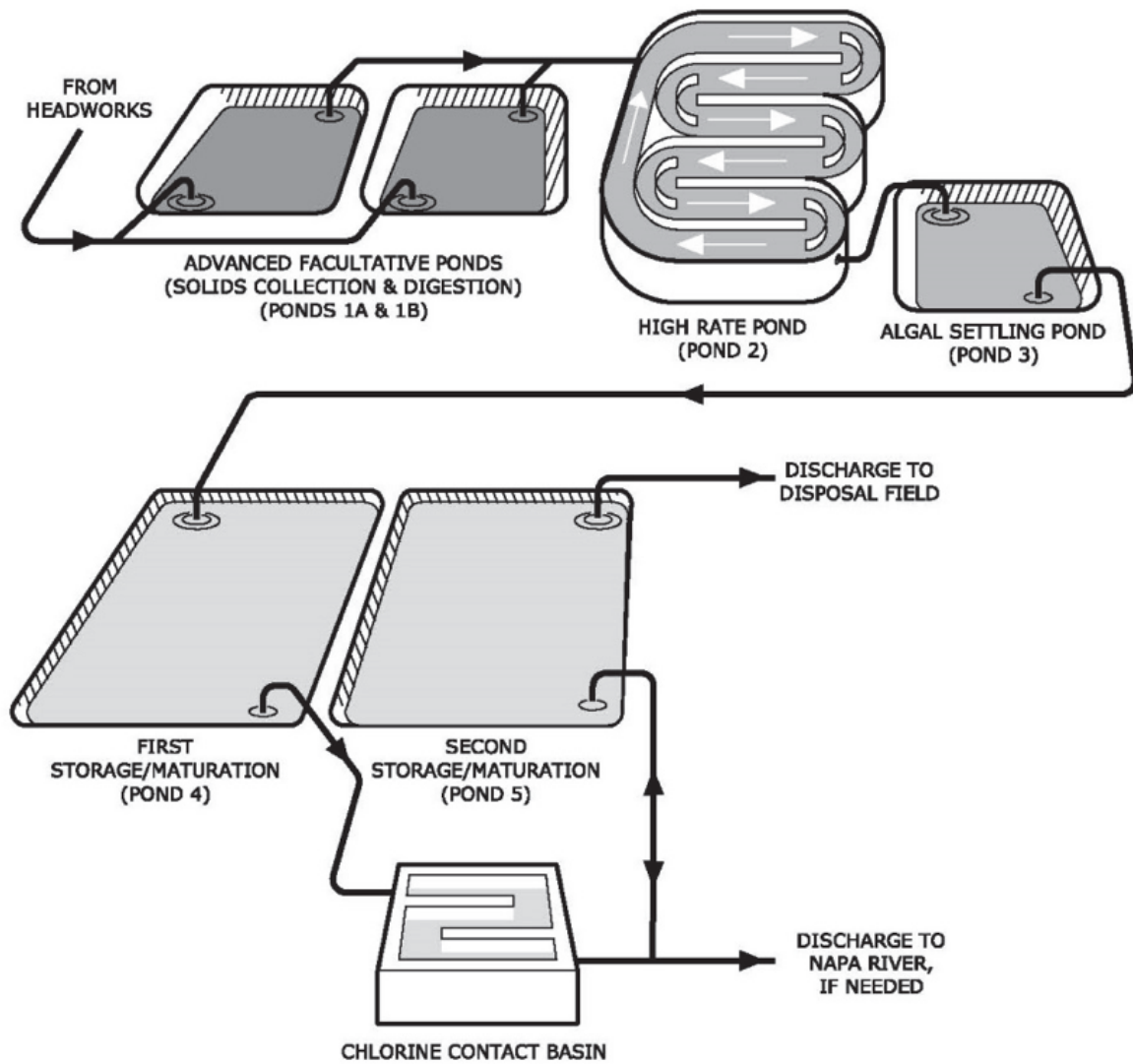
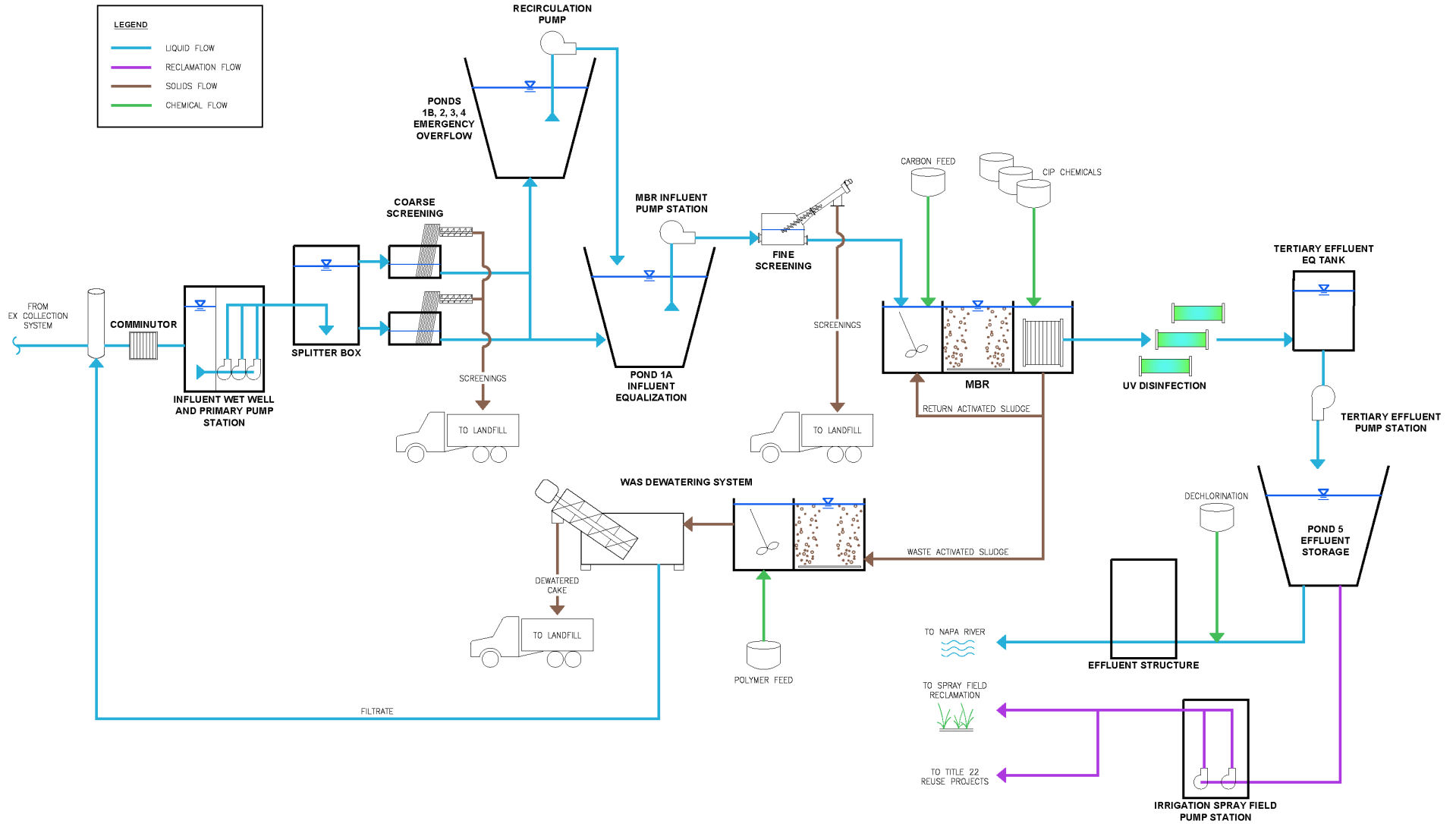


Figure C-2. Planned Treatment Process



ATTACHMENT D – STANDARD PROVISIONS

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ATTACHMENT D – STANDARD PROVISIONS

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply

- 1.1.1. The Discharger must comply with all of the terms, requirements, and 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; 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, 13001, 13304, 13350, 13385.)
- 1.1.2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants 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).)

1.2. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Discharger 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).)

1.3. Duty to Mitigate. The Discharger shall take all reasonable steps to minimize or prevent any discharge 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).)

1.4. Proper Operation and Maintenance. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

1.5. Property Rights

- 1.5.1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
- 1.5.2. 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).)

- 1.6. Inspection and Entry.** The Discharger 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):
- 1.6.1. Enter upon the Discharger'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);
 - 1.6.2. 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);
 - 1.6.3. 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
 - 1.6.4. Sample or monitor, at reasonable times, for the purposes of ensuring 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.)

1.7. Bypass

1.7.1. Definitions

- 1.7.1.1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- 1.7.1.2. "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).)

1.7.2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur that does not cause exceedances of effluent limitations, but only if it is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance sections 1.7.3, 1.7.4, and 1.7.5 below. (40 C.F.R. § 122.41(m)(2).)

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

- 1.7.3.1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- 1.7.3.2. 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
- 1.7.3.3. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance section 1.7.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
- 1.7.4. **Approval.** 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 section 1.7.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
- 1.7.5. **Notice**
 - 1.7.5.1. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the date of the bypass. The notice shall be sent to the Regional Water Board. As of December 21, 2025, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 below. Notices shall 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(m)(3)(i).)
 - 1.7.5.2. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions – Reporting section 5.5 below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2025, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 below. Notices shall 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(m)(3)(ii).)
- 1.8. **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 Discharger. 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).)

- 1.8.1. **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 section 1.8.2 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).)
- 1.8.2. **Conditions necessary for a demonstration of upset.** A Discharger 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)):
 - 1.8.2.1. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - 1.8.2.2. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - 1.8.2.3. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting section 5.5.2.2 below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - 1.8.2.4. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance section 1.3 above. (40 C.F.R. § 122.41(n)(3)(iv).)
- 1.8.3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

2. STANDARD PROVISIONS – PERMIT ACTION

- 2.1. **General.** This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger 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).)
- 2.2. **Duty to Reapply.** If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)
- 2.3. **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 Discharger and incorporate such other requirements as may be necessary under the CWA and Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

3. STANDARD PROVISIONS – MONITORING

- 3.1.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- 3.2.** Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:
 - 3.2.1.** The method minimum level (ML) is at or below the level of the most stringent 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 most stringent 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 the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
 - 3.2.2.** 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, for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

4. STANDARD PROVISIONS – RECORDS

- 4.1.** The Discharger 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).)
- 4.2.** Records of monitoring information shall include:
 - 4.2.1.** The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

- 4.2.2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 - 4.2.3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 - 4.2.4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 - 4.2.5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 - 4.2.6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- 4.3. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):**
- 4.3.1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 - 4.3.2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information. The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information that 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 Discharger 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, 13383.)

5.2. Signatory and Certification Requirements

- 5.2.1. 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 sections 5.2.2, 5.2.3, 5.2.4, 5.2.5, and 5.2.6 below. (40 C.F.R. § 122.41(k).)
- 5.2.2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (2) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to ensure long term environmental

compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipal, state, federal, or other public agency, 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 (1) the chief executive officer of the agency, or (2) 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).)

- 5.2.3. 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 section 5.2.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 5.2.3.1. The authorization is made in writing by a person described in Standard Provisions – Reporting section 5.2.2 above (40 C.F.R. § 122.22(b)(1));
 - 5.2.3.2. 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
 - 5.2.3.3. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
- 5.2.4. If an authorization under Standard Provisions – Reporting section 5.2.3 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 section 5.2.3 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).)
- 5.2.5. Any person signing a document under Standard Provisions – Reporting section 5.2.2 or 5.2.3 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).)

- 5.2.6. Any person providing the electronic signature for documents described in Standard Provisions – Reporting sections 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting section 5.2, 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).)

5.3. Monitoring Reports

- 5.3.1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
- 5.3.2. 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. All reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 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).)
- 5.3.3. If the Discharger 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, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
- 5.3.4. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

- 5.4. 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).)

5.5. Twenty-Four Hour Reporting

- 5.5.1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report 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.

For noncompliance 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, 2025, 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 section 5.10. 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 Discharger 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).)

- 5.5.2. The following shall be included as information that must be reported within 24 hours:
- 5.5.2.1. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
- 5.5.2.2. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
- 5.5.3. The Regional Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

- 5.6. Planned Changes.** The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

- 5.6.1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
- 5.6.2. 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 unless the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a). (40 C.F.R. § 122.41(l)(1)(ii).) If the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions – Notification Levels section 7.1.1). (40 C.F.R. § 122.41(l)(1)(ii).)
- 5.7. Anticipated Noncompliance.** The Discharger shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order’s requirements. (40 C.F.R. § 122.41(l)(2).)
- 5.8. Other Noncompliance.** The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting sections 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting section 5.5 above. For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting section 5.5 and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Discharger 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).)
- 5.9. Other Information.** When the Discharger 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 Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)
- 5.10. Initial Recipient for Electronic Reporting Data.** The owner, operator, or 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 list. (40 C.F.R. § 122.41(l)(9).)

6. STANDARD PROVISIONS – ENFORCEMENT

6.1. 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, Water Code sections 13268, 13385, 13386, and 13387.

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

7.1. **Non-Municipal Facilities.** Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

7.1.1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels” (40 C.F.R. § 122.42(a)(1)):

7.1.1.1. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));

7.1.1.2. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4 dinitrophenol and 2-methyl 4,6 dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

7.1.1.3. Five (5) times the maximum concentration reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

7.1.1.4. The level established by the Regional Water Board in accordance with 40 C.F.R. section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

7.1.2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels” (40 C.F.R. § 122.42(a)(2)):

7.1.2.1. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(2)(i));

7.1.2.2. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

7.1.2.3. Ten (10) times the maximum concentration reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

7.1.2.4. The level established by the Regional Water Board in accordance with 40 C.F.R. section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

7.2 Publicly Owned Treatment Works (POTWs)

7.2.1. All POTWs shall provide adequate notice to the Regional Water Board of any new introduction of pollutants into the POTW from an indirect discharger that

would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)).

- 7.2.2. All POTWs shall provide adequate notice to the Regional Water Board of 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).)
- 7.2.3. 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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Clean Water Act (CWA) section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and State laws and regulations.

1. GENERAL MONITORING PROVISIONS

- 1.1. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. section 122.63. If any discrepancies exist between this MRP and the “Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits” (Attachment G), this MRP shall prevail.
- 1.2. The Discharger shall conduct all monitoring in accordance with Attachment D section 3, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.
- 1.3. For the analysis of monitoring samples, the Discharger shall use laboratories certified by the State Water Resources Control Board (State Water Board) in accordance with Water Code section 13176 and shall obtain quality assurance/quality control data with laboratory reports. For any onsite field tests (e.g., turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual) analyzed by a noncertified laboratory, the Discharger shall implement a Quality Assurance-Quality Control Program. The Discharger shall keep a manual onsite containing the steps followed in this program and shall demonstrate sufficient capability to adequately perform these field tests (e.g., qualified and trained employees, properly calibrated and maintained field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.
- 1.4. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or 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

2. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location	Monitoring Location Description
Influent	INF-001	A point in the treatment plant at which all waste tributary to the treatment system is present, preceding any phase of treatment, and exclusive of any return flows or process side streams that significantly affect the quantity or quality of the influent.
Effluent	EFF-001-D	A point in the treatment plant immediately after disinfection and upstream of Pond 5.
Effluent	EFF-001	A point in the treatment plant following all treatment that represents all flow tributary to Discharge Point 001.
Recycled Water	REC-001	A point after full treatment, including disinfection, that represents all flow applied to irrigation fields or directed for offsite recycled water use.
Receiving Water	RSW-001	A point in the Napa River approximately 1,000 feet upstream of the City of Calistoga Dunawear Wastewater Treatment Plant.
Receiving Water	RSW-002-U	A point in the Napa River approximately 200 feet upstream of Discharge Point 001.
Receiving Water	RSW-002-D	A point in the Napa River approximately 600 feet downstream of Discharge Point 001.

3. INFLUENT MONITORING

3.1. The Discharger shall monitor treatment plant influent at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C) (BOD) ^[2]	mg/L	C-24	1/Week
Total Suspended Solids (TSS) ^[2]	mg/L	C-24	1/Week

Footnotes:

^[1] The following flow information shall be reported in monthly self-monitoring reports:

- Daily average flow rate (MGD)
- Total monthly flow volume (MG)

^[2] The monitoring frequency may be reduced to once per quarter when not discharging to Discharge Point 001.

4. EFFLUENT MONITORING

4.1. When discharging at Discharge Point 001, the Discharger shall monitor treatment plant effluent at Monitoring Location EFF-001-D as follows:

Table E-3. Effluent Monitoring – Monitoring Locations EFF-001-D

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
BOD ^[2]	mg/L	C-24	1/Week
TSS ^[2]	mg/L	C-24	1/Week
pH ^[3]	s.u.	Continuous	Continuous/D
Oil and Grease	mg/L	Grab	1/Year
<i>E. coli</i> Bacteria ^[4, 5]	CFU/100 mL ^[6]	Grab	1/Week
Total Coliform Bacteria	MPN/100 mL ^[6]	Grab	1/Week
Turbidity ^[7]	NTU	Continuous	Continuous/D

Footnotes:

- ^[1] The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow rate (MGD)
 - Total monthly flow volume (MG)
- ^[2] BOD and TSS effluent samples shall be collected concurrently with BOD and TSS influent samples. BOD and TSS percent removal shall be reported for each calendar month in accordance with section 4.2 of this Order.
- ^[3] If pH is monitored continuously, the minimum and maximum for each day shall be reported in self-monitoring reports. If the Discharger's continuous monitoring system is offline for essential maintenance, the minimum grab sample frequency shall be 1/Day.
- ^[4] U.S. EPA Method 1603 or an equivalent method is suggested to measure culturable *E. coli*.
- ^[5] *E. coli* monitoring is only required when discharging to Discharge Point 001.
- ^[6] Results may be reported as either Most Probable Number (MPN)/100 mL if the laboratory method used provides results in MPN/100 mL or Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.
- ^[7] Turbidity monitoring is only required after Provision 6.3.5.1 is fulfilled and the upgraded plant is operational. If turbidity is monitored continuously, the arithmetic mean for each day shall be reported in self-monitoring reports. If the Facility's continuous monitoring system is offline for essential maintenance, the minimum grab sample frequency shall be 1/Day.

4.2. When discharging at Discharge Point 001, the Discharger shall monitor treatment plant effluent at Monitoring Location EFF-001 as follows:

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

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
pH ^[2, 3]	s.u.	Continuous	Continuous/D
Temperature ^[2, 3]	°C	Continuous	Continuous/D
Chlorine, Total Residual	mg/L	Continuous ^[4]	Continuous/D
Ammonia, Total ^[3]	mg/L as N	Grab	1/Quarter
Copper, Total Recoverable	µg/L	C-24	1/Month
Cyanide, Total	µg/L	Grab	1/Month
Chlorodibromomethane	µg/L	Grab	1/Year
Dichlorobromomethane	µg/L	Grab	1/Year
Total Trihalomethanes	µg/L	Grab	1/Year
Acute Toxicity ^[5]	% survival	C-24	1/Quarter

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Priority Pollutants ^[6]	µg/L	Grab	Once
Municipal and Agricultural Supply Pollutants ^[7]	µg/L	Grab	Once
River Flow-to-Effluent Flow Ratio ^[8]	-	Calculated	1/Day

Footnotes:

- ^[1] The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow rate (MGD)
 - Total monthly flow volume (MG)
- ^[2] If pH and temperature are monitored continuously, the minimum and maximum for each day shall be reported in self-monitoring reports. If the Discharger's continuous monitoring system is offline for essential maintenance, the minimum grab sample frequency shall be 1/Day.
- ^[3] Ammonia monitoring shall be performed concurrently with pH and temperature monitoring.
- ^[4] Effluent residual chlorine concentrations shall be monitored continuously or, if the Discharger's continuous monitoring system is offline for essential maintenance, once per day. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section 5.3.1.1. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.
- The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of sodium bisulfite. If Regional Water Board staff finds convincing evidence that chlorine residual exceedances are false positives, the exceedances are not violations of this Order's total residual chlorine limit.
- ^[5] Acute toxicity tests shall be performed in accordance with MRP section 5.1. Samples may be collected prior to disinfection.
- ^[6] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- ^[7] The Discharger shall monitor for the pollutants specified in Basin Plan section 3.3.22 (except for color, turbidity, odor, and radioactivity).
- ^[8] The Discharger shall calculate and report the river flow-to-effluent flow ratio once per day when discharging to the Napa River. The river flow-to-effluent flow ratio shall be calculated as the ratio of the instantaneous flow of the Napa River measured at USGS Station No. 11458000 (at 8:00 a.m. every morning) to the average effluent flow during the subsequent 24 hours (8:00 a.m. to 8:00 a.m.) measured at Monitoring Location EFF-001.

