

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Vincent Christian)
MEETING DATE: January 13, 2016

ITEMS: **6A and 6B**

SUBJECT: **City of St. Helena, City of St. Helena Wastewater Treatment and Reclamation Plant and Wastewater Collection System, St. Helena, Napa County** — Reissuance of NPDES Permit (Item 6A) and Issuance of Cease and Desist Order (Item 6B)

CHRONOLOGY: September 2010 – NPDES Permit reissued

DISCUSSION: Item 6A's Revised Tentative Order (TO) (Appendix A) would reissue the NPDES permit for the City of St. Helena's 0.5 million-gallon-per-day wastewater treatment plant and collection system. The TO would impose more stringent effluent discharge limits for biochemical oxygen demand (BOD) and total suspended solids (TSS) than those in the previous permit. Because the City cannot yet consistently meet the proposed more stringent BOD and TSS limits, Item 6B's Revised Tentative Cease and Desist Order (CDO) (Appendix B) would impose a cease and desist order on the City that contains interim effluent limits for BOD and TSS and a time schedule for the City to modify its treatment plant to meet the new, more stringent limits.

During dry weather, the City discharges treated wastewater from the treatment plant to 88 acres of irrigation fields under