4.3. The Discharger shall monitor treatment plant effluent directed to offsite recycled water use at Monitoring Location REC-001 as follows:

Table E-5. Effluent Monitoring – Monitoring Location REC-001

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D

Footnote:

- ^[1] The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow rate (MGD)
 - Total monthly flow volume (MG)

5. TOXICITY MONITORING

5.1. Acute Toxicity

5.1.1. Compliance with the acute toxicity effluent limitations shall be evaluated at Monitoring Location EFF-001 by measuring survival of test organisms exposed

to 96-hour static renewal bioassays. Effluent samples may be collected before disinfection for toxicity tests.

- 5.1.2. Test organisms shall be fathead minnow (*Pimephales promelas*). Alternatively, the Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.
- 5.1.3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification.
- 5.1.4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger is authorized to adjust the effluent pH in order to suppress the level of unionized (free) ammonia. This adjustment shall be achieved by continuously monitoring test tank pH and automatic addition of analytical grade acid as needed, using a combination of continuous pH-sensor/analyzer and pump.
- 5.1.5. Effluent used for fish bioassays must be dechlorinated prior to testing. If biological growth in the dechlorinated effluent sample line is a potential problem, chlorinated effluent that is dechlorinated separately from the plant dechlorination process may be used for the bioassay test. The sample may be taken from final secondary or advanced secondary effluent prior to disinfection. Bioassay monitoring shall include, on a daily basis, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms is less than 70 percent), the Discharger shall initiate a new test as soon as practical and shall investigate the cause of the mortalities and report its findings in the next self-monitoring report. The Discharger shall repeat the test until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

6. RECEIVING WATER MONITORING

The Discharger shall monitor receiving waters at Monitoring Locations RSW-001, RSW-002-U, and RSW-002-D as follows:

**Table E-6. Receiving Water Monitoring – Monitoring Locations
 RSW-001, RSW-002-U, RSW-002-D**

Parameter	Unit	Sample Type	Minimum Sampling Frequency	Sampling Location
pH ^[1]	MG/MGD	Grab	2/Year	RSW-002-U and RSW-002-D ^[2]
Temperature ^[1]	°C	Grab	2/Year	RSW-002-U and RSW-002-D ^[2]
Ammonia, Total ^[1]	mg/L as N	Grab	2/Year	RSW-002-U and RSW-002-D ^[2]
Hardness	mg/L as CaCO ₃	Grab	2/Year	RSW-002-D ^[2]
Copper	µg/L	Grab	2/Year	RSW-002-D ^[2]
Priority Pollutants ^[3, 4]	µg/L	Grab	Once	RSW-001
Municipal and Agricultural Supply Pollutants ^[3, 5]	µg/L	Grab	Once	RSW-001
Standard Observations ^[6]	-	-	2/Year	RSW-002-U and RSW-002-D ^[2]

Footnotes:

- ^[1] Ammonia monitoring shall be performed on the same day as pH and temperature monitoring.
- ^[2] Downstream receiving water monitoring is required only when discharging at Discharge Point 001.
- ^[3] This monitoring may be completed in partnership with the City of Calistoga and the Town of Yountville.
- ^[4] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- ^[5] The Discharger shall monitor for the pollutants specified in Basin Plan section 3.3.22 (except for color, turbidity, odor, and radioactivity).
- ^[6] Standard Observations are specified in Attachment G section 3.2.1.

7. RECYCLED WATER MONITORING

The Discharger shall comply with the following recycled water monitoring requirements. The Executive Officer may modify these requirements to reflect any changes made to the requirements of State Water Board Order WQ 2019-0037-EXEC (Amending Monitoring and Reporting Programs for Waste Discharge Requirements, National Pollutant Discharge Elimination System Permits, Water Reclamation Requirements, Master Recycling Permits, and General Waste Discharge Requirements).

- 7.1. Influent Monitoring.** The Discharger shall monitor the monthly volume of influent to the treatment plant.
- 7.2. Production Monitoring.** The Discharger shall monitor the monthly volume for each level of treated effluent (e.g., secondary or tertiary) from the treatment plant.
- 7.3. Discharge Monitoring.** The Discharger shall monitor the monthly volumes discharged to each of the following, for each level of treated effluent (e.g., secondary or tertiary) from the treatment plant:
 - 7.3.1. Inland surface waters, specifying volumes required to maintain minimum instream flow;

- 7.3.2. Enclosed bays, estuaries and coastal lagoons, and ocean waters;
- 7.3.3. Natural systems, such as wetlands, wildlife habitats, and duck clubs, where augmentation or restoration has occurred, and that are not part of a wastewater treatment or water recycling treatment plant;
- 7.3.4. Underground injection wells, such as those classified by U.S. EPA's Underground Injection Control Program, excluding groundwater recharge via subsurface application intended to reduce seawater intrusion into a coastal aquifer with a seawater interface; and
- 7.3.5. Land, where beneficial use is not taking place, including evaporation or percolation ponds, overland flow, or spray irrigation disposal, excluding pastures or fields with harvested crops.

7.4. Reuse Monitoring. The Discharger shall monitor the following in compliance with California Code of Regulations, title 22:

- 7.4.1. Monthly volume of recycled water distributed; and
- 7.4.2. Annual volumes of treated wastewater distributed for use in each of the use categories listed below:
 - 7.4.2.1. Agricultural irrigation: pasture or crop irrigation;
 - 7.4.2.2. Landscape irrigation: irrigation of parks, greenbelts, and playgrounds; school yards; athletic fields; cemeteries; residential landscaping, common areas; commercial landscaping; industrial landscaping; and freeway, highway, and street landscaping;
 - 7.4.2.3. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses;
 - 7.4.2.4. Commercial application: commercial facilities, business use (such as laundries and office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered;
 - 7.4.2.5. Industrial application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered;
 - 7.4.2.6. Geothermal energy production: augmentation of geothermal fields;
 - 7.4.2.7. Other non-potable uses: including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and recreational impoundments;
 - 7.4.2.8. Groundwater recharge: the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of

water supply for a public water system. Includes surface or subsurface application, except for seawater intrusion barrier use;

- 7.4.2.9. Seawater intrusion barrier: groundwater recharge via subsurface application intended to reduce seawater intrusion into a coastal aquifer with a seawater interface;
- 7.4.2.10. Reservoir water augmentation: the planned placement of recycled water into a raw surface water reservoir used as a source of domestic drinking water supply for a public water system, as defined in Health and Safety Code section 116275, or into a constructed system conveying water to such a reservoir (Water Code § 13561);
- 7.4.2.11. Raw water augmentation: the planned placement of recycled water into a system of pipelines or aqueducts that delivers raw water to a drinking water treatment plant that provides water to a public water system as defined in Health and Safety Code section 116275 (Water Code § 13561); and
- 7.4.2.12. Other potable uses: both indirect and direct potable reuse other than for groundwater recharge, seawater intrusion barrier, reservoir water augmentation, or raw water augmentation.

8. REPORTING REQUIREMENTS

8.1. General Monitoring and Reporting Requirements. The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping.

8.2. Self-Monitoring Reports (SMRs)

- 8.2.1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's [California Integrated Water Quality System \(CIWQS\) Program website](http://waterboards.ca.gov/water_issues/programs/ciwqs) (waterboards.ca.gov/water_issues/programs/ciwqs). The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.
- 8.2.2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:
 - 8.2.2.1. **Monthly SMRs** — Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. Each SMR shall contain the applicable items described in Provision 6.3.2 (Effluent Characterization Study and Report) of the Order, Attachment D section 5.2, and Attachment G section 5.3. Each SMR shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

8.2.2.2. **Annual SMR** — Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the applicable items described in Provisions 6.3.2 (Effluent Characterization Study and Report) and 6.3.5.4 (Anaerobically-Digestible Material) of the Order, and Attachment G section 5.3.1.6.

8.2.3. **Specifications for Submitting SMRs to CIWQS.** The Discharger shall submit analytical results and other information using one of the following methods:

Table E-7. CIWQS Reporting

Parameter	Method of Reporting: EDF/CDF data upload	Parameter
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	-
Dissolved Oxygen, Temperature	Required for monthly maximum and minimum results only ^[1]	Discharger may use this method for all results or keep records
Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Dioxins & Furans (by U.S. EPA Method 1613), Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results ^[2]	-
Volume and Duration of Blended Discharge ^[3]	Required for all blended effluent discharges	-
Analytical Method	Not required (Discharger may select "data unavailable") ^[1]	-
Collection Time, Analysis Time	Not required	-

Footnotes:

- ^[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.
- ^[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).
- ^[3] The requirement for volume and duration of blended discharge applies only if this Order authorizes the Discharger to discharge blended effluent.

The Discharger shall arrange all reported data in a tabular format and summarize data to clearly illustrate whether the Facility is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data 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, the Discharger shall electronically submit the data in a tabular format as an attachment.

8.2.4. **Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified:

Table E-8. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous/D	Order effective date	All times
1/Hour	Order effective date	Every hour on the hour
1/Day	Order effective date	Any 24-hour period that reasonably represents a calendar day for sampling purposes (e.g., beginning at midnight and continuing through 11:59 p.m.)
1/Week 2/Week 3/Week 4/Week 5/Week	First Sunday following or on Order effective date	Sunday through Saturday
1/Month	First day of calendar month following or on Order effective date	First day of calendar month through last day of calendar month
1/Quarter	Closest January 1, April 1, July 1, or October 1 before or after Order effective date ^[1]	January 1 through March 31 July 1 through September 30 April 1 through June 30 October 1 through December 31
1/Year	Closest January 1 before or after Order effective date ^[1]	January 1 through December 31
2/Year	Closest November 1 or February 1 before or after Order effective date ^[1]	Once after the first storm of the season during the interval from November 1 through January 31, and once during the interval from February 1 through May 31
Once	Order effective date	Once during the term of the Order within 12 months prior to applying for permit reissuance

Footnote:

^[1] Monitoring performed during the previous order term may be used to satisfy monitoring required by this Order.

8.2.5. RL and MDL Reporting. The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- 8.2.5.1. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- 8.2.5.2. Sample results less than the RL, 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 purposes of data collection, the Discharger shall require the laboratory to write the estimated chemical concentration next to DNQ. 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 the laboratory considers appropriate.

- 8.2.5.3. Sample results less than the laboratory's MDL shall be reported as "Not Detected", or ND.
- 8.2.5.4. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (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 Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 8.2.6. **Compliance Determination.** Compliance with effluent limitations shall be determined using sample reporting protocols defined above, in the Fact Sheet, and in Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and, if applicable, greater than or equal to the RL.
- 8.3. Discharge Monitoring Reports (DMRs).** DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or the latest upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the [DMR website](https://waterboards.ca.gov/water_issues/programs/discharge_monitoring) (waterboards.ca.gov/water_issues/programs/discharge_monitoring).
- 8.4. Recycled Water Reports.** The Discharger shall electronically submit annual reports to the State Water Board by April 30 each year covering the previous calendar year using the [State Water Board's GeoTracker website](https://geotracker.waterboards.ca.gov) (geotracker.waterboards.ca.gov) under a site-specific global identification number. The annual report shall include the elements specified in section 7, above.

Information for setting up and using the GeoTracker system can be found in the *ESI Guide for Responsible Parties* document on the [State Water Board's website](https://waterboards.ca.gov/ust/electronic_submittal/index.html) (waterboards.ca.gov/ust/electronic_submittal/index.html).

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section 2.2 of the Order, the Regional Water Board incorporates this Fact Sheet as findings supporting the issuance of the Order.

1. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 283014001
CIWQS Place ID	258386
Discharger	City of St. Helena
Facility Name	City of St. Helena Wastewater Treatment and Reclamation Plant and its wastewater collection system
Facility Address	1 Chaix / Thomann Lane St. Helena, CA 94574 Napa County
Facility Contact, Title, and Phone	Eric Sanders, Chief Plant Operator, (707) 967-2878
Authorized Person to Sign and Submit Reports	Same as Facility Contact
Mailing Address	1572 Railroad Avenue, St. Helena, CA 94574
Billing Address	Same as Mailing Address
Facility Type	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Water Quality Threat	2
Complexity	B
Pretreatment Program	No
Recycling Requirements	Regional Water Board Order 87-090; State Water Board Order WQ 2016-0068-DDW
Mercury and PCBs Requirements	NPDES Permit CA0038849
Nutrients Requirements	None
Facility Permitted Flow	0.50 million gallons per day (MGD)
Facility Design Flow	Current: 0.50 MGD (average dry weather design flow); 2.8 MGD (wet weather capacity) After Upgrades: 0.50 MGD (average dry weather design flow); 1.5 MGD (wet weather capacity)
Watershed	San Pablo Basin
Receiving Water	Napa River
Receiving Water Type	Freshwater

- 1.1. The City of St. Helena (Discharger) owns and operates the City of St. Helena Wastewater Treatment and Reclamation Plant and its associated wastewater collection system (collectively, Facility). The plant provides secondary treatment of wastewater collected from its service area and discharges treated effluent to the Napa River when plant influent exceeds the capacity of the recycled water distribution and storage system.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and State laws, regulations, plans, and policies are held to be equivalent to references to the Discharger herein.

- 1.2. The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit CA0038016. The Discharger was previously subject to Order R2-2016-0003 (previous order). The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and NPDES permit on May 29, 2020.
- 1.3. The Discharger is authorized to discharge subject to the WDRs in this Order at the discharge locations described in Table 1 of this Order. Regulations in 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, this Order limits the effective period for the discharge authorization. Pursuant to 40 C.F.R. section 122.6(d) and California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all requirements for continuation of expired permits.
- 1.4. Order R2-2016-0008 amended the previous order to provide for an alternate monitoring program and remains in effect with this Order. The discharge is also regulated under NPDES Permit CA0038849, which establishes requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges to San Francisco Bay. This Order does not affect that permit.
- 1.5. When applicable, State law requires dischargers to file a petition with the State Water Resources Control Board (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 a watercourse. The State Water Board retains separate jurisdictional authority to enforce such requirements under Water Code section 1211. This is not an NPDES permit requirement.

2. FACILITY DESCRIPTION

This section provides information about existing Facility operations and planned upgrades that the Discharger will complete during the permit term to comply with the effluent limitations listed in Table 2 of this Order.

2.1. Wastewater and Biosolids Treatment

2.1.1. **Service Area and Collection System.** The plant provides secondary treatment of domestic and commercial wastewater from the City of St. Helena. Its estimated service area population is approximately 6,000 people. The City owns and operates 18.8 miles of gravity sewer lines, 1.0 miles of force main sewer lines, 1.0 miles of laterals, and two pump stations.

2.1.2. Wastewater Treatment.

2.1.2.1. **Existing.** The plant's average dry weather treatment capacity is 0.50 MGD and its peak wet weather capacity is 2.8 MGD.

The treatment process consists of solids grinding using a comminutor, biological treatment through a series of ponds (Ponds 1A through 3), polishing and flow equalization (Pond 4), and chlorine disinfection. Treated wastewater flows to the final storage pond (Pond 5), from which it may either be recycled or dechlorinated with ascorbic acid and discharged to the Napa River. The table below describes the sizes of these ponds:

Table F-2. Biological Treatment Ponds

Pond	Type	Surface Area (acres)	Depth (feet)	Storage Capacity (million gallons)
1A	Facultative with Digester	2.9	10	8.1
1B	Facultative with Digester	2.1	14	7.5
2	High-Rate (Aeration)	5.1	3.0	4.0
3	Algae Sedimentation	2.5	9.0	6.3
4	Polishing and Storage	3.0	11.5	9.8
5	Polishing and Storage	6.7	13	24.6

2.1.2.2. **Planned.** The Discharger intends to upgrade the plant during the Order term. The upgraded plant will be designed to treat the same average dry weather flow as is currently permitted (0.50 MGD) and to treat a peak wet weather flow of 1.5 MGD. Treatment is expected to include a headworks with coarse screening; solids grinding using the existing comminutor; primary flow equalization; secondary and tertiary treatment via a packaged membrane bioreactor system, consisting of activated sludge biological process basins and submerged membrane filtration trains; and UV disinfection. The ponds that currently provide biological treatment and polishing will be modified for use as flow equalization and storage basins. Tertiary-treated effluent will be dosed with chlorine and routed to Pond 5 for storage prior to discharge or reclamation.

2.1.3. Sludge and Biosolids Management.

2.1.3.1. **Existing.** The Discharger does not remove solids from its ponds on a regular basis. Most of the solids settle out in Ponds 1A and 1B, where they are

anaerobically digested at the bottom of the pond. When solids accumulate to the point where treatment becomes ineffective, the Discharger drains Ponds 1A and 1B to excavate the solids.

- 2.1.3.2. **Planned.** Waste sludge from the membrane bioreactor tanks will be pumped to a wet sludge storage tank that will feed into a new onsite dewatering unit. After dewatering, solids will be hauled offsite.
- 2.1.4. **Stormwater Management.** Runoff from paved areas at the plant is directed to an onsite bioswale, where it infiltrates to soil. During the plant upgrade, the Discharger will construct a bermed perimeter around the new treatment units that will direct additional runoff to a manhole and return it to the plant headworks. The Discharger maintains coverage for its stormwater discharges through enrollment in the Phase II Small Municipal Separate Storm Sewer System Permit (Small MS4 Permit), NPDES General Permit CAS000004. As required by the Small MS4 Permit, the Discharger has developed and maintains a Stormwater Pollution Prevention Plan.
- 2.1.5. **Recycled Water.** The Discharger's water recycling activities are currently covered under Regional Water Board Order 87-090. During this Order's term, the Discharger will be transferred to the State Water Board's *Water Reclamation Requirements for Recycled Water Use* (Order WQ 2016-0068-DDW). The Discharger will receive written notification regarding when this change will take effect.
- 2.1.5.1. **Existing.** Except when discharging to the Napa River, the plant produces secondary-treated wastewater for reclamation. The Discharger uses treated effluent to irrigate roughly 80 acres of fields adjacent to the plant. Approximately two percent of treated effluent is used to irrigate a small redwood tree farm and to grow mosquito fish.
- 2.1.5.2. **Planned.** The upgraded plant will be designed to achieve the disinfected tertiary treatment standards of California Code of Regulations, Title 22, Division 4, section 60301.230. During this Order's term, the Discharger plans to continue applying treated effluent to its onsite fields and to expand its redwood tree farm. In the longer term, the Discharger hopes to attract local recycled water customers willing to connect to a proposed recycled water pipeline.
- 2.1.6 **Planned Upgrade Schedule.** As discussed further in Fact Sheet section 2.4.1, Cease and Desist Order (CDO) R2-2016-0004 imposed a time schedule for the Discharger to implement advanced secondary treatment. The table below summarizes the remaining tasks and when the Discharger expects to complete them. Some of these dates are later than those specified in CDO R2-2016-0004. The schedule below is included for informational purposes only. It does not supersede the requirements of CDO R2-2016-0004.

Table F-3. Planned Upgrades Schedule

Description	Anticipated Completion Date
Submit documentation of the completion of Final Workplan implementation and begin operation of the new or modified treatment system. (CDO Table 3, task f)	August 5, 2022
Submit a report evaluating the effectiveness of the new or modified treatment system and whether it is likely to meet the requirements of the NPDES permit. Identify and implement measures to ensure compliance. (CDO Table 3, task g)	October 6, 2022
Achieve full compliance with the 2016 Permit effluent limits listed in CDO Table 1. (CDO Table 3, task h)	March 1, 2023
Submit Quarterly Groundwater Monitoring Reports providing the groundwater monitoring results of the previous quarter for the parameters listed in Section 5.2 of the City's August 31, 2017, <i>Monitoring Well Installation and Monitoring Network Workplan</i> .	Every January 1, April 1, July 1, and October 1 each year

2.2. Discharge Points and Receiving Waters. When the Discharger's irrigation fields are saturated and the river flow-to-effluent flow ratio is at least 19:1, treated effluent is dechlorinated and discharged to the Napa River via a shallow-water outfall (Discharge Point 001).

2.3. Previous Requirements and Monitoring Data. The table below presents the previous order's effluent limitations and representative monitoring data from the previous order term (March 2016 – July 2020):

Table F-4. Previous Effluent Limitations and Monitoring Data

Parameter	Unit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Other Limit	Long-Term Average	Highest Daily Value
Biochemical Oxygen Demand (5 day @ 20°C) (BOD)	mg/L	15 ^[2]	25 ^[2]	-	-	21	>82
Total Suspended Solids (TSS)	mg/L	15 ^[1]	20 ^[1]	-	-	22	68
BOD percent removal	%	85 (minimum)	-	-	-	79	17 ^[2]
TSS percent removal	%	85 (minimum)	-	-	-	79	44 ^[2]
Oil and Grease	mg/L	10	-	20	-	-	4.8
pH	s.u.	-	-	-	6.5 – 8.5 ^[3]	-	6.1 – 9.9 ^[4,5]
Chlorine, Total Residual	mg/L	-	-	-	0.0 ^[6]	-	4.1
Ammonia, Total	mg/L as N	16	-	39	-	-	7.4
Copper, Total Recoverable	µg/L	8.3	-	17	-	-	11
Cyanide, Total	µg/L	15	-	30	-	-	130

Parameter	Unit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Other Limit	Long-Term Average	Highest Daily Value
Total Coliform	MPN/100 mL	-	23 ^[7]	240	-	-	>1,600
Acute Toxicity	% survival	-	-	-	Not less than 70% (Single-Sample Maximum), Not less than 90% (Three-Sample Median)	99	95 ^[8]

Footnotes:

- ^[1] The interim BOD and TSS limitations were 30 mg/L (average monthly) and 45 mg/L (average weekly) implemented by Cease and Desist Order R2-2016-0004 applied during the previous order term.
- ^[2] Lowest percent removal value on a monthly basis.
- ^[3] Instantaneous minimum and instantaneous maximum.
- ^[4] Range of lowest to highest pH values.
- ^[5] The Discharger did not violate the previous order's instantaneous maximum pH effluent limitation because the highest pH value lasted for less than 60 minutes.
- ^[6] Instantaneous maximum.
- ^[7] This total coliform bacteria limitation was expressed as a five-sample median.
- ^[8] Lowest percent survival.

2.4. Compliance Summary

2.4.1. **Treatment Plant.** The Discharger violated its numeric effluent limitations 42 times during the previous order term.

Table F-5. Previous Effluent Limitations and Monitoring Data

Date of Violation	Violation	Units	Effluent Limitation	Reported Value
3/7/2016	pH (Instantaneous Minimum)	standard units	6.5	6.4
3/9/2016	pH (Instantaneous Minimum)	standard units	6.5	6.4
3/10/2016	pH (Instantaneous Minimum)	standard units	6.5	6.3
3/14/2016	pH (Instantaneous Minimum)	standard units	6.5	6.1
3/15/2016	pH (Instantaneous Minimum)	standard units	6.5	6.2
3/16/2016	pH (Instantaneous Minimum)	standard units	6.5	6.2
3/17/2016	pH (Instantaneous Minimum)	standard units	6.5	6.4
1/25/2017	Cyanide, Total (Daily Maximum)	µg/L	30	90
1/31/2017	Cyanide, Total (Monthly Average)	µg/L	15	53
1/31/2017	BOD, Percent Removal (Monthly Average)	%	85	78

Date of Violation	Violation	Units	Effluent Limitation	Reported Value
2/4/2017	Cyanide, Total (Daily Maximum)	µg/L	30	50
2/28/2017	Cyanide, Total (Daily Maximum)	µg/L	30	130
2/28/2017	Cyanide, Total (Monthly Average)	µg/L	15	90
2/28/2017	BOD, Percent Removal (Monthly Average)	%	85	81
3/2/2017	Cyanide, Total (Daily Maximum)	µg/L	30	130
3/31/2017	Cyanide, Total (Monthly Average)	µg/L	15	130
2/20/2019	Chlorine, Total Residual (Instantaneous Maximum)	mg/L	0.0	4.1
2/23/2019	TSS (Weekly Average)	mg/L	20	31
2/28/2019	BOD (Monthly Average)	mg/L	15	20
2/28/2019	TSS (Weekly Average)	mg/L	20	58
2/28/2019	TSS (Monthly Average)	mg/L	15	47
2/28/2019	Copper, Total (Monthly Average)	µg/L	8.3	17
2/28/2019	BOD, Percent Removal (Monthly Average)	%	85	78
2/28/2019	TSS, Percent Removal (Monthly Average)	%	85	50
3/5/2019	Copper, Total (Daily Maximum)	µg/L	17	42
3/7/2019	Total Coliform (Daily Maximum)	MPN/100 mL	240	>1,600
3/9/2019	BOD (Weekly Average)	mg/L	25	31
3/9/2019	TSS (Weekly Average)	mg/L	20	33
3/16/2019	TSS (Weekly Average)	mg/L	20	28
3/23/2019	BOD (Weekly Average)	mg/L	25	43
3/30/2019	BOD (Weekly Average)	mg/L	25	63
3/31/2019	BOD (Monthly Average)	mg/L	15	40
3/31/2019	TSS (Monthly Average)	mg/L	15	28
3/31/2019	Copper, Total (Monthly Average)	µg/L	8.3	42

Date of Violation	Violation	Units	Effluent Limitation	Reported Value
3/31/2019	Cyanide, Total (Monthly Average)	µg/L	15	20
3/31/2019	BOD, Percent Removal (Monthly Average)	%	85	78
3/31/2019	TSS, Percent Removal (Monthly Average)	%	85	73
12/21/2019	TSS (Weekly Average)	mg/L	20	25
12/28/2019	TSS (Weekly Average)	mg/L	20	31
12/31/2019	Copper, Total (Monthly Average)	µg/L	8.3	15
12/31/2019	TSS, Percent Removal (Monthly Average)	%	85	77
2/29/2020	TSS (Monthly Average)	mg/L	15	19

Of the violations listed above, 14 were exceedances of the BOD and TSS weekly and monthly average effluent limits. The planned upgrades described in Fact Sheet section 2.1.2.2 will include new headworks screening and a new membrane bioreactor treatment system, both of which are expected to significantly improve BOD and TSS removal when compared to the existing pond system.

These violations were anticipated when the previous order was adopted. To qualify for an exception to Basin Plan Discharge Prohibition 1 (see Fact Sheet section 4.1.2), the previous order imposed more stringent BOD and TSS requirements associated with advanced secondary treatment to ensure a level of environmental protection equivalent to complying with Basin Plan Discharge Prohibition 1 when discharging to the Napa River. Because the Discharger was unable to immediately comply with the more stringent limits, the Regional Water Board adopted CDO R2-2016-0004 and imposed a time schedule for compliance. The Discharger has fallen behind the CDO time schedule, partly because of delays related to the Napa County wildfires in fall 2017, and partly due to concerns about high nutrient levels in the groundwater underlying the Discharger’s spray fields (further described below in this section), which necessitated that the Discharger incorporate nutrient removal into its project design. Despite these setbacks, the Discharger has made substantial progress and expects its advanced secondary treatment system to begin operating in spring 2023 (see Fact Sheet Table F-3).

Of the violations listed above, six were exceedances of the average BOD and TSS percent removal requirements. The Discharger attributed these to excessive inflow and infiltration during periods of sustained wet weather. Through the City’s Sewer System Management Plan, the Discharger is working to repair and replace sections of its collection system that were identified as

concerns during its most recent collection system evaluation and prioritization. The planned plant upgrades are also expected to improve the plant's BOD and TSS removal capabilities.

The cyanide and residual chlorine violations in 2017 and 2019 were likely caused by improper ascorbic acid dosing for dechlorination. Because no cyanide was detected in influent samples collected during the same period, the Discharger believes nitrogen-containing compounds in its disinfected effluent may have reacted with the dechlorination chemical to form cyanide. The February 2019 chlorine residual violation, which lasted approximately five minutes, resulted from insufficient manual dechlorinating chemical dosing prior to discharge. The Discharger has since refined its ascorbic acid dosing procedures and plans to significantly reduce its use of chlorinating and dechlorinating chemicals when it completes the plant upgrades, which will include a new UV disinfection system.

The Discharger attributed the March 2019 total coliform exceedance to a disinfectant feed pump failure caused by high back pressure in the pump's supply line. To reduce the likelihood of a similar event occurring, the Discharger installed pressure relief valves and new feed pumps with a higher pressure capacity.

The cause of the March 2016 pH violations remains unknown, although the Discharger detected unusually low influent pH levels during the same period. To better control effluent pH levels, the Discharger installed flow-paced chlorine and ascorbic acid dosing systems. The Discharger was similarly unable to confirm the source of its 2019 copper exceedances. The multiple copper violations were not immediately recognized because the Discharger's contract laboratory initially analyzed the copper samples with insufficiently sensitive methods. No similar events were observed during the remainder of the order term.

The Regional Water Board assessed mandatory minimum penalties for all violations through March 2019, with the exception of the BOD and TSS violations addressed by CDO R2-2016-0004. Enforcement for the more recent violations is pending.

During the previous order term, the Discharger also violated its water reclamation requirements (Regional Water Board Order 87-090). The Discharger applied reclaimed water to its spray fields at greater than agronomic rates, failed to notify the Regional Water Board of the violation, and did not submit a corrective action plan. In response, Regional Water Board staff issued a Notice of Violation in November 2016 requiring the Discharger to evaluate its current reclamation practices and their impacts on groundwater quality. The Discharger has since planted native grasses to improve nutrient uptake and has developed a groundwater monitoring program to assess how land application of its treated effluent, and particularly nutrient loading, affects local

groundwater quality. In addition to these ongoing efforts, the Discharger’s planned membrane bioreactor treatment system will provide nutrient removal and improve the quality of treated effluent applied to land.

2.4.2. Collection System. The table below summarizes the Discharger’s Category 1 sanitary sewer overflow (SSO) rates per 100 miles of collection system for the last five years, along with the primary causes of these discharges. Category 1 SSOs are those that reach waters of the United States and thus may violate Prohibition 3.6 of this Order.

Table F-6. Collection System and Category 1 SSO Rates (SSO per 100 miles)

(Values based on CIWQS data analysis completed in July 2020) ^[1]

	Length (miles) ^[2]	Average Pipe Age (years) ^[3]	2015	2016	2017	2018	2019
Discharger	20	36	0	0	45	10	40
San Francisco Bay Region	17,700	46	0.68	1.2	1.7	0.71	1.4
State of California	10,300	44	0.39	0.48	0.69	0.40	0.58

Footnotes:

^[1] The State Water Board’s *Enrollees’s Guide to the SSO Database* defines “Total number of SSOs per 100 miles of Sewer” as “...the number of SSOs, for which the reporting enrollee is responsible, for every 100 miles of pipe or sewer lines in an enrollee’s sanitary sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems.”

^[2] Lengths shown are based on 2020 data.

^[3] The average pipe age for the State of California is estimated based on the percentages of piping constructed during each decade as reported by enrollees under State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC.

The above SSO rates are normalized relative to a distance of 100 miles. The Discharger’s annual SSO rates vary significantly, probably due to the relatively short length of the collection system. At its peak in 2017, there were nine Category 1 SSOs, all of which were attributed to excessive inflow and infiltration during periods of sustained precipitation.

The Discharger regularly completes asset management tasks as part of its Sewer System Management Plan (SSMP), which it last updated in 2019. The Discharger cleans hot spots bi-weekly and performs video inspections as needed. Approximately 80 percent of its current maintenance tasks are corrective, while the other 20 percent are preventative. The City has a goal of reducing the percentage of corrective maintenance tasks in the future and aims to replace one percent of its sewer mains each year. The Discharger’s Sanitary Sewer System Standards require a sewer lateral inspection for all new connections. The City annually spends approximately \$1,000,000 on operations and maintenance of the collection system.

2.5. Sea Level Rise. Sea level rise does not threaten the Facility, which is located approximately 40 miles upstream of San Pablo Bay and discharges to the non-tidal portion of the Napa River.

3. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

3.1. Legal Authorities. This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by the U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It serves as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 1 subject to the WDRs in this Order.

3.2. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resources Code division 13, chapter 3 (commencing with § 21100).

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

3.3.1. Water Quality Control Plan. The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution 88-63, which established 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 Napa River are as follows:

Table F-7. Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
001	Napa River	Agricultural Supply (AGR) Municipal and Domestic Supply (MUN) Groundwater Recharge (GWR) Commercial and Sport Fishing (COMM) Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

- 3.3.2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** The NTR and CTR contain federal water quality criteria for priority pollutants. U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 NTR criteria apply in California. U.S. EPA adopted the CTR on May 18, 2000. The CTR promulgated new toxics criteria for California and incorporated the NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001.
- 3.3.3. **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 establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established through the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. Requirements of this Order implement the SIP.
- 3.3.4. **Bacteria Objectives.** The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* on August 7, 2018, and it became effective on March 22, 2019. This plan establishes *Escherichia coli* bacteria water quality objectives and related implementation provisions for discharges to freshwaters that support the water contact recreation beneficial use.
- 3.3.5. **Mercury Provisions.** On May 2, 2017, the State Water Board adopted Resolution 2017-0027, which approved *Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Mercury Provisions), thereby establishing water quality objectives for mercury in most State waters. The Mercury Provisions establish mercury fish tissue water quality objectives based on beneficial uses and translate those objectives into mercury water column criteria. The Sport Fishing and Prey Fish water quality objectives apply to the Napa River and supersede the four-day average freshwater mercury objective in Basin Plan Table 3-4. Requirements of this Order implement the Mercury Provisions.
- 3.3.6. **Domestic Water Quality.** In accordance with Water Code section 106.3, it is the policy of the State of California is that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order advances that policy by requiring discharges to meet maximum contaminant levels (MCLs) designed to protect human health and ensure that water is safe for domestic use. In addition, the

Order increases the accessibility and availability of safe drinking water by requiring the Discharger to maximize deliveries of recycled water, which offset use of drinking water for irrigation and dust control, while supplementing and diversifying the water supply.

- 3.3.7. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which 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 Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
- 3.3.8. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 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 be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
- 3.3.9. **Endangered Species Act Requirements.** This Order does not authorize any 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 §§ 2050 to 2097) or Federal Endangered Species Act (16 U.S.C.A. §§ 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, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.
- 3.3.10. **Sewage Sludge and Biosolids.** U.S. EPA administers 40 C.F.R. part 503, Standards for the Use or Disposal of Sewage Sludge, which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting applicable requirements of 40 C.F.R. part 503.
- 3.4. Impaired Water Bodies on CWA section 303(d) List.** On April 6, 2018, U.S. EPA approved a revised list of impaired waters pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for

pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for nonpoint sources and are established to achieve water quality standards.

The non-tidal portion of the Napa River is listed as impaired by nutrients, pathogens, and sediment. San Pablo Bay, to which the Napa River is tributary, is listed for chlordane, DDT, dieldrin, dioxins and furans, invasive species, mercury, PCBs, and selenium.

On February 29, 2008, U.S. EPA approved a TMDL for pathogens in the Napa River. This Order's *E. coli* and total coliform effluent limitations are more stringent than the Napa River pathogens TMDL requires. On January 21, 2011, U.S. EPA approved a TMDL for sediment in the Napa River. This Order's TSS effluent limitations are consistent with the Napa River sediment TMDL (see Basin Plan Table 7.8-4-3b, footnote a).

The discharge is a potential source of nutrients to the Napa River but is not expected to be a significant contributor to the impairment. The Napa River was listed as impaired for nutrients in the 1970s because of high nutrient levels and excessive algae growth, but water quality has substantially improved as a result of changes in agricultural practices in the watershed and reduced nutrient loads from wastewater treatment plants. In the 1980s, the Regional Water Board started prohibiting wastewater discharges to the river during the dry season, when flows are naturally low because of the summer droughts in this Mediterranean climate. While the discharge prohibition in this Order does not apply exclusively to the dry season, it serves the same function because it limits discharge to the river when there is recycled water demand, which correlates closely with the dry season. Also, the three treatment plants discharging to the non-tidal portion of the Napa River (Calistoga, St. Helena, and Yountville) have improved their treatment processes. Receiving water nutrient concentrations (i.e., nitrate, nitrite, and ammonia) and other indicators (i.e., algae and chlorophyll a) are now below levels of concern. On February 12, 2014, the Regional Water Board approved a proposal to remove the nutrients listing, subject to State Water Board and U.S. EPA approval.

On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco Bay (including San Pablo Bay). On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The TMDLs for mercury and PCBs apply to this discharge and are implemented under NPDES Permit CA0038849. On August 23, 2016, U.S. EPA approved a TMDL for selenium in North San Francisco Bay, which includes San Pablo Bay. The selenium TMDL does not require effluent limits for municipal wastewater dischargers because these discharges have an insignificant impact on North San Francisco Bay water quality.

As shown in Fact Sheet section 4.3.3, the discharge is not a significant source of chlordane, DDT, or dieldrin because these pollutants have not been detected in the discharge. The discharge is not a source of invasive species because it is

disinfected. The discharge is an insignificant source of dioxins and furans because discharge concentrations of these pollutants are consistently below water quality objectives.

4. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into 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: 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 to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of receiving waters.

4.1. Discharge Prohibitions

4.1.1. Prohibitions in this Order

- 4.1.1.1. **Discharge Prohibition 3.1 (No discharge other than as described):** This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.
- 4.1.1.2. **Discharge Prohibition 3.2 (No discharge without at least 19:1 river-to-effluent ratio):** This prohibition ensures that the discharge does not fully use the assimilative capacity of the Napa River, reserving sufficient assimilative capacity for the other permitted wastewater discharges to this segment of the Napa River (i.e., the City of Calistoga and the Town of Yountville). Fact Sheet Appendix F-1 (page F-50) provides the detailed calculations underlying the 19:1 ratio.
- 4.1.1.3. **Discharge Prohibition 3.3 (No bypass to waters of the United States):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D section 1.7).
- 4.1.1.4. **Discharge Prohibition 3.4 (No average dry weather flow above design capacity):** This Order prohibits average dry weather influent flows greater than the plant's average dry weather flow design treatment capacity (i.e., its historical and tested treatment reliability) of 0.50 MGD. Exceeding this flow could result in lower treatment reliability and greater potential to violate water quality requirements.
- 4.1.1.5. **Discharge Prohibition 3.5 (No sanitary sewer overflows to waters of the United States):** Basin Plan Table 4-1, Discharge Prohibition 15, and the

CWA prohibit the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly-owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards. A sanitary sewer overflow that results in the discharge to waters of the United States of raw sewage or wastewater not meeting this Order's effluent limitations is therefore prohibited under the Basin Plan and CWA.

- 4.1.1.6. **Discharge Prohibition 3.6 (No discharge except when plant inflow exceeds recycled water distribution and storage system capacity):** This prohibition, applicable when it is feasible to recycle all wastewater flow, is based on Basin Plan Discharge Prohibition 1, which prohibits discharge into any non-tidal water, including this segment of the Napa River. It is feasible to eliminate the discharge when there is demand for recycled water (see Fact Sheet section 4.1.2 below). The Discharger has demonstrated that discharges to the Napa River are unnecessary except when plant inflow exceeds the capacity of the recycled water distribution and storage system.
- 4.1.2. **Basin Plan Discharge Prohibition 1.** Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges to any non-tidal water. Discharge Point 001 discharges to the non-tidal portion of the Napa River. Basin Plan Table 4-1 further prohibits discharges that do not receive a minimum initial dilution of 10:1. Discharge Point 001 is not equipped with a diffuser to ensure instantaneous mixing and therefore does not meet the minimum initial dilution requirement. Discharge Prohibition 3.3 of this Order implements Basin Plan Discharge Prohibition 1 when it is feasible to not discharge (i.e., when the treated wastewater can supply recycled water demand or be stored). In accordance with Basin Plan section 4.2, which provides for exceptions to Basin Plan Discharge Prohibition 1, this Order grants an exception when not discharging is infeasible. The circumstances under which Basin Plan section 4.2 allows for exceptions are as follows:

- An inordinate burden would be placed on the Discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means;
- A discharge is approved as part of a reclamation project;
- Net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater cleanup project.

The Basin Plan further states:

In reviewing requests for exceptions, the Water Board will consider the reliability of the discharger's system in preventing inadequately

treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

This Order grants an exception to Basin Plan Discharge Prohibition 1 for the following reasons:

- Prohibiting all discharges from Discharge Point 001 would place an inordinate burden on the City because there is no feasible alternative to discharge when the irrigation fields are saturated during wet weather. Despite the City’s substantial onsite storage, the volume of treated wastewater produced during wet weather months may exceed the capacity of the irrigation fields and storage ponds. During the previous order term, the number of days that the plant routed flow to the Napa River ranged from 0 days during the 2017-2018 discharge season to 50 days during the unusually wet 2016-2017 discharge season.
- The Discharger is providing an equivalent level of environmental protection by completing the tasks that Order R2-2016-0004 requires, which include providing advanced secondary treatment. Specifically, the BOD and TSS effluent limits in Table 2 of this Order are more stringent than the secondary treatment standards and are comparable to those of most other facilities operating advanced secondary treatment systems in the region.
- While the Discharger’s treatment system has historically been unreliable, the Discharger has completed interim repairs and process improvements, as described above, that have controlled exceedances of certain constituents, such as chlorine and cyanide. Construction of new treatment facilities over the next permit term will not only improve treatment reliability, but will improve the level of treatment overall.

4.2. Technology-Based Effluent Limitations

4.2.1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44 require that permits include conditions meeting technology-based requirements, at a minimum, and any more stringent effluent limitations necessary to meet water quality standards. The discharges authorized by this Order must meet minimum federal technology-based requirements based on the secondary treatment standards at 40 C.F.R. section 133 as summarized below. Basin Plan Table 4-2 contains additional requirements for certain pollutants.

Table F-8. Secondary Treatment Standards

Parameter	Monthly Average	Weekly Average
Biochemical Oxygen Demand (BOD) ^[1,2]	30 mg/L	45 mg/L
Carbonaceous Biochemical Oxygen Demand (CBOD) ^[1,2]	25 mg/L	40 mg/L

Parameter	Monthly Average	Weekly Average
Total Suspended Solids TSS ^[2]	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

Footnotes:

^[1] CBOD effluent limitations may be substituted for BOD limitations.

^[2] The monthly average percent removal, by concentration, is not to be less than 85 percent.

4.2.2. Technology-Based Effluent Limitations

4.2.2.1. **BOD and TSS.** The BOD and TSS effluent limitations, excluding the 85 percent removal requirements, are more stringent than the secondary treatment standards. The 85 percent removal requirements are based on the secondary treatment standards and Basin Plan Table 4-2. These limitations will be technologically feasible once the Discharger completes its planned upgrade to an advanced secondary treatment system. They are also similar to the limits for other shallow-water discharges that demonstrate a level of water quality protection equivalent to complying with Basin Plan Prohibition 1 (see Fact Sheet section 4.2 above).

The TSS limits also comply with the Napa River sediment TMDL (Basin Plan section 7.8.4). Basin Plan Table 7.8.4-3b (footnote a) states, “For wastewater treatment plant discharges, compliance with [an] existing permit effluent limit of 30 mg/L of TSS is consistent with these wasteload allocations.”

4.2.2.2. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.

4.2.2.3. **pH.** The pH effluent limitations are based on the secondary treatment standards and Basin Plan Table 4-2.

4.2.2.4. **Total Residual Chlorine.** The total residual chlorine effluent limitation is based on Basin Plan Table 4-2. The Monitoring and Reporting Program (MRP, Attachment E) provides an allowance for determining false positives when using continuous devices based on the fact that continuous instruments occasionally have anomalous spikes, and it is chemically improbable to have free chlorine in the presence of sodium bisulfite. The allowance for using only on-the-hour measurements for mandatory minimum penalty assessment purposes under Water Code section 13385.1 is based on a 2004 strategy developed between the Regional Water Board and the Bay Area Clean Water Agencies.

4.2.2.5. **Total Coliform Bacteria.** The total coliform effluent limitations are based on Basin Plan Table 4-2A, which requires total coliform effluent limitations for discharges to receiving waters designated as freshwater. Footnote (d) of Table 4-2A allows exceptions to the limits listed in Table 4-2A as long as beneficial uses are not compromised and discharges do not exceed a five-sample median of 23 MPN/100 mL nor a maximum of 240 MPN/100 mL during dry weather.

The total coliform limits in this Order comply with the Napa River pathogens TMDL. Basin Plan section 7.8.2 and Table 7.8.2-4 require a five-sample median less than 240 CFU/100 mL and a single-sample maximum of 10,000 CFU/100 mL.

4.3. Water Quality-Based Effluent Limitations

4.3.1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require permits to include limitations more stringent than federal technology-based requirements where necessary to achieve water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a 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, water quality-based effluent limitations (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 a narrative criterion, supplemented with relevant information. The process for determining reasonable potential and calculating WQBELs when necessary is intended to achieve applicable water quality objectives and criteria, and thereby protect designated beneficial uses of receiving waters.

4.3.2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point 001 discharges to the Napa River. Fact Sheet section 3.3.1 identifies the beneficial uses of the Napa River. Water quality criteria and objectives to protect these beneficial uses are described below.

4.3.2.1. **Basin Plan Objectives.** The Basin Plan specifies numerous water quality objectives, including numeric objectives for 10 priority pollutants, un-ionized ammonia, and temperature, and narrative objectives for bioaccumulation and toxicity. Because the Napa River supports the municipal and domestic supply (MUN) and agricultural supply (AGR) beneficial uses, the drinking water standards (i.e., maximum contaminant levels) and agricultural supply standards specified in Basin Plan section 3.3.22 also apply as water quality objectives.

4.3.2.1.1. **Dioxin-TEQ.** The narrative bioaccumulation objective (Basin Plan § 3.3.2) states, “Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on

aquatic organisms, wildlife, and human health will be considered.” Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan’s narrative bioaccumulation water quality objective applies to these pollutants. Elevated levels of dioxins and furans in San Francisco Bay fish tissue demonstrate that the narrative bioaccumulation water quality objective is not being met. U.S. EPA has therefore placed San Pablo Bay on its 303(d) list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

When the CTR was promulgated, U.S. EPA stated its support for the regulation of dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs). U.S. EPA stated, “For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” (Fed. Reg. Vol. 65, No. 97, pages 31695-31696, May 18, 2000). This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization developed in 2005, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. § 132, Appendix F) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD). Although the 2005 World Health Organization scheme includes TEFs for dioxin-like PCBs, they are not included in this Order’s TEQ scheme. The CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

The CTR establishes a numeric water quality objective for 2,3,7,8-TCDD of 1.3×10^{-8} µg/L for the protection of human health when water and aquatic organisms are consumed. This CTR criterion is used as a criterion for dioxin-TEQ because dioxin-TEQ represents a toxicity-weighted concentration equivalent to 2,3,7,8 TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion.

4.3.2.1.2. **Temperature.** The Napa River supports warm water and cold water habitat beneficial uses; therefore, the temperature water quality objectives in Basin Plan section 3.3.17 apply:

- The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

- The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F [degrees Fahrenheit] (2.8°C [degrees Celsius]) above natural receiving water temperature.
- 4.3.2.1.3. **Toxicity.** The narrative toxicity objective (Basin Plan section 3.3.18) states, “All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms... Attainment of this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, or toxicity tests... or other methods selected by the Water Board.”
- 4.3.2.2. **CTR Criteria.** The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of “water and organisms” and others are for consumption of “organisms only.” The criteria applicable to “water and organisms” apply to the Napa River because it is a potential source of drinking water.
- 4.3.2.3. **NTR Criteria.** The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to the Napa River.
- 4.3.2.4. **Bacteria Objectives.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* establishes *E. coli* bacteria water quality objectives to limit cases of gastrointestinal illness from water contact recreation. The *E. coli* bacteria objectives apply to freshwater.
- 4.3.2.5. **Mercury Objectives.** The Mercury Provisions specify water column criteria for mercury depending on water body type and beneficial uses. The Napa River is a flowing water body that supports cold freshwater habitat; warm freshwater habitat; preservation of rare, threatened, or endangered species; and wildlife habitat beneficial uses. Mercury Provisions section IV.D.2.b, Table 1, establishes an annual average total mercury criterion of 0.012 µg/L for the Napa River.
- 4.3.2.6. **Receiving Water Salinity.** Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally-influenced freshwaters that support estuarine beneficial

uses, the water quality objectives are the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

The *Collaborative Napa River Receiving Water Evaluation* (2003) found that Napa River salinity in all samples upstream and downstream of the discharge falls below 1 part per thousand, indicating a freshwater environment. Therefore, the reasonable potential analysis and WQBELs in this Order are based on freshwater quality criteria and objectives.

4.3.2.7. **Receiving Water Hardness.** Ambient hardness data were used to derive freshwater quality objectives that are hardness-dependent. The Discharger collected 7 receiving water samples at Monitoring Location RSW-002 from March 2016 through July 2020. The minimum observed hardness of 56 mg/L as calcium carbonate (CaCO₃) was used to determine the water quality objectives.

4.3.2.8. **Metals Translators.** Regulations at 40 C.F.R. section 122.45(c), require effluent limitations for metals to be expressed as total recoverable metal. Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, total suspended solids, and organic carbon may affect the form of metal (dissolved, non-filterable, or otherwise) present and therefore available to cause toxicity. In general, dissolved metals are more available and more toxic to aquatic life than other forms. Site-specific translators can account for site-specific conditions, thereby preventing overly stringent or under-protective water quality objectives.

CTR default translators were used for all metals in this Order's reasonable potential analysis and WQBEL calculations.

4.3.3. Reasonable Potential Analysis

4.3.3.1. **Available Information.** The reasonable potential analysis for this Order is based on effluent and receiving water data the Discharger collected from March 2016 through July 2020, and ambient background data collected jointly by the three treatment plants discharging to the non-tidal portion of the Napa River (Calistoga, St. Helena, and Yountville).

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, the MRP still requires monitoring for those pollutants. If concentrations are found to have increased significantly, Provision 6.3.2 of the Order requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases pose a threat to receiving water quality.

4.3.3.2. **Priority Pollutants, Municipal and Agricultural Supply Pollutants, and Dioxin-TEQ.** SIP section 1.3 sets forth the methodology used to assess whether priority pollutants have reasonable potential to exceed CTR and NTR water quality objectives. Here, SIP section 1.3 is also used as guidance for municipal and agricultural supply pollutants and for dioxin-TEQ.

The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:

- **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective).
- **Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the lowest applicable water quality objective ($B >$ water quality objective) and the pollutant is detected in any effluent sample.
- **Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes, no, or unknown) for each pollutant. Based on this analysis, copper, cyanide, chlorodibromomethane, dichlorobromomethane, ammonia, and total trihalomethanes demonstrate reasonable potential.

Secondary maximum contaminant levels (secondary MCLs) are aesthetic standards intended to protect the public from undesirable taste, odor, or appearance in drinking water. The discharge is not expected to cause or contribute to exceedances of secondary MCLs for color, turbidity, aluminum, silver, zinc, iron, and manganese because the filtration treatment required for raw surface water prior to public distribution removes these pollutants. Moreover, secondary MCLs apply as long-term averages and Discharge Prohibitions 3.2 and 3.6 ensure that discharges to the Napa River will be short-term and intermittent. Therefore, secondary MCLs for these pollutants are excluded from this analysis.

Table F-9. Reasonable Potential Analysis for Priority Pollutants, Municipal and Agricultural Supply Pollutants, and Dioxin-TEQ

CTR No.	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Result ^[3]
1	Antimony	6	< 0.2	0.34	No
2	Arsenic	10	1.7	1.3	No
3	Beryllium	4	< 0.05	< 0.09	No
4	Cadmium	0.86	< 0.06	< 0.05	No
5a	Chromium (III)	155	1.1	0.45 ^[4]	No
5b	Chromium (VI)	11	< 5.0	0.37	No
6	Copper	6.9	11	3.7	Yes
7	Lead	2.0	0.6	0.18	No
8	Mercury ^[5]	0.012	0.0071	0.011	No
9	Nickel	39	5.2	1.9	No
10	Selenium ^[6]	-	-	-	-
11	Silver	2.2	< 0.05	< 0.02	No
12	Thallium	1.7	< 0.05	< 0.05	No
13	Zinc	89	12	1.9	No
14	Cyanide	5.2	130	< 0.9	Yes
15	Asbestos (fibers/L)	7,000,000	< 3,100,000	< 400,000	No
16	2,3,7,8-TCDD	1.3 x 10 ⁻⁸	< 8.9 x 10 ⁻⁷	< 2.1 x 10 ⁻⁷	U
	Dioxin-TEQ	1.3 x 10 ⁻⁸	< 2.6 x 10 ⁻¹¹	2.1 x 10 ⁻¹¹	No
17	Acrolein	320	< 2	< 1.7	No
18	Acrylonitrile	0.059	< 0.4	< 1.8	U
19	Benzene	1	< 0.3	< 0.18	No
20	Bromoform	4.3	< 0.3	< 0.15	No
21	Carbon Tetrachloride	0.25	< 0.4	< 0.16	U
22	Chlorobenzene	70	< 0.3	< 0.18	No
23	Chlorodibromomethane	0.41	0.87	< 0.17	Yes
24	Chloroethane	No Criterion	< 0.4	< 0.38	U
25	2-Chloroethylvinyl ether	No Criterion	< 0.7	< 0.28	U
26	Chloroform	No Criterion	83	< 0.19	U
27	Dichlorobromomethane	0.56	4	< 0.16	Yes
28	1,1-Dichloroethane	5	< 0.3	< 0.19	No
29	1,2-Dichloroethane	0.38	< 0.4	< 0.18	U
30	1,1-Dichloroethylene	0.057	< 0.3	< 0.21	U
31	1,2-Dichloropropane	0.52	< 0.4	< 0.18	No
32	1,3-Dichloropropylene	10	< 0.4	< 0.16	No
33	Ethylbenzene	300	< 0.4	< 0.26	No
34	Methyl Bromide	48	< 0.4	< 0.3	No
35	Methyl Chloride	No Criterion	< 0.4	< 0.3	U
36	Methylene Chloride	4.7	0.77	< 0.4	No
37	1,1,2,2-Tetrachloroethane	0.17	< 0.3	< 0.15	U

CTR No.	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Result ^[3]
38	Tetrachloroethylene	0.8	< 0.4	< 0.19	No
39	Toluene	150	0.35	< 0.19	No
40	1,2-Trans-Dichloroethylene	10	< 0.4	< 0.22	No
41	1,1,1-Trichloroethane	200	< 0.4	< 0.19	No
42	1,1,2-Trichloroethane	0.60	< 0.4	< 0.16	No
43	Trichloroethylene	2.7	< 0.4	< 0.2	No
44	Vinyl Chloride	0.5	< 0.4	< 0.25	No
45	2-Chlorophenol	120	< 0.7	< 0.4	No
46	2,4-Dichlorophenol	93	< 0.7	< 0.4	No
47	2,4-Dimethylphenol	540	< 1	< 0.4	No
48	2-Methyl- 4,6-Dinitrophenol	13.4	< 3	< 0.3	No
49	2,4-Dinitrophenol	70	< 5	< 0.2	No
50	2-Nitrophenol	No Criterion	< 0.9	< 0.4	U
51	4-Nitrophenol	No Criterion	< 3	< 0.5	U
52	3-Methyl 4-Chlorophenol	No Criterion	< 1	< 0.5	U
53	Pentachlorophenol	0.28	< 5	< 0.005	U
54	Phenol	21,000	< 0.5	< 0.3	No
55	2,4,6-Trichlorophenol	2.1	< 0.7	< 0.5	No
56	Acenaphthene	1,200	< 0.004	< 0.016	No
57	Acenaphthylene	No Criterion	< 0.02	< 0.014	U
58	Anthracene	9,600	< 0.004	< 0.01	No
59	Benzidine	0.00012	<3.0	< 4.0	U
60	Benzo(a)Anthracene	0.0044	< 0.004	< 0.011	No
61	Benzo(a)Pyrene	0.0044	< 0.004	< 0.011	No
62	Benzo(b)Fluoranthene	0.0044	< 0.004	< 0.011	No
63	Benzo(ghi)Perylene	No Criterion	< 0.004	< 0.012	U
64	Benzo(k)Fluoranthene	0.0044	< 0.004	< 0.017	No
65	Bis(2-Chloroethoxy)Methane	No Criterion	< 0.9	< 0.5	U
66	Bis(2-Chloroethyl)Ether	0.031	< 0.9	< 0.4	U
67	Bis(2-Chloroisopropyl)Ether	1,400	< 1	< 0.4	No
68	Bis(2-Ethylhexyl)Phthalate	1.8	< 3	< 0.15	U
69	4-Bromophenyl Phenyl Ether	No Criterion	< 1	< 0.5	U
70	Butylbenzyl Phthalate	3,000	< 0.6	< 0.063	No
71	2-Chloronaphthalene	1,700	< 0.6	< 0.4	No
72	4-Chlorophenyl Phenyl Ether	No Criterion	< 0.9	< 0.5	U
73	Chrysene	0.0044	< 0.004	< 0.014	No
74	Dibenzo(a,h)Anthracene	0.0044	< 0.004	< 0.02	No
75	1,2-Dichlorobenzene	600	< 0.4	< 0.27	No
76	1,3-Dichlorobenzene	400	< 0.4	< 0.18	No
77	1,4-Dichlorobenzene	5	< 0.1	< 0.18	No
78	3,3 Dichlorobenzidine	0.04	< 5	< 5	U

CTR No.	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Result ^[3]
79	Diethyl Phthalate	23,000	0.54	< 0.051	No
80	Dimethyl Phthalate	313,000	< 0.8	< 0.039	No
81	Di-n-Butyl Phthalate	2,700	2.8	< 0.074	No
82	2,4-Dinitrotoluene	0.11	< 0.8	< 0.013	U
83	2,6-Dinitrotoluene	No Criterion	< 0.8	< 0.036	U
84	Di-n-Octyl Phthalate	No Criterion	< 0.6	< 0.027	U
85	1,2-Diphenylhydrazine	0.040	< 0.6	< 0.5	U
86	Fluoranthene	300	< 0.004	< 0.01	No
87	Fluorene	1,300	< 0.004	< 0.01	No
88	Hexachlorobenzene	0.00075	< 0.9	< 0.041	U
89	Hexachlorobutadiene	0.44	< 0.8	< 0.4	U
90	Hexachlorocyclopentadiene	50	< 4	< 0.038	No
91	Hexachloroethane	1.9	< 0.6	< 0.4	No
92	Indeno(1,2,3-cd)Pyrene	0.0044	< 0.004	< 0.02	No
93	Isophorone	8.4	< 0.3	< 0.02	No
94	Naphthalene	No Criterion	< 0.01	< 0.014	U
95	Nitrobenzene	17	< 0.9	< 0.5	No
96	N-Nitrosodimethylamine	0.00069	< 0.3	< 0.3	U
97	N-Nitrosodi-n-Propylamine	0.005	< 0.8	< 0.5	U
98	N-Nitrosodiphenylamine	5.0	< 1	< 0.3	No
99	Phenanthrene	No Criterion	< 0.004	< 0.008	U
100	Pyrene	960	< 0.004	< 0.008	No
101	1,2,4-Trichlorobenzene	5	< 0.6	< 0.25	No
102	Aldrin	0.00013	< 0.005	< 0.002	U
103	Alpha-BHC	0.0039	< 0.01	< 0.003	U
104	Beta-BHC	0.014	< 0.005	< 0.003	No
105	Gamma-BHC	0.019	< 0.01	< 0.003	No
106	Delta-BHC	No Criterion	< 0.005	< 0.003	U
107	Chlordane	0.00057	< 0.05	< 0.02	U
108	4,4'-DDT	0.00059	< 0.01	< 0.003	U
109	4,4'-DDE	0.00059	< 0.01	< 0.004	U
110	4,4'-DDD	0.00083	< 0.01	< 0.004	U
111	Dieldrin	0.00014	< 0.01	< 0.004	U
112	Alpha-Endosulfan	0.056	< 0.01	< 0.003	No
113	beta-Endosulfan	0.056	< 0.01	< 0.003	No
114	Endosulfan Sulfate	110	< 0.01	< 0.004	No
115	Endrin	0.036	< 0.01	< 0.004	No
116	Endrin Aldehyde	0.76	< 0.01	< 0.004	No
117	Heptachlor	0.00021	< 0.01	< 0.003	U
118	Heptachlor Epoxide	0.00010	< 0.01	< 0.002	U
119-125	PCBs sum ^[6]	-	-	-	-

CTR No.	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Result ^[3]
126	Toxaphene	0.0002	< 0.1	< 0.3	U
	TDS (mg/L)	1,000	710	190	No
	Specific Conductance (uS/cm)	1,600	1,100	230	No
	Aluminum	1,000	19	270	No
	Barium	1,000	41	27	No
	Boron	2,000	590	490	No
	Chloride (mg/L)	355	16	1	No
	Chromium (Total)	50	1.1	0.45	No
	Cobalt	5,000	1.0	0.12	No
	Fluoride	600	210	170	No
	Iron	20,000	< 50	300	No
	Lithium	2,500	19	28	No
	Manganese	10,000	22	14	No
	Molybdenum	50	1.3	0.8	No
	Nitrate (mg/L as N)	10	0.41	0.37	No
	Nitrate + Nitrite (mg/L as N)	10	0.41	0.39	No
	Nitrite (mg/L as N)	1.0	< 0.05	0.007	No
	Sodium adsorption ratio (adjusted units)	9.0	Unavailable	0.54	U
	Sulfate (mg/L)	250	50	24	No
	Vanadium	1,000	6.6	1.5	No
	cis-1,2-Dichloroethylene	6.0	< 0.40	< 0.2	No
	Dichloromethane	5.0	0.77	< 0.4	No
	1,3-Dichloropropene	0.5	< 0.40	< 0.00016	No
	Methyl-tert-butyl ether (MTBE)	5.0	< 0.50	< 0.00015	No
	Phenols	1,000	< 0.50	< 0.003	No
	Styrene	100	< 0.40	< 0.19	No
	Trichlorofluoromethane	150	< 0.20	< 0.29	No
	1,1,2-Trichloro-1,2,2-Trifluoroethane	1,200	< 0.20	< 0.35	No
	Xylenes	1,750	Unavailable	< 0.47	U
	Alachlor	2.0	< 0.50	< 0.022	No
	Atrazine	1.0	< 0.30	< 0.048	No
	Bentazon	18	< 0.20	< 0.063	No
	Carbofuran	18	< 0.40	< 0.1	No
	2,4-D	70	< 1.0	< 0.028	No
	Dalapon	200	< 2.0	< 0.12	No
	Dibromochloropropane	0.2	< 0.001	< 0.0084	No
	Di(2-ethylhexyl)adipate	400	< 3.0	< 0.063	No
	Dinoseb	7.0	< 0.20	< 0.024	No

CTR No.	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Result ^[3]
	Diquat	20	< 0.60	< 0.34	No
	Endothall	100	< 45	< 2.6	No
	Ethylene Dibromide	0.05	< 0.002	< 0.0057	No
	Glyphosate	700	< 6.0	< 1.6	No
	Methoxychlor	30	< 0.01	< 0.004	No
	Molinate	20	< 0.20	< 0.015	No
	Oxamyl	50	< 0.90	< 0.17	No
	Picloram	500	< 0.10	< 0.015	No
	Simazine	4.0	< 0.30	< 0.028	No
	Thiobencarb	1.0	< 0.50	< 0.017	No
	2,4,5-TP (Silvex)	50	< 0.20	< 0.022	No
	Trihalomethanes	80	84	< 0.19	Yes
	Foaming Agents (MBAS)	500	51	< 50	No

Footnotes:

- ^[1] The MEC and ambient background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (MDL).
- ^[2] The MEC or ambient background concentration is "Unavailable" when there are no monitoring data for the constituent.
- ^[3] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
 = No, if MEC and B are < WQC or all effluent data are undetected
 = Unknown (U) if no criteria have been promulgated or data are insufficient.
- ^[4] The maximum ambient background concentration is the total chromium concentration. The chromium (III) concentration is unknown but less than this value.
- ^[5] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. Although a TMDL has been developed for mercury in San Francisco Bay, mercury is included in this analysis because the Mercury Provisions established freshwater mercury objectives that apply to the non-tidal portion of the Napa River.
- ^[6] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. A TMDL has been developed for PCBs in San Francisco Bay. PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs. A TMDL has also been developed for selenium in North San Francisco Bay. Basin Plan section 7.2.4.5 finds that municipal wastewater dischargers have no reasonable potential to cause or contribute to the selenium impairment in San Francisco Bay segments and, therefore, are not required to have numeric effluent limitations.

4.3.3.3. Ammonia

4.3.3.3.1. **Methodology.** Ammonia is a toxic pollutant but not a priority pollutant as defined by the CTR; therefore, the procedure outlined in the *Technical Support Document for Water Quality-Based Toxics Control* (Technical Support Document) (EPA/505/2-90-001) was used to determine if ammonia in the discharge has reasonable potential to cause a water quality objective to be exceeded in the receiving water. According to the Technical Support Document, the reasonable potential analyses can be performed based on the receiving water concentrations projected using effluent data or measured receiving water concentrations. Both values may be compared directly with the Basin Plan un-ionized ammonia objectives.

4.3.3.3.2. **Water Quality Objective.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L (as nitrogen) as an annual median and 0.16 mg/L (as nitrogen) as a maximum for Central San Francisco Bay and upstream waters.

4.3.3.3.3. **Data Translation.** Effluent and receiving water data are available for total ammonia, but not un-ionized ammonia, because (1) sampling and laboratory methods are unavailable to analyze for un-ionized ammonia, and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on pH, salinity, and temperature of the receiving water. Total ammonia concentrations (as nitrogen) were translated into un-ionized ammonia concentrations for comparison with the Basin Plan un-ionized ammonia objectives based on the following equations (U.S. EPA, 1989, Ambient Water Quality Criteria for Ammonia (Saltwater)—1989, EPA Publication 440/5-88-004, 1989):

$$\text{Fraction of un-ionized ammonia} = (1 + 10^{[\text{pK} - \text{pH}]})^{-1}$$

Where, for salinity less than 1 ppt:

$$\text{pK} = 0.09018 + 2729.92/T$$

T = temperature in Kelvin

Where, for salinity greater than 10 ppt:

$$\text{pK} = 9.245 + 0.116*(I) + 0.0324*(298-T) + 0.0415*(P)/T$$

I = molal ionic strength of saltwater = $19.9273*(S)/(1000-1.005109*S)$
S = salinity (parts per thousand)
T = temperature in Kelvin
P = pressure (one atmosphere)

The Discharger collected pH and temperature data at Monitoring Locations EFF-001 and RSW-002 on the same day that it collected ammonia samples at the same locations. The Discharger did not collect salinity data because the non-tidal portion of the Napa River is confirmed to be freshwater (*Collaborative Napa River Receiving Water Evaluation*, 2003).

4.3.3.3.4. **Dilution.** This Order does not establish an ammonia mixing zone; therefore, no dilution was assumed (D=0) and the receiving water concentration was assumed to be the same as the projected upper bound concentration (see Step 4 in Fact Sheet section 4.3.3.3).

4.3.3.3.5. **Analysis Based on Effluent Data.** Translated un-ionized ammonia effluent data from March 2016 through February 2020 were used to evaluate reasonable potential for ammonia. The following steps summarize the process for determining reasonable potential for a pollutant using the Technical Support Document method:

- **Step 1.** Determine the total number of samples (n) and the MEC.
- **Step 2.** Determine the coefficient of variation (CV). For a data set where $n < 10$, the CV is estimated to equal 0.6. For a dataset where $n \geq 10$, the CV is calculated as the standard deviation divided by the mean.
- **Step 3.** Determine a ratio (R) for projecting the upper bound concentration based on a selected confidence interval (e.g., 95th or 99th percentile) and assuming a lognormal distribution as follows:

Calculate the percentile (P_n) represented by the MEC in the data set of n samples based on the selected confidence level.

$$P_n = (1 - \text{confidence interval})^{1/n}$$

Calculate the concentration multiplying factors (C) for the MEC percentile and the chosen upper bound percentile (typically the 99th) using the following equation:

$$C_P = \exp(Z_P\sigma - 0.5\sigma^2)$$

Where: $\sigma^2 = \ln(\text{CV}^2 + 1)$

P is the percentile (either P_n or the selected $P_{\text{upper bound}}$)

Z_p is the standard normal distribution value for the percentile P (available from statistical references)

Finally, calculate R as:

$$R = C_{\text{upper bound}} / C_{P_n}$$

- **Step 4.** Calculate the projected maximum receiving water concentration (RWC) as follows:

$$\text{RWC} = (\text{MEC} \times R) / \text{dilution ratio}$$

The dilution ratio can be defined as:

$$\text{Dilution ratio} = (D + [1 \text{ part effluent}]) / (1 \text{ part effluent})$$

Where D is the parts receiving water available to dilute 1 part effluent

Therefore:

$$\text{RWC} = (\text{MEC} \times R) / (D + 1)$$

- **Step 5.** Compare the RWC to the most stringent water quality objective for the pollutant. There is reasonable potential if the RWC is greater than or equal to the lowest applicable water quality objective.

Based on the data set of $n = 6$ with a calculated un-ionized ammonia MEC of 0.11 mg/L, P_n at a 95% confidence interval is 0.61, indicating that the MEC represents the 61st percentile of all ammonia effluent data. With the upper bound set at the 99th percentile, R is 3.1 (C_{P_n} is 1.0 and $C_{\text{upper bound}}$ is 3.1) and the projected RWC is 0.36 mg/L, which is greater than the Basin Plan's acute un-ionized ammonia water quality objective of 0.16 mg/L. Therefore, there is reasonable potential for ammonia based on effluent data as compared to the acute objective.

The median of the un-ionized ammonia effluent data was compared to the chronic objective, which is an annual median. The median of the entire data set was used rather than the maximum annual median because there were only one or two data points in each calendar year. No projection is needed to establish the central tendency of the data. The median of the data set, 0.0079 mg/L, is less than the Basin Plan's chronic un-ionized ammonia water quality objective of 0.025 mg/L. Therefore, there is no reasonable potential for ammonia based on effluent data as compared to the chronic objective.

- 4.3.3.3.6. **Analysis Based on Receiving Water Data.** Translated effluent un-ionized ammonia data from Receiving Water Monitoring Location RSW-002 collected from March 2016 through February 2020 were used to evaluate reasonable potential for ammonia. The maximum calculated un-ionized ammonia concentration of 0.0015 mg/L is less than the acute water quality objective of 0.16 mg/L and chronic water quality objective of 0.025 mg/L. Therefore, there is no reasonable potential for ammonia based on receiving water data as compared to the acute or chronic objectives.
- 4.3.3.3.7. **Conclusion.** There is reasonable potential for ammonia based on the Discharger's effluent data as compared to the acute objective, and a WQBEL is necessary.
- 4.3.3.4. **Temperature.** Basin Plan section 3.3.17 prohibits the alteration of natural receiving water temperatures such that beneficial uses are adversely affected and temperature increases greater than 2.8°C above natural receiving water temperatures. Receiving water monitoring from March 2016 through February 2020 showed no significant difference in temperature between the upstream and downstream monitoring stations. While the effluent temperature is, in general, higher than the receiving water temperature, the discharge flow is much less than the river flow (Discharge Prohibition III.B restricts discharges to when the river flow-to-effluent flow ratio is at least 19:1). Therefore, the discharge will not significantly increase

the river temperature, and there is no reasonable potential for temperature to exceed the Basin Plan water quality objective.

- 4.3.3.5. **Acute Toxicity.** Basin Plan section 4.5.5.3.1 requires acute toxicity monitoring and limitations, implying there is reasonable potential for the discharge to cause or contribute to exceedances of the acute toxicity water quality objective.
- 4.3.3.6. **Chronic Toxicity.** Consistent with Basin Plan section 4.5.5.3.2, the Discharger does not monitor for chronic toxicity because the Facility is small, there are no industrial dischargers within its service area, and its discharges occur only in the wet season when flows in the Napa River are highest. Accordingly, the low-volume, intermittent discharges are quickly diluted and unlikely to cause consistent toxicity or severe episodic events, so there is no reasonable potential for the discharge to cause or contribute to exceedances of the chronic toxicity water quality objective.
- 4.3.3.7. ***E. coli.*** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* requires *E. coli* bacteria effluent limitations for discharges to freshwater receiving waters that support the water contact recreation (REC1) beneficial use.

4.3.4. **Water Quality-Based Effluent Limitations**

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. With the exception of acute toxicity and *E. coli* bacteria, the WQBEL calculations are based on the procedures in SIP section 1.4.

- 4.3.4.1. **WQBEL Expression.** NPDES regulations at 40 C.F.R. section 122.45(d) require that permit limits for publicly-owned treatment works be expressed as average weekly and average monthly limits, unless impracticable. This Order contains daily limits instead of weekly limits because daily limits better protect against acute water quality effects and are necessary to prevent fish kills or mortality to aquatic organisms. Weekly limits could allow acute and chronic toxicity to occur over shorter periods (acute and chronic aquatic life criteria are typically expressed as one-hour and four-day averages).
- 4.3.4.2. **Mixing Zones and Dilution Credits.** The Basin Plan and SIP allow mixing zones and dilution credits under certain circumstances. The Discharger's 2010 study titled *City of St. Helena Effluent Mixing Zone / Dilution Credit Study* estimates the mixing at Discharge Point 001 using a tracer study and the U.S. EPA-supported CORMIX model. Its 2021 study, *Updated Effluent Mixing Zone Data for the City of St. Helena's Wastewater Treatment and Reclamation Plant*, provides additional mixing zone data using the CORMIX model.

The tracer study was conducted during a discharge event in April 2010 and its results indicate that the discharge is incompletely mixed, as defined in SIP section 1.4.2, because there is a greater than five percent difference in pollutant concentrations across a transect two river widths downstream from the discharge.

The CORMIX modeling was based on wet season flow scenarios relevant to the acute and chronic aquatic life and human health objectives. For the acute (one-hour) aquatic life objectives, the modeling was based on minimum and maximum daily average river and effluent flows. For the chronic (four-day) aquatic life objectives, the modeling was based on minimum and maximum four-day average river and effluent flows. For the human health (30-day or longer) objectives, the modeling was based on average daily river and effluent flows. All modeled scenarios reflect actual wet season conditions when the river flow-to-effluent flow ratio was at least 19:1 as required by Discharge Prohibition 3.2 of the Order.

The tables below summarize the CORMIX results. Table F-10a presents mixing zone characteristics corresponding to a dilution ratio of 3:1 (D=2, two parts Napa River water for each part effluent) for the acute flow scenarios. Similarly, Table F-10b presents mixing zone characteristics corresponding to a dilution ratio of 3:1 for the chronic flow scenarios. Table F-10c presents mixing zone characteristics corresponding to dilution ratios of 2:1 (D=1), 5:1 (D=4), and 16:1 (D=15) for the human health flow scenarios. The lengths and widths of the discharge plumes indicate where 2:1, 3:1, 5:1, and 16:1 dilution would be achieved. Estimated travel times are for organisms drifting downstream through the mixing zone.

Table F-10a. Acute Aquatic Life Mixing Zone Analysis

Napa River Flow Scenario	River Flow (MGD)	Effluent Flow (MGD)	D	Plume Length (feet)	Plume Width (feet)	Travel Time (sec)
Minimum Daily Average	0.05	1.0	2	0.1	0.2	0.1
Maximum Daily Average	6.6	126	2	1.1	4.2	0.3

Table F-10b. Chronic Aquatic Life Mixing Zone Analysis

Napa River Flow Scenario	River Flow (MGD)	Effluent Flow (MGD)	D	Plume Length (feet)	Plume Width (feet)	Travel Time (sec)
Minimum Four-Day Average	0.2	3.8	2	0.4	1.3	0.4
Maximum Four-Day Average	5.8	110	2	3.8	3	1.3

Table F-10c. Human Health Mixing Zone Analysis

Napa River Flow Scenario	River Flow (MGD)	Effluent Flow (MGD)	D	Plume Length (feet)	Plume Width (feet)	Travel Time (sec)
Average Daily	2.6	49	1	0.8	2.2	0.4
Average Daily	2.6	49	4	9.0	3.8	4.2
Average Daily	2.6	49	15	1,200	11	610

This Order establishes mixing zones corresponding to a dilution ratio of 3:1 (D=2) for copper and cyanide. The copper and cyanide WQBELs calculated below are based on these mixing zones and the aquatic life objectives. These mixing zones extend at most 3.8 feet downstream from the outfall, with a width no greater than 4.2 feet.

This Order also establishes mixing zones corresponding to dilution ratios of 2:1 (D=1) for total trihalomethanes, 5:1 (D=4) for chlorodibromomethane, and 16:1 (D=15) for dichlorobromomethane. The corresponding WQBELs calculated below are based on these mixing zones and the human health objectives. These mixing zones extend at most 1,200 feet downstream from the outfall, with a width no greater than 11 feet.

In accordance with SIP section 1.4.2.2, these mixing zones are as small as practicable because the resulting dilution credits are no greater than necessary to comply with this Order’s WQBELs based on current plant performance. The copper and cyanide average monthly WQBELs correspond to the 95th percentile discharge concentrations, and the maximum daily WQBELs correspond to the 99th percentile discharge concentrations. Due to the small number of effluent data points available for chlorodibromomethane, dichlorobromomethane, and total trihalomethanes, the mixing zones and dilution credits reflect that worst-case discharge concentrations may be up to three times the maximum concentrations observed during the previous order term.

In accordance with SIP section 1.4.2.2.A, these mixing zones will not do any of the following:

- 4.3.4.2.1. **Compromise the integrity of the water body.** The mixing zones will not compromise the integrity of the receiving waters because they are small (maximum of 1,200 feet long and 11 feet wide) relative to the size of the Napa River (55 miles long). Moreover, this Order prohibits most dry season discharges, preserving the integrity of the entire water body during those periods.
- 4.3.4.2.2. **Cause acutely toxic conditions to aquatic life passing through the mixing zone.** Acutely toxic conditions will not exist inside the mixing zones because this Order contains acute toxicity effluent limits and requires acute toxicity testing to demonstrate compliance. The acute

toxicity limits do not account for any dilution; therefore, compliance with them will protect areas within the mixing zones. Bioassay monitoring conducted on fathead minnow during the previous order term showed high survival rates, indicating that organisms passing through the mixing zones are unlikely to experience acute toxicity.

- 4.3.4.2.3. **Restrict the passage of aquatic life.** As described above, the discharge will not cause acutely toxic conditions to aquatic life, so it will not threaten aquatic life moving in and out of the mixing zones. The maximum time an organism is expected to spend drifting through an aquatic life mixing zone is less than two seconds, a duration far shorter than the durations reflected in the applicable water quality criteria. Moreover, aquatic species need not travel through the mixing zones because the maximum aquatic life mixing zone extends only 4.2 feet in width and the river is approximately 26 feet wide.
- 4.3.4.2.4. **Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species under federal or State endangered species laws.** The Discharger's mixing zone study identified two potential species of concern in the area. Steelhead (*Oncorhynchus mykiss irideus*) is a federally-listed "threatened" species known to spawn in the Napa River in January and February. The western pond turtle (*Actinemys marmorata*) is a State-listed species of special concern. Turtles may absorb oxygen through their skin when they are submerged in water, but are in open water only intermittently so they are unlikely to be adversely affected by contact with diluted effluent. Steelhead may take in pollutants through their gills as they pass through the mixing zone, but, because the largest aquatic life mixing zone extends only 4.2 feet from the bank and 3.8 feet downstream, both turtles and steelhead are unlikely to reside within the mixing zone for any significant duration that could adversely affect them.
- 4.3.4.2.5. **Produce undesirable or nuisance aquatic life.** Copper, cyanide, and trihalomethanes (including chlorodibromomethane and dichlorobromomethane) are not biostimulants or plant nutrients so they are not expected to cause growth of undesirable or nuisance aquatic species. Moreover, this Order imposes receiving water limitations that prohibit bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.
- 4.3.4.2.6. **Result in floating debris, oil, or scum.** The mixing zones will not result in floating debris, oil, or scum because both the existing and planned treatment processes are designed to remove oils, grease, debris, and scum. In addition, section 5.1.1 of this Order imposes receiving water limitations that prohibit floating debris, oil, or scum at any place and at any time.

4.3.4.2.7. **Produce objectionable color, odor, taste, or turbidity.** The mixing zones will not produce objectionable color, odor, taste, or turbidity because both the existing and planned treatment processes include secondary treatment and disinfection. Secondary treatment generally address objectionable odor, taste, and turbidity through the biological degradation of organic compounds and clarification. In addition, sections 5.1.6 and 5.1.7 of this Order prohibit alteration of color or turbidity beyond natural background levels.

4.3.4.2.8. **Cause objectionable bottom deposits.** The mixing zones will not cause objectionable bottom deposits because both the existing and planned treatment processes include secondary treatment and removal of settleable solids. Moreover, section 5.1.4 of this Order prohibits bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

4.3.4.2.9. **Cause nuisance.** Water Code section 13050(m) defines “nuisance” to mean anything that meets all three of the following criteria:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

Section 5.1 of this Order prohibits discharges from causing a nuisance. Furthermore, the Discharger conducts regular effluent monitoring that includes standard observations to confirm that nuisance conditions are not present.

4.3.4.2.10. **Dominate the receiving water body or overlap a mixing zone from a different outfall.** The mixing zones will not overlap any other mixing zone because the Regional Water Board has not established any other mixing zones within approximately 10 miles of the discharge.

4.3.4.2.11. **Be located at or near any drinking water intake.** There are no known drinking water intakes within 15 miles downstream of the outfall, far downstream of the mixing zones.

4.3.4.3. **WQBEL Calculations.** The following table shows the copper, cyanide, chlorodibromomethane, and dichlorobromomethane WQBEL calculations as required by SIP section 1.4. The total trihalomethane and total ammonia WQBEL calculations are also based on SIP section 1.4 as guidance.

Table F-11. WQBEL Calculations

Pollutant	Copper	Cyanide	Chlorodibromomethane	Dichlorobromomethane	Total Trihalomethanes	Total Ammonia (acute)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L as N
Basis and Criteria type	Basin Plan and CTR Aquatic Life	Basin Plan and CTR Aquatic Life	CTR Human Health	CTR Human Health	Basin Plan Municipal Supply and Title 22 Primary MCL	Basin Plan Aquatic Life
CTR Aquatic Life Criteria - Acute	8.1	22	-	-	-	16
CTR Aquatic Life Criteria - Chronic	5.7	5.2	-	-	-	-
CTR Human Health Criteria - Organisms Only	-	-	34	46	-	-
CTR Human Health Criteria - Water & Organisms	1,300	700	0.41	0.56	-	-
Title 22 Municipal Supply - Primary MCL	-	150	-	-	80	-
Title 22 Municipal Supply - Secondary MCL	1,000	-	-	-	-	-
Basin Plan Agricultural Supply	5,000	-	-	-	-	-
Water Effects Ratio (WER)	1	1	1	1	1	1
Lowest WQO	5.7	5.2	0.41	0.56	80	16
Site Specific Translator - MDEL	-	-	-	-	-	-
Site Specific Translator - AMEL	-	-	-	-	-	-
Dilution Factor (D)	2	2	4	15	1	0
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	N	N	Y
HH criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N
Applicable Acute WQO	8.1	22	-	-	-	16
Applicable Chronic WQO	5.7	5.2	-	-	-	-
HH Criteria	1,000	150	0.41	0.56	80	-

Pollutant	Copper	Cyanide	Chlorodibromomethane	Dichlorobromomethane	Total Trihalomethanes	Total Ammonia (acute)
Background (Maximum Conc. for Aquatic Life Calc.)	3.7	0.90	-	-	-	0.24
Background (Average Conc. for Human Health Calc.)	1.7	0.90	0.17	0.16	0.19	-
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	N	N	N
ECA Acute	17	64	-	-	-	16
ECA Chronic	9.7	14	-	-	-	-
ECA HH	3,000	450	1.4	6.6	160	-
No. of data points <10 or at least 80% of data reported non-detect? (Y/N)	N	N	Y	Y	Y	Y
Avg of effluent data points	6.6	40	0.54	4.0	84	3.2
Std Dev of effluent data points	2.4	52	0.47	0.07	N/A	2.6
CV Calculated	0.36	1.3	N/A	N/A	N/A	N/A
CV (Selected) - Final	0.36	1.3	0.60	0.60	0.60	0.60
ECA Acute Mult99	0.48	0.16	-	-	-	0.32
ECA Chronic Mult99	0.67	0.30	-	-	-	-
LTA Acute	8.0	11	-	-	-	5.1
LTA Chronic	6.5	4.2	-	-	-	-
Minimum of LTAs	6.5	4.2	-	-	-	5.1
AMEL Mult95	1.3	2.2	1.6	1.6	1.6	1.6
MDEL Mult99	2.1	6.1	3.1	3.1	3.1	3.1
AMEL (Aquatic Life)	8.6	9.3	-	-	-	7.8
MDEL (Aquatic Life)	14	26	-	-	-	16
MDEL/AMEL Multiplier	1.6	2.8	2.0	2.0	2.0	2.0
AMEL (Human Health)	3,000	450	1.4	6.6	160	-
MDEL (Human Health)	4,800	1,200	2.7	13	320	-
Minimum of AMEL for Aq. Life vs HH	8.6	9.3	1.4	6.6	160	7.8
Minimum of MDEL for Aq. Life vs HH	14	26	2.7	13	320	16

Pollutant	Copper	Cyanide	Chlorodibromomethane	Dichlorobromomethane	Total Trihalomethanes	Total Ammonia (acute)
Previous Order Limit - AMEL	8.3	15	N/A	N/A	N/A	16
Previous Order Limit - MDEL	17	30	N/A	N/A	N/A	39
Final Limit - AMEL	8.3	9.3	1.4	6.6	160	7.8
Final Limit - MDEL	14	26	2.7	13	320	16

4.3.4.4. **Acute Toxicity.** This Order includes acute toxicity effluent limitations based on Basin Plan Table 4-3. Based on Basin Plan section 3.3.20, if the Discharger can demonstrate that ammonia causes acute toxicity in excess of the acute toxicity limitations in this Order, and that the ammonia in the discharge complies with the ammonia effluent limitations in this Order, then such toxicity does not constitute a violation of the acute toxicity effluent limitations.

4.3.4.5. **E. Coli Bacteria.** This Order includes *E. coli* effluent limitations based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*, which requires these limitations for discharges to receiving waters with the water contact recreation beneficial use.

4.4. Discharge Requirement Considerations

4.4.1. **Anti-Backsliding.** This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4), and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous order. The requirements of this Order are at least as stringent as those in the previous order.

This Order does not retain the three-sample median effluent limit for acute toxicity from the previous order because Basin Plan Table 4-3 specifies only a single-sample acute toxicity limit for intermittent discharges. CWA section 303(d)(4) allows backsliding for acute toxicity because the Napa River is not impaired by toxicity and the less stringent effluent limit is consistent with antidegradation policies, as discussed below.

4.4.2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. It does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for an increased flow, or a reduced level of treatment relative to the previous order.

This Order removes the three-sample median effluent limit of at least 90 percent survival for acute toxicity, but continues to require a single-sample survival rate of at least 70 percent. This less stringent WQBEL will not degrade the Napa River because a single-sample limit for acute toxicity is a better indicator of treatment for the intermittent and infrequent discharges permitted by this Order.

- 4.4.3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement CWA requirements.

This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating these WQBELs are based on the CTR, as implemented in accordance with the SIP, which U.S. EPA approved on May 18, 2000. U.S. EPA approved most Basin Plan beneficial uses and water quality objectives prior to May 30, 2000. Beneficial uses and water quality objectives 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). U.S. EPA approved the remaining beneficial uses and water quality objectives, so they are also applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

5. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in sections 5.1 and 5.2 of the Order are based on Basin Plan narrative and numeric water quality objectives. The receiving water limitation in section 5.3 of the Order requires compliance with federal and State water quality standards in accordance with the CWA and regulations adopted thereunder.

6. RATIONALE FOR PROVISIONS

6.1. Standard Provisions

Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. The Discharger must comply with these provisions. The conditions set forth in 40 C.F.R. sections 122.41(a)(1) and (b) through (n) apply to all state-issued

NPDES permits and must be incorporated into permits either expressly or by reference.

In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify conditions to impose more stringent requirements. Attachment G contains standard provisions that supplement the provisions in Attachment D. This Order omits the federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State's enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

6.2. Monitoring and Reporting Provisions

CWA section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more information, see Fact Sheet section 7.

6.3. Special Provisions

6.3.1. Reopener Provisions

These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law.

6.3.2. Effluent Characterization Study and Report

This Order does not include WQBELs for pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to evaluate monitoring data to verify that the reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to 40 C.F.R. section 122.41(h) and Water Code sections 13267 and 13383, and is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.

6.3.3. Pollutant Minimization Program

This provision is based on Basin Plan section 4.13.2 and SIP section 2.4.5.

6.3.4. Special Provisions for Publicly-Owned Treatment Works

- 6.3.4.1. **Sludge and Biosolids Management.** This provision is based on Basin Plan section 4.17. “Sludge” refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. “Biosolids” refers to sludge that has been treated and may be beneficially reused.
- 6.3.4.2. **Collection System Management.** The Discharger’s collection system is part of the Facility regulated through this Order. This provision requires compliance with Attachments D and G and states that these requirements may be satisfied by separately complying with State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order updating these requirements. These statewide WDRs require public agencies that own or operate sanitary sewer systems with one or more miles of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer overflows, among other provisions and prohibitions. The statewide WDRs contain requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G. Compliance with the statewide WDRs will satisfy the corresponding requirements in Attachments D and G.
- 6.3.4.3. **Resource Recovery from Anaerobically Digestible Material.** Standard Operating Procedures are required for publicly-owned treatment works that accept hauled waste food, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs.

Some POTWs choose to accept organic material, such as waste food, fats, oils, and grease, into their anaerobic digesters to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system and potentially causing sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed to exempt publicly-owned treatment works from Process Facility/Transfer Station permit requirements when the same activity is regulated under WDRs or NPDES permits. The proposed exemption is restricted to anaerobically digestible materials that have been prescreened, slurried, processed, and conveyed in a closed system for co-digestion with regular sewage sludge. The exemption requires that the publicly-owned treatment works develop Standard Operating Procedures for

proper handling, processing, tracking, and management of anaerobically digestible material.

6.3.5. Other Special Provisions

- 6.3.5.1. **Plant Upgrades.** This provision is based on 40 C.F.R. section 122.41(l). It specifies conditions that must be met before the Discharger brings its new treatment process online. It is necessary for the Regional Water Board to know when the Discharger implements upgrades to ensure that the plant can effectively and reliably comply with the requirements of this Order.

The option to submit a startup operations plan is based on Water Code section 13385(j)(1)(D), which exempts the Discharger from mandatory minimum penalties for violations within a defined startup adjustment and testing period under specific conditions. This option is necessary if the Discharger wants to demonstrate that it adequately satisfied the conditions necessary for exemption from mandatory minimum penalties associated with any potential violations during the upgraded plant's startup period. Pursuant to Water Code section 13385(j)(1)(D), the Discharger is exempt from mandatory minimum penalties for violations within the defined startup adjustment and testing period if the Discharger can demonstrate the following:

- 6.3.5.2.1. Compliance with its operations plan,
- 6.3.5.2.2. Violations resulted from the operation of the new or upgraded wastewater treatment units, and
- 6.3.5.2.3. Violations could not have reasonably been avoided.
- 6.3.5.3. **Average Selenium Load.** This provision is based on Basin Plan section 7.2.4.5. The information will be used to confirm that selenium loads are consistent with wasteload allocations. The requirements regarding treatment of estimated and non-detect values are consistent with the load calculations performed for the North San Francisco Bay Selenium TMDL.

7. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The following provides the rationale for the monitoring and reporting requirements in the MRP.

7.1. Monitoring Requirements Rationale

- 7.1.1. **Influent Monitoring.** Influent flow monitoring is necessary to understand Facility operations and to evaluate compliance with Discharge Prohibition 3.4, which prohibits average dry weather influent flow greater than 0.50 MGD. Influent BOD and TSS monitoring is necessary to evaluate compliance with this Order's 85 percent removal requirements.

- 7.1.2. **Effluent Monitoring.** Effluent flow monitoring is necessary to understand Facility operations. Monitoring for other parameters is necessary to evaluate compliance with this Order’s effluent limitations and to conduct future reasonable potential analyses.
- 7.1.3. **Toxicity Monitoring.** Acute toxicity tests are necessary to evaluate compliance with this Order’s acute toxicity effluent limitations.
- 7.1.4. **Receiving Water Monitoring.** Receiving water monitoring is necessary to conduct future reasonable potential analyses.
- 7.1.5. **Recycled Water Monitoring.** The recycled water monitoring and reporting requirements incorporate the existing requirements of State Water Board Order WQ 2019-0037-EXEC (Amending Monitoring and Reporting Programs for Waste Discharge Requirements, National Pollutant Discharge Elimination System Permits, Water Reclamation Requirements, Master Recycling Permits, and General Waste Discharge Requirements), issued on July 24, 2019, pursuant to Water Code sections 13267 and 13383.
- 7.1.6. **Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires some dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program that evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories, and evaluates each laboratory’s ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES program. There are two options to comply: (1) the Discharger may obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, the Discharger may submit results from the most recent Water Pollution Performance Evaluation Study. MRP section 1.4 requires the Discharger to ensure that the results of the DMR-QA Study or most recent Water Pollution Performance Evaluation Study are submitted to the State Water Board, which forwards the results to U.S. EPA.

7.2. Monitoring Requirements Summary. The table below summarizes routine monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order. In addition to undertaking the monitoring below, the Discharger must conduct receiving water monitoring by continuing to participate in the Regional Monitoring Program.

Table F-12. Monitoring Requirements Summary

Parameter ^[1]	Influent INF-001 ^[2]	Effluent EFF-001-D ^[2]	Effluent EFF-001 ^[2]	Effluent REC-001 ^[2]	Receiving Water RSW-001 ^[2]	Receiving Water RSW-002-U ^[2]	Receiving Water RSW-002-D ^[2]
Flow	Continuous/D	Continuous/D	Continuous/D	Continuous/D	-	-	-
BOD	1/Week	1/Week	-	-	-	-	-

Parameter ^[1]	Influent INF-001 ^[2]	Effluent EFF-001-D ^[2]	Effluent EFF-001 ^[2]	Effluent REC-001 ^[2]	Receiving Water RSW-001 ^[2]	Receiving Water RSW-002-U ^[2]	Receiving Water RSW-002-D ^[2]
TSS	1/Week	1/Week	-	-	-	-	-
pH	-	Continuous/D	Continuous/D	-	-	2/Year	2/Year
Oil and Grease	-	1/Year	-	-	-	-	-
<i>E. Coli</i> Bacteria	-	1/Week	-	-	-	-	-
Total Coliform Bacteria	-	1/Week	-	-	-	-	-
Acute Toxicity	-	-	1/Quarter	-	-	-	-
Turbidity	-	Continuous/D ^[3]	-	-	-	-	-
Temperature	-	-	Continuous/D	-	-	2/Year	2/Year
Chlorine, Total Residual	-	-	Continuous/D	-	-	-	-
Ammonia, Total	-	-	1/Quarter	-	-	2/Year	2/Year
Copper, Total Recoverable	-	-	1/Month	-	-	-	2/Year
Cyanide, Total	-	-	1/Month	-	-	-	-
Chlorodibromo-methane	-	-	1/Year	-	-	-	-
Dichlorobromo-methane	-	-	1/Year	-	-	-	-
Total Trihalo-methanes	-	-	1/Year	-	-	-	-
Hardness	-	-	-	-	-	-	2/Year
Priority Pollutants	-	-	Once	-	Once	-	-
Municipal and Agricultural Supply Pollutants	-	-	Once	-	Once	-	-
River Flow-to-Effluent Flow Ratio	-	-	1/Day	-	-	-	-
Standard Observations	-	-	-	-	-	2/Year	2/Year

Footnotes:

^[1] The Discharger must also comply with the monitoring requirements in the Mercury and PCBs Watershed Permit (NPDES Permit CA0038849).

^[2] The MRP defines these sampling frequencies.

^[3] Turbidity monitoring is only required after Provision 6.3.5.1 is fulfilled and the upgraded plant is operational.

8. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, Regional

Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process.

8.1. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge, and provided an opportunity to submit written comments and recommendations. The public had access to the agenda and any changes in dates and locations through the [Regional Water Board's website](http://waterboards.ca.gov/sanfranciscobay) (waterboards.ca.gov/sanfranciscobay).

8.2. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were to be submitted either in person or by mail to the Executive Office at the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Robert Schlipf.

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by 5:00 p.m. on March 15, 2021.

8.3. Public Hearing. The Regional Water Board held a public hearing on the tentative WDRs during its meeting at the following date and time:

Date: April 14, 2021
Time: 9:00 a.m.

Contact: Robert Schlipf, (510) 622-2478, Robert.Schlipf@waterboards.ca.gov

Interested persons were provided notice of the hearing and information on how to participate. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

If the date or venue of any public hearing changes, the changes will be reflected in the most current agenda posted on the [Regional Water Board's website](http://waterboards.ca.gov/sanfranciscobay) (waterboards.ca.gov/sanfranciscobay).

8.4. Reconsideration of Waste Discharge Requirements. Any person aggrieved by this Regional Water Board action may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050. The State Water Board must receive the petition at the following address within 30 calendar days of the date of Regional Water Board action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

A petition may also be filed by email at waterqualitypetitions@waterboards.ca.gov.

For instructions on how to file a water quality petition for review, see the [Water Board's petition instructions](https://waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml) (waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml).

- 8.5. Information and Copying.** The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the Regional Water Board address above at any time online or by contacting the Regional Water Board's custodian of records. Document copying may be arranged by calling (510) 622-2300.
- 8.6. 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 the Facility, and provide a name, address, and phone number.
- 8.7. Additional Information.** Requests for additional information or questions regarding this Order should be directed to Robert Schlipf, (510) 622-2478, Robert.Schlipf@waterboards.ca.gov.

APPENDIX F-1: RIVER FLOW-TO-EFFLUENT FLOW RATIO CALCULATIONS

The flow balance for the Napa River from a point just upstream of the City of Calistoga outfalls to a point just downstream of the Town of Yountville outfall can be expressed as:

$$Q_{Up} + Q_C + Q_{SH} + Q_Y + Q_{Urban} + Q_{Trib} = Q_{Down}$$

Where: Q_{Up} = Upstream River Flow
 Q_C = Calistoga Effluent Flow
 Q_{SH} = Saint Helena Effluent Flow
 Q_Y = Yountville Effluent Flow
 Q_{Urban} = Urban Runoff Flow
 Q_{Trib} = Tributary Flow
 Q_{Down} = Downstream River Flow

Conservatively assuming that Q_{Trib} is negligible during the early part of the discharge season, this equation yields:

Equation 1: $Q_{Up} + Q_C + Q_{SH} + Q_Y + Q_{Urban} = Q_{Down}$

The following are conservative flow estimates based on total wet season discharges measured for each facility from October 2016 through May 2017 (the water year with the highest discharge over the previous five years):

$$Q_C = 171.5 \text{ MG/year} = 0.96 * Q_{SH}$$
$$Q_{SH} = 178.0 \text{ MG/year}$$
$$Q_Y = 80.7 \text{ MG/year} = 0.45 * Q_{SH}$$

This yields a total annual wastewater treatment plant flow of:

Equation 2: $Q_C + Q_{SH} + Q_Y = 2.42 * Q_{SH} = 430.2 \text{ MG/year}$

Q_{Urban} can be estimated using the following equation, which is from Table 7b of the Staff Report for the Napa River Sediment Total Maximum Daily Load (January 16, 2007):

$$Q_{Urban} = K_{Mun} * I * A_{Mun} + K_{Ind} * I * A_{Ind}$$

Where: I = annual rainfall = 30 inches/year
 K_{Mun} = municipal runoff fraction = 0.2
 K_{Ind} = industrial runoff fraction = 1.0
 A_{Mun} = municipal area = 25,667 acres
 A_{Ind} = industrial area = 1,447 acres

Using the values above to solve for urban runoff flow and a unit conversion factor of 0.02715 million gallons per acre-inch:

$$Q_{Urban} = 5,361 \text{ MG/year}$$

Therefore, Q_{Urban} is approximately 12.46 times the combined flow of the treatment plants:

$$Q_{Urban} / (Q_C + Q_{SH} + Q_Y) = (5,361 \text{ MG/year}) / (430.2 \text{ MG/year}) = 12.46$$

$$Q_{Urban} = 12.46 * (Q_C + Q_{SH} + Q_Y)$$

Substituting this ratio into Equation 1 yields:

$$Q_{Up} + 13.46 (Q_C + Q_{SH} + Q_Y) = Q_{Down}$$

Inserting Equation 2 yields:

$$Q_{Up} + 13.46 * (2.42 * Q_{SH}) = Q_{Down}$$

$$Q_{Up} + 32.53 * Q_{SH} = Q_{Down}$$

Equation 3: $Q_{Up} = Q_{Down} - (32.53 * Q_{SH})$

Effluent and ambient background data suggest that the Napa River's assimilative capacity may be most limited with respect to copper. As demonstrated in Fact Sheet section 4.3.4, copper is the only chemical pollutant with reasonable potential to exceed a water quality objective (WQO). The copper mass balance, calculated by setting the background, effluent, and runoff copper mass equal to the downstream copper mass based on the downstream flow and copper WQO, can be expressed as follows:

Equation 4: $Q_{Down} * C_{Down} = (Q_{Up} * C_{Up}) + (Q_C * C_C) + (Q_{SH} * C_{SH}) + (Q_Y * C_Y) + (Q_{Urban} * C_{Urban})$

Where: C_{Up} = Upstream River Copper Concentration
 C_C = Calistoga Effluent Copper Concentration
 C_{SH} = Saint Helena Effluent Copper Concentration
 C_Y = Yountville Effluent Copper Concentration
 C_{Urban} = Urban Runoff Copper Concentration
 C_{Down} = Downstream River Copper Concentration (Set equal to copper WQO)

The Staff Report for the Copper Site-Specific Objectives in San Francisco Bay (June 6, 2007) estimates that urban and non-urban runoff copper loads are about eight times those of the wastewater treatment plants:

$$Q_{Urban} * C_{Urban} = 8 * [(Q_C * C_C) + (Q_{SH} * C_{SH}) + (Q_Y * C_Y)]$$

Inserting this into Equation 4 yields:

$$Q_{Down} * C_{Down} = (Q_{Up} * C_{Up}) + 9 * [(Q_C * C_C) + (Q_{SH} * C_{SH}) + (Q_Y * C_Y)]$$

Substituting Equation 3 into this equation yields:

$$Q_{\text{Down}} * C_{\text{Down}} = [(Q_{\text{Down}} - [32.5 * Q_{\text{SH}}]) * C_{\text{Up}}] + (9 * [(Q_{\text{C}} * C_{\text{C}}) + (Q_{\text{SH}} * C_{\text{SH}}) + (Q_{\text{Y}} * C_{\text{Y}})])$$

$$Q_{\text{Down}} * C_{\text{Down}} = (Q_{\text{Down}} * C_{\text{Up}}) - (32.5 * Q_{\text{SH}} * C_{\text{Up}}) + (9 * [(Q_{\text{C}} * C_{\text{C}}) + (Q_{\text{SH}} * C_{\text{SH}}) + (Q_{\text{Y}} * C_{\text{Y}})])$$

$$Q_{\text{Down}} * C_{\text{Down}} = (Q_{\text{Down}} * C_{\text{Up}}) - (32.5 * Q_{\text{SH}} * C_{\text{Up}}) + (9 * Q_{\text{C}} * C_{\text{C}}) + (9 * Q_{\text{SH}} * C_{\text{SH}}) + (9 * Q_{\text{Y}} * C_{\text{Y}})$$

Substituting for Q_{C} and Q_{SH} in terms of C_{Y} yields:

$$Q_{\text{Down}} * C_{\text{Down}} = (Q_{\text{Down}} * C_{\text{Up}}) - (32.5 * Q_{\text{SH}} * C_{\text{Up}}) + (9 * 0.963 * Q_{\text{SH}} * C_{\text{C}}) + (9 * Q_{\text{SH}} * C_{\text{SH}}) + (9 * 0.454 * Q_{\text{SH}} * C_{\text{Y}})$$

$$Q_{\text{Down}} * C_{\text{Down}} = (Q_{\text{Down}} * C_{\text{Up}}) - (32.5 * Q_{\text{SH}} * C_{\text{Up}}) + (8.7 * Q_{\text{SH}} * C_{\text{C}}) + (9 * Q_{\text{SH}} * C_{\text{SH}}) + (4.1 * Q_{\text{SH}} * C_{\text{Y}})$$

Finally, solving for the river flow-to-effluent flow ratio ($Q_{\text{Down}} / Q_{\text{Y}}$) requires several steps:

$$Q_{\text{Down}} * C_{\text{Down}} = (Q_{\text{Down}} * C_{\text{Up}}) + Q_{\text{SH}} [(-32.5 * C_{\text{Up}}) + (8.7 * C_{\text{C}}) + (9 * C_{\text{SH}}) + (4.1 * C_{\text{Y}})]$$

$$(Q_{\text{Down}} * C_{\text{Down}}) - (Q_{\text{Down}} * C_{\text{Up}}) = Q_{\text{SH}} [(-32.5 * C_{\text{Up}}) + (8.7 * C_{\text{C}}) + (9 * C_{\text{SH}}) + (4.1 * C_{\text{Y}})]$$

$$[(Q_{\text{Down}} * C_{\text{Down}}) - (Q_{\text{Down}} * C_{\text{Up}})] / Q_{\text{SH}} = (-32.5 * C_{\text{Up}}) + (8.7 * C_{\text{C}}) + (9 * C_{\text{SH}}) + (4.1 * C_{\text{Y}})$$

$$Q_{\text{Down}} * (C_{\text{Down}} - C_{\text{Up}}) / Q_{\text{SH}} = (-32.5 * C_{\text{Up}}) + (8.7 * C_{\text{C}}) + (9 * C_{\text{SH}}) + (4.1 * C_{\text{Y}})$$

$$Q_{\text{Down}} / Q_{\text{SH}} = [(-32.5 * C_{\text{Up}}) + (8.7 * C_{\text{C}}) + (9 * C_{\text{SH}}) + (4.1 * C_{\text{Y}})] / (C_{\text{Down}} - C_{\text{Up}})$$

Effluent copper concentrations are conservatively estimated based on each wastewater treatment plant's 95th percentile effluent copper concentration from February 2014 through May 2020. The downstream copper water quality objective (6.9 µg/L) is based on Basin Plan Table 3-4 and the minimum of all downstream hardness samples (70 mg/L as CaCO₃) from January 2011 through May 2020. The upstream copper concentration (3.7 µg/L) is based on the highest upstream concentration observed from December 2016 through May 2020.

$$C_{\text{Up}} = 3.7 \text{ } \mu\text{g/L}$$

$$C_{\text{C}} = 7.5 \text{ } \mu\text{g/L}$$

$$C_{\text{SH}} = 9.4 \text{ } \mu\text{g/L}$$

$$C_{\text{Y}} = 7.3 \text{ } \mu\text{g/L}$$

$$C_{\text{Down}} = 6.9 \text{ } \mu\text{g/L}$$

Substituting these values into the equation above:

$$Q_{\text{Down}} / Q_{\text{SH}} = [(-32.5 * 3.7) + (8.7 * 7.5) + (9 * 9.4) + (4.1 * 7.3)] / (6.9 - 3.7)$$

$$Q_{\text{Down}} / Q_{\text{SH}} = 19 / 1$$

**ATTACHMENT G – REGIONAL STANDARD PROVISIONS,
AND MONITORING AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)**

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**ATTACHMENT G – REGIONAL STANDARD PROVISIONS,
AND MONITORING AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)**

APPLICABILITY

This document supplements the requirements of Federal Standard Provisions (Attachment D). For clarity, these provisions are arranged using the same headings as those used in Attachment D.

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply – Not Supplemented

1.2. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

1.3. Duty to Mitigate – Supplement to Attachment D, Provision 1.3.

1.3.1. Contingency Plan. The Discharger shall maintain a Contingency Plan as prudent in accordance with current facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan (see Provision 1.3.2, below) into one document. In accordance with Regional Water Board Resolution No. 74-10, discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below may be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code section 13387. The Contingency Plan shall, at a minimum, provide for the following:

- 1.3.1.1. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;
- 1.3.1.2. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;
- 1.3.1.3. Emergency standby power;
- 1.3.1.4. Protection against vandalism;
- 1.3.1.5. Expedient action to repair failures of, or damage to, equipment, including any sewer lines;

- 1.3.1.6. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and
- 1.3.1.7. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.
- 1.3.2. **Spill Prevention Plan.** The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and to minimize the effects of any such discharges. The Spill Prevention Plan shall do the following:
 - 1.3.2.1. Identify the possible sources of accidental discharge, untreated or partially-treated waste bypass, and polluted drainage;
 - 1.3.2.2. State when current facilities and procedures became operational and evaluate their effectiveness; and
 - 1.3.2.3. Predict the effectiveness of any proposed facilities and procedures and provide an implementation schedule with interim and final dates when the proposed facilities and procedures will be constructed, implemented, or operational.
- 1.4. **Proper Operation and Maintenance** – Supplement to Attachment D, Provision 1.4
 - 1.4.1. **Operation and Maintenance Manual.** The Discharger shall maintain an Operation and Maintenance Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the Operation and Maintenance Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The Operation and Maintenance Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.
 - 1.4.2. **Wastewater Facilities Status Report.** The Discharger shall maintain a Wastewater Facilities Status Report and regularly review, revise, or update it, as necessary. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
 - 1.4.3. **Proper Supervision and Operation of Publicly-Owned Treatment Works (POTWs).** POTWs shall be supervised and operated by persons possessing

certificates of appropriate grade pursuant to Title 23, section 3680, of the California Code of Regulations.

1.5. Property Rights – Not Supplemented

1.6. Inspection and Entry – Not Supplemented

1.7. Bypass – Not Supplemented

1.8. Upset – Not Supplemented

1.9. Other – Addition to Attachment D

- 1.9.1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.
- 1.9.2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.
- 1.9.3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

2. STANDARD PROVISIONS – PERMIT ACTION – NOT SUPPLEMENTED

3. STANDARD PROVISIONS – MONITORING

3.1. Sampling and Analyses – Supplement to Attachment D, Provisions 3.1 and 3.2

- 3.1.1. **Certified Laboratories.** Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code section 13176.
- 3.1.2. **Minimum Levels.** For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.
- 3.1.3. **Monitoring Frequency.** The MRP specifies the minimum sampling and analysis schedule.
 - 3.1.3.1. **Sample Collection Timing**
 - 3.1.3.1.1. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer

may approve an alternative influent sampling plan if it is representative of plant influent and complies with all other permit requirements.

- 3.1.3.1.2. The Discharger shall collect effluent samples on days coincident with influent sampling, unless otherwise stipulated by the MRP. If influent sampling is not required, the Discharger shall collect effluent samples on varying days selected at random, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative effluent sampling plan if it is representative of plant discharge and in compliance with all other permit requirements.
- 3.1.3.1.3. The Discharger shall collect effluent grab samples during periods of daytime maximum peak flows (or peak flows through secondary treatment units for facilities that recycle effluent).
- 3.1.3.1.4. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay the MRP requires. During the course of the bioassay, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event that a bioassay result does not comply with effluent limitations, the Discharger shall analyze the retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.
 - 3.1.3.1.4.1. The Discharger shall perform bioassays on final effluent samples; when chlorine is used for disinfection, bioassays shall be performed on effluent after chlorination and dechlorination; and
 - 3.1.3.1.4.2. The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.

3.1.3.2. **Conditions Triggering Accelerated Monitoring**

- 3.1.3.2.1. **Average Monthly Effluent Limitation Exceedance.** If the results from two consecutive samples of a constituent monitored in a particular month exceed the average monthly effluent limitation for any parameter (or if the required sampling frequency is once per month or less and the monthly sample exceeds the average monthly effluent limitation), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter complies with the average monthly effluent limitation.
- 3.1.3.2.2. **Maximum Daily Effluent Limitation Exceedance.** If a sample result exceeds a maximum daily effluent limitation, the Discharger shall, within 24 hours after the result is received, increase its sampling frequency to daily until the results from two samples collected on consecutive days show compliance with the maximum daily effluent limitation.

- 3.1.3.2.3. **Acute Toxicity.** If final or intermediate results of an acute bioassay indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay is less than 70 percent), the Discharger shall initiate a new test as soon as practical or as described in applicable State Water Board plan provisions that become effective after adoption of these Regional Standard Provisions. The Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report.
- 3.1.3.2.4. **Chlorine.** The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limitation is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring.
- 3.1.3.2.5. **Bypass.** Except as indicated below, if a Discharger bypasses any portion of its treatment facility, it shall monitor flows and collect samples at affected discharge points and analyze samples for all constituents with effluent limitations on a daily basis for the duration of the bypass. The Discharger need not accelerate chronic toxicity monitoring. The Discharger also need not collect and analyze samples for mercury, dioxin-TEQ, and PCBs after the first day of the bypass. The Discharger may satisfy the accelerated acute toxicity monitoring requirement by conducting a flow-through test or static renewal test that captures the duration of the bypass (regardless of the method specified in the MRP). If bypassing disinfection units only, the Discharger shall only monitor bacteria indicators daily.
- 3.1.3.2.5.1. **Bypass for Essential Maintenance.** If a Discharger bypasses a treatment unit for essential maintenance pursuant to Attachment D section 1.7.2, the Executive Officer may reduce the accelerated monitoring requirements above if the Discharger (i) monitors effluent at affected discharge points on the first day of the bypass for all constituents with effluent limitations, except chronic toxicity; and (ii) identifies and implements measures to ensure that the bypass will continue to comply with effluent limitations.
- 3.1.3.2.5.2. **Approved Wet Weather Bypasses.** If a Discharger bypasses a treatment unit or permitted outfall during wet weather with Executive Officer approval pursuant to Attachment D section 1.7.4, the Discharger shall monitor flows and collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze daily for TSS using 24 hour composites (or more frequent increments) and for bacteria indicators with effluent limitations using grab samples. If TSS exceeds 45 mg/L in any

composite sample, the Discharger shall also analyze daily the retained samples for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

3.2. Standard Observations – Addition to Attachment D

- 3.2.1. **Receiving Water Observations.** The following requirements only apply when the MRP requires standard observations of receiving waters. Standard observations shall include the following:
- 3.2.1.1. **Floating and Suspended Materials (e.g., oil, grease, algae, and other macroscopic particulate matter)** — presence or absence, source, and size of affected area.
 - 3.2.1.2. **Discoloration and Turbidity** — color, source, and size of affected area.
 - 3.2.1.3. **Odor** — presence or absence, characterization, source, and distance of travel.
 - 3.2.1.4. **Beneficial Water Use** — estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.
 - 3.2.1.5. **Hydrographic Condition** — time and height of high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time).
 - 3.2.1.6. **Weather Conditions** — wind direction, air temperature, and total precipitation during five days prior to observation.
- 3.2.2. **Wastewater Effluent Observations.** The following requirements only apply when the MRP requires standard observations of wastewater effluent. Standard observations shall include the following:
- 3.2.2.1. **Floating and Suspended Material of Wastewater Origin** (e.g., oil, grease, algae, and other macroscopic particulate matter) — presence or absence.
 - 3.2.2.2. **Odor** — presence or absence, characterization, source, distance of travel, and wind direction.
- 3.2.3. **Beach and Shoreline Observations.** The following requirements only apply when the MRP requires standard observations of beaches or shorelines. Standard observations shall include the following:

- 3.2.3.1. **Material of Wastewater Origin** — presence or absence, description of material, estimated size of affected area, and source.
- 3.2.3.2. **Beneficial Use** — estimate of number of people participating in recreational water contact, non-water contact, and fishing activities.
- 3.2.4. **Waste Treatment and/or Disposal Facility Periphery Observations.**
The following requirements only apply when the MRP requires standard observations of the periphery of waste treatment or disposal facilities. Standard observations shall include the following:
 - 3.2.4.1. **Odor** — presence or absence, characterization, source, and distance of travel.
 - 3.2.4.2. **Weather Conditions** — wind direction and estimated velocity.

4. STANDARD PROVISIONS – RECORDS

4.1. Records to be Maintained – Supplement to Attachment D, Provision 4.1

The Discharger shall maintain records in a manner and at a location (e.g., the wastewater treatment plant or the Discharger’s offices) such that the records are accessible to Regional Water Board staff. The minimum retention period specified in Attachment D, Provision IV, shall be extended during the course of any unresolved litigation regarding permit-related discharges, or when requested by Regional Water Board or U.S. EPA, Region IX, staff.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

4.2. Records of Monitoring – Supplement to Attachment D, Provision 4.2

Monitoring records shall include the following:

- 4.2.1. **Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.
- 4.2.2. **Disinfection Process.** For the disinfection process, records shall include the following:
 - 4.2.2.1. For bacteriological analyses:
 - 4.2.2.1.1. Wastewater flow rate at the time of sample collection; and
 - 4.2.2.1.2. Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).

- 4.2.2.2. For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
 - 4.2.2.2.1. Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
 - 4.2.2.2.2. Chlorine dosage (kg/day); and
 - 4.2.2.2.3. Dechlorination chemical dosage (kg/day).
- 4.2.3. **Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - 4.2.3.1. Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
 - 4.2.3.2. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- 4.2.4. **Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
 - 4.2.4.1. Chronological log of treatment process bypasses;
 - 4.2.4.2. Identification of treatment processes bypassed;
 - 4.2.4.3. Beginning and ending dates and times of bypasses;
 - 4.2.4.4. Bypass durations;
 - 4.2.4.5. Estimated bypass volumes; and
 - 4.2.4.6. Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.
- 4.2.5. **Treatment Plant Overflows.** The Discharger shall retain a chronological log of overflows at the treatment plant, including the headworks and all units and appurtenances downstream, and records supporting the information provided in accordance with Provision 5.5.2, below.

4.3. Claims of Confidentiality – Not Supplemented

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information – Not Supplemented

5.2. Signatory and Certification Requirements – Not Supplemented

5.3. Monitoring Reports – Supplement to Attachment D, Provision 5.3

5.3.1. **Self-Monitoring Reports.** For each reporting period established in the MRP, the Discharger shall submit a self-monitoring report to the Regional Water Board in accordance with the requirements listed in the MRP and below:

5.3.1.1. **Transmittal Letter.** Each self-monitoring report shall be submitted with a transmittal letter that includes the following:

- 5.3.1.1.1. Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;
- 5.3.1.1.2. Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;
- 5.3.1.1.3. Causes of the violations;
- 5.3.1.1.4. Corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedules for implementation (the Discharger may refer to previously submitted reports that address the corrective actions);
- 5.3.1.1.5. Explanation for any data invalidation. Data should not be submitted in a self-monitoring report if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate a measurement after submitting it in a self-monitoring report, the Discharger shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. The formal request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation (e.g., laboratory sheet, log entry, test results), and a discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem;
- 5.3.1.1.6. Description of blending, if any. If the Discharger blends, it shall describe the duration of blending events and certify whether the blending complied with all conditions for blending;

- 5.3.1.1.7. Description of other bypasses, if any. If the Discharger bypasses any treatment units (other than blending), it shall describe the duration of the bypasses and effluent quality during those times; and
- 5.3.1.1.8. Signature. The transmittal letter shall be signed in accordance with Attachment D, Provision 5.2.
- 5.3.1.2. **Compliance Evaluation Summary.** Each self-monitoring report shall include a compliance evaluation summary that addresses each parameter for which the permit specifies effluent limitations, the number of samples taken during the monitoring period, and the number of samples that exceed the effluent limitations.
- 5.3.1.3. **More Frequent Monitoring.** If the Discharger monitors any pollutant more frequently than required by the MRP, the Discharger shall include the results of such monitoring in the calculation and reporting of the data submitted in the self-monitoring report.
- 5.3.1.4. **Analysis Results**
- 5.3.1.4.1. **Tabulation.** Each self-monitoring report shall include tabulations of all required analyses and observations, including parameters, dates, times, sample stations, types of samples, test results, method detection limits, method minimum levels, and method reporting levels (if applicable), signed by the laboratory director or other responsible official.
- 5.3.1.4.2. **Multiple Samples.** Unless the MRP specifies otherwise, when determining compliance with effluent limitations (other than instantaneous effluent limitations) and more than one sample result is available, the Discharger shall compute the arithmetic mean. If the data set contains one or more results that are “Detected, but Not Quantified (DNQ) or “Not Detected” (ND), the Discharger shall instead compute the median in accordance with the following procedure:
- 5.3.1.4.2.1. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- 5.3.1.4.2.2. The median of the data set shall be determined. If the data set has an odd number of data points, 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 values around the middle, unless one or both of these values is ND or DNQ, in which case the median shall be the lower of the two results (where DNQ is lower than a quantified value and ND is lower than DNQ).

5.3.1.4.3. **Duplicate Samples.** The Discharger shall report the average of duplicate sample analyses when reporting for a single sample result (or the median if one or more of the duplicates is DNQ or ND [see Provision 5.3.1.4.2, above]). For bacteria indicators, the Discharger shall report the geometric mean of the duplicate analyses.

5.3.1.4.4. **Dioxin-TEQ.** The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the reporting level, the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (MLs) to zero. The Discharger shall calculate and report dioxin-TEQ using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \sum (C_x \times \text{TEF}_x \times \text{BEF}_x)$$

where: C_x = measured or estimated concentration of congener x
 TEF_x = toxicity equivalency factor for congener x
 BEF_x = bioaccumulation equivalency factor for congener x

Table A
Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	2005 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0003	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.03	0.2
2,3,4,7,8-PeCDF	50	0.3	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0003	0.02

- 5.3.1.5. **Results Not Yet Available.** The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses may require additional time to complete analytical processes and report results. In these cases, the Discharger shall describe the circumstances in the self-monitoring report and include the data for these parameters and relevant discussions of any violations in the next self-monitoring report due after the results are available.
- 5.3.1.6. **Annual Self-Monitoring Reports.** By the date specified in the MRP, the Discharger shall submit an annual self-monitoring report covering the previous calendar year. The report shall contain the following:
- 5.3.1.6.1. Comprehensive discussion of treatment plant performance, including documentation of any blending or other bypass events, and compliance with the permit. This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve the performance and reliability of wastewater collection, treatment, or disposal practices;
- 5.3.1.6.2. List of approved analyses, including the following:
- 5.3.1.6.2.1. List of analyses for which the Discharger is certified;
- 5.3.1.6.2.2. List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory need not be submitted but shall be retained onsite); and
- 5.3.1.6.2.3. List of “waived” analyses, as approved;
- 5.3.1.6.3. Plan view drawing or map showing the Discharger’s facility, flow routing, and sampling and observation station locations; and
- 5.3.1.6.4. Results of facility report reviews. The Discharger shall regularly review, revise, and update, as necessary, the Operation and Maintenance Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report so these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall describe or summarize its review and evaluation procedures, recommended or planned actions, and estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure that they remain up-to-date.

5.4. Compliance Schedules – Not supplemented

5.5. Twenty-Four Hour Reporting – Supplement to Attachment D, Provision 5.5

5.5.1. Oil or Other Hazardous Material Spills

- 5.5.1.1. Within 24 hours of becoming aware of a spill of oil or other hazardous material not contained onsite and completely cleaned up, the Discharger shall report as follows:
- 5.5.1.1.1. If the spill exceeds reportable quantities for hazardous materials listed in 40 C.F.R. part 302. The Discharger shall call the California Office of Emergency Services (800 852-7550).
 - 5.5.1.1.2. If the spill does not exceed reportable quantities for hazardous materials listed in 40 C.F.R., part 302, the Discharger shall call the Regional Water Board (510-622-2369).
- 5.5.1.2. The Discharger shall submit a written report to the Regional Water Board within five working days following either of the above telephone notifications unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:
- 5.5.1.2.1. Date and time of spill, and duration if known;
 - 5.5.1.2.2. Location of spill (street address or description of location);
 - 5.5.1.2.3. Nature of material spilled;
 - 5.5.1.2.4. Quantity of material spilled;
 - 5.5.1.2.5. Receiving water body affected, if any;
 - 5.5.1.2.6. Cause of spill;
 - 5.5.1.2.7. Estimated size of affected area;
 - 5.5.1.2.8. Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
 - 5.5.1.2.9. Corrective actions taken to contain, minimize, or clean up the spill;
 - 5.5.1.2.10. Future corrective actions planned to prevent recurrence, and implementation schedule; and
 - 5.5.1.2.11. Persons or agencies notified.

5.5.2. **Unauthorized Municipal Wastewater Treatment Plant Discharges**¹

5.5.2.1. **Two-Hour Notification.** For any unauthorized discharge that enters a drainage channel or surface water, the Discharger shall, as soon as possible, but not later than two hours after becoming aware of the discharge, notify the California Office of Emergency Services (800-852-7550) and the local health officer or director of environmental health with jurisdiction over the affected water body. Notification shall include the following:

- 5.5.2.1.1. Incident description and cause;
- 5.5.2.1.2. Location of threatened or involved waterways or storm drains;
- 5.5.2.1.3. Date and time that the unauthorized discharge started;
- 5.5.2.1.4. Estimated quantity and duration of the unauthorized discharge (to the extent known), and estimated amount recovered;
- 5.5.2.1.5. Level of treatment prior to discharge (e.g., raw wastewater, primary-treated wastewater, or undisinfected secondary-treated wastewater); and
- 5.5.2.1.6. Identity of person reporting the unauthorized discharge.

5.5.2.2. **Five-Day Written Report.** Within five business days following the two-hour notification, the Discharger shall submit a written report that includes, in addition to the information listed in Provision 5.5.2.1, above, the following:

- 5.5.2.2.1. Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
- 5.5.2.2.2. Efforts implemented to minimize public exposure to the unauthorized discharge;
- 5.5.2.2.3. Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of receiving water) and extent of sampling if conducted;
- 5.5.2.2.4. Corrective measures taken to minimize the impact of the unauthorized discharge;

¹ California Code of Regulations, Title 23, section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially-treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment, or disposal system.

- 5.5.2.2.5. Measures to be taken to minimize the potential for a similar unauthorized discharge in the future;
- 5.5.2.2.6. Summary of Spill Prevention Plan or Operation and Maintenance Manual modifications to be made, if necessary, to minimize the potential for future unauthorized discharges; and
- 5.5.2.2.7. Quantity and duration of the unauthorized discharge, and the amount recovered.

5.6. Planned Changes – Not supplemented

5.7. Anticipated Noncompliance – Not supplemented

5.8. Other Noncompliance – Not supplemented

5.9. Other Information – Not supplemented

6. STANDARD PROVISIONS – ENFORCEMENT – NOT SUPPLEMENTED

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – NOT SUPPLEMENTED

8. DEFINITIONS – ADDITION TO ATTACHMENT D

More definitions can be found in Attachment A of this NPDES Permit.

8.1. Arithmetic Calculations

- 8.1.1. **Geometric Mean.** The antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

$$\text{Geometric Mean} = \text{Anti log} (1/N \sum \text{Log } C_i)$$

or

$$\text{Geometric Mean} = (C_1 \times C_2 \times \dots \times C_N)^{1/N}$$

Where “N” is the number of data points for the period analyzed and “C” is the concentration for each of the “N” data points.

- 8.1.2. **Mass Emission Rate.** The rate of discharge expressed in mass. The mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \sum_{i=1}^N Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of samples analyzed in any calendar day and “Q_i” and “C_i” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” grab samples that may be taken in any calendar day. If a composite sample is taken, “C_i” is the concentration measured in the composite sample and “Q_i” is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow weighted average of the same constituent in the combined waste streams as follows:

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of component waste streams and “Q” and “C” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” waste streams. “Q_t” is the total flow rate of the combined waste streams.

- 8.1.3. **Removal Efficiency.** The ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

$$\text{Removal Efficiency (\%)} = 100 \times [1 - (\text{Effluent Concentration} / \text{Influent Concentration})]$$

- 8.2. **Blending** – the practice of bypassing biological treatment units and recombining the bypass wastewater with biologically-treated wastewater.
- 8.3. **Composite Sample** – a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in

the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative protocol.

- 8.4. Duplicate Sample** – a second sample taken from the same source and at the same time as an initial sample (such samples are typically analyzed identically to measure analytical variability).
- 8.5. Grab Sample** – an individual sample collected during a short period not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the sample is collected.
- 8.6. Overflow** – the intentional or unintentional spilling or forcing out of untreated or partially-treated waste from a transport system (e.g., through manholes, at pump stations, or at collection points) upstream of the treatment plant headworks or from any part of a treatment plant.
- 8.7. Priority Pollutants** – those constituents referred to in 40 C.F.R. part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule.
- 8.8. Untreated waste** – raw wastewater.

Table B
List of Monitoring Parameters, Analytical Methods, and Minimum Levels (µg/L)^[1]

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1	Antimony	204.2	-	-	-	-	10	5	50	0.5	5	0.5	-	1000
2	Arsenic	206.3	-	-	-	20	-	2	10	2	2	1	-	1000
3	Beryllium	-	-	-	-	-	20	0.5	2	0.5	1	-	-	1000
4	Cadmium	200 or 213	-	-	-	-	10	0.5	10	0.25	0.5	-	-	1000
5a	Chromium (III)	SM 3500	-	-	-	-	-	-	-	-	-	-	-	-
5b	Chromium (VI)	SM 3500	-	-	-	10	5	-	-	-	-	-	-	1000
	Chromium (total) ^[3]	SM 3500	-	-	-	-	50	2	10	0.5	1	-	-	1000
6	Copper	200.9	-	-	-	-	25	5	10	0.5	2	-	-	1000
7	Lead	200.9	-	-	-	-	20	5	5	0.5	2	-	-	10,000
8	Mercury	1631 ^[4]	-	-	-	-	-	-	-	-	-	-	-	-
9	Nickel	249.2	-	-	-	-	50	5	20	1	5	-	-	1000
10	Selenium	200.8 or SM 3114B or C	-	-	-	-	-	5	10	2	5	1	-	1000
11	Silver	272.2	-	-	-	-	10	1	10	0.25	2	-	-	1000
12	Thallium	279.2	-	-	-	-	10	2	10	1	5	-	-	1000
13	Zinc	200 or 289	-	-	-	-	20	-	20	1	10	-	-	-
14	Cyanide	SM 4500 CN- C or I	-	-	-	5	-	-	-	-	-	-	-	-
15	Asbestos (only required for dischargers to MUN waters) ^[5]	0100.2 ^[6]	-	-	-	-	-	-	-	-	-	-	-	-
16	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613	-	-	-	-	-	-	-	-	-	-	-	-
17	Acrolein	603	2.0	5	-	-	-	-	-	-	-	-	-	-
18	Acrylonitrile	603	2.0	2	-	-	-	-	-	-	-	-	-	-
19	Benzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
33	Ethylbenzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
39	Toluene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
20	Bromoform	601	0.5	2	-	-	-	-	-	-	-	-	-	-
21	Carbon Tetrachloride	601	0.5	2	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
22	Chlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
23	Chlorodibromomethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
24	Chloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
25	2-Chloroethylvinyl Ether	601	1	1	-	-	-	-	-	-	-	-	-	-
26	Chloroform	601	0.5	2	-	-	-	-	-	-	-	-	-	-
75	1,2-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
76	1,3-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
77	1,4-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
27	Dichlorobromomethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
28	1,1-Dichloroethane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
29	1,2-Dichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
30	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
31	1,2-Dichloropropane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
32	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
34	Methyl Bromide or Bromomethane	601	1.0	2	-	-	-	-	-	-	-	-	-	-
35	Methyl Chloride or Chloromethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
36	Methylene Chloride or Dichloromethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
37	1,1,2,2-Tetrachloroethane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
38	Tetrachloroethylene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
40	1,2-Trans-Dichloroethylene	601	0.5	1	-	-	-	-	-	-	-	-	-	-
41	1,1,1-Trichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
42	1,1,2-Trichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
43	Trichloroethene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
44	Vinyl Chloride	601	0.5	2	-	-	-	-	-	-	-	-	-	-
45	2-Chlorophenol	604	2	5	-	-	-	-	-	-	-	-	-	-
46	2,4-Dichlorophenol	604	1	5	-	-	-	-	-	-	-	-	-	-
47	2,4-Dimethylphenol	604	1	2	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
48	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5	-	-	-	-	-	-	-	-	-	-
49	2,4-Dinitrophenol	604	5	5	-	-	-	-	-	-	-	-	-	-
50	2-Nitrophenol	604	-	10	-	-	-	-	-	-	-	-	-	-
51	4-Nitrophenol	604	5	10	-	-	-	-	-	-	-	-	-	-
52	3-Methyl-4-Chlorophenol	604	5	1	-	-	-	-	-	-	-	-	-	-
53	Pentachlorophenol	604	1	5	-	-	-	-	-	-	-	-	-	-
54	Phenol	604	1	1	-	50	-	-	-	-	-	-	-	-
55	2,4,6-Trichlorophenol	604	10	10	-	-	-	-	-	-	-	-	-	-
56	Acenaphthene	610 HPLC	1	1	0.5	-	-	-	-	-	-	-	-	-
57	Acenaphthylene	610 HPLC	-	10	0.2	-	-	-	-	-	-	-	-	-
58	Anthracene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
60	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5	-	-	-	-	-	-	-	-	-	-
61	Benzo(a)Pyrene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
62	Benzo(b) Fluoranthene or 3,4 Benzofluoranthene	610 HPLC	-	10	10	-	-	-	-	-	-	-	-	-
63	Benzo(ghi)Perylene	610 HPLC	-	5	0.1	-	-	-	-	-	-	-	-	-
64	Benzo(k)Fluoranthene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
74	Dibenzo(a,h)Anthracene	610 HPLC	-	10	0.1	-	-	-	-	-	-	-	-	-
86	Fluoranthene	610 HPLC	10	1	0.05	-	-	-	-	-	-	-	-	-
87	Fluorene	610 HPLC	-	10	0.1	-	-	-	-	-	-	-	-	-
92	Indeno(1,2,3-cd)Pyrene	610 HPLC	-	10	0.05	-	-	-	-	-	-	-	-	-
100	Pyrene	610 HPLC	-	10	0.05	-	-	-	-	-	-	-	-	-
68	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5	-	-	-	-	-	-	-	-	-	-
70	Butylbenzyl Phthalate	606 or 625	10	10	-	-	-	-	-	-	-	-	-	-
79	Diethyl Phthalate	606 or 625	10	2	-	-	-	-	-	-	-	-	-	-
80	Dimethyl Phthalate	606 or 625	10	2	-	-	-	-	-	-	-	-	-	-
81	Di-n-Butyl Phthalate	606 or 625	-	10	-	-	-	-	-	-	-	-	-	-
84	Di-n-Octyl Phthalate	606 or 625	-	10	-	-	-	-	-	-	-	-	-	-
59	Benzidine	625	-	5	-	-	-	-	-	-	-	-	-	-
65	Bis(2-Chloroethoxy)Methane	625	-	5	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
66	Bis(2-Chloroethyl)Ether	625	10	1	-	-	-	-	-	-	-	-	-	-
67	Bis(2-Chloroisopropyl) Ether	625	10	2	-	-	-	-	-	-	-	-	-	-
69	4-Bromophenyl Phenyl Ether	625	10	5	-	-	-	-	-	-	-	-	-	-
71	2-Chloronaphthalene	625	-	10	-	-	-	-	-	-	-	-	-	-
72	4-Chlorophenyl Phenyl Ether	625	-	5	-	-	-	-	-	-	-	-	-	-
73	Chrysene	625	-	10	5	-	-	-	-	-	-	-	-	-
78	3,3'-Dichlorobenzidine	625	-	5	-	-	-	-	-	-	-	-	-	-
82	2,4-Dinitrotoluene	625	10	5	-	-	-	-	-	-	-	-	-	-
83	2,6-Dinitrotoluene	625	-	5	-	-	-	-	-	-	-	-	-	-
85	1,2-Diphenylhydrazine ^[7]	625	-	1	-	-	-	-	-	-	-	-	-	-
88	Hexachlorobenzene	625	5	1	-	-	-	-	-	-	-	-	-	-
89	Hexachlorobutadiene	625	5	1	-	-	-	-	-	-	-	-	-	-
90	Hexachlorocyclopentadiene	625	5	5	-	-	-	-	-	-	-	-	-	-
91	Hexachloroethane	625	5	1	-	-	-	-	-	-	-	-	-	-
93	Isophorone	625	10	1	-	-	-	-	-	-	-	-	-	-
94	Naphthalene	625	10	1	0.2	-	-	-	-	-	-	-	-	-
95	Nitrobenzene	625	10	1	-	-	-	-	-	-	-	-	-	-
96	N-Nitrosodimethylamine	625	10	5	-	-	-	-	-	-	-	-	-	-
97	N-Nitrosodi-n-Propylamine	625	10	5	-	-	-	-	-	-	-	-	-	-
98	N-Nitrosodiphenylamine	625	10	1	-	-	-	-	-	-	-	-	-	-
99	Phenanthrene	625	-	5	0.05	-	-	-	-	-	-	-	-	-
101	1,2,4-Trichlorobenzene	625	1	5	-	-	-	-	-	-	-	-	-	-
102	Aldrin	608	0.005	-	-	-	-	-	-	-	-	-	-	-
103	α-BHC	608	0.01	-	-	-	-	-	-	-	-	-	-	-
104	β-BHC	608	0.005	-	-	-	-	-	-	-	-	-	-	-
105	γ-BHC (Lindane)	608	0.02	-	-	-	-	-	-	-	-	-	-	-
106	δ-BHC	608	0.005	-	-	-	-	-	-	-	-	-	-	-
107	Chlordane	608	0.1	-	-	-	-	-	-	-	-	-	-	-
108	4,4'-DDT	608	0.01	-	-	-	-	-	-	-	-	-	-	-
109	4,4'-DDE	608	0.05	-	-	-	-	-	-	-	-	-	-	-
110	4,4'-DDD	608	0.05	-	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
111	Dieldrin	608	0.01	-	-	-	-	-	-	-	-	-	-	-
112	Endosulfan (alpha)	608	0.02	-	-	-	-	-	-	-	-	-	-	-
113	Endosulfan (beta)	608	0.01	-	-	-	-	-	-	-	-	-	-	-
114	Endosulfan Sulfate	608	0.05	-	-	-	-	-	-	-	-	-	-	-
115	Endrin	608	0.01	-	-	-	-	-	-	-	-	-	-	-
116	Endrin Aldehyde	608	0.01	-	-	-	-	-	-	-	-	-	-	-
117	Heptachlor	608	0.01	-	-	-	-	-	-	-	-	-	-	-
118	Heptachlor Epoxide	608	0.01	-	-	-	-	-	-	-	-	-	-	-
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5	-	-	-	-	-	-	-	-	-	-	-
126	Toxaphene	608	0.5	-	-	-	-	-	-	-	-	-	-	-

Footnotes:

- ^[1] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.
- ^[2] The suggested method is the U.S. EPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another U.S. EPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.
- ^[3] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).
- ^[4] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).
- ^[5] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.
- ^[6] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.
- ^[7] Detected as azobenzene.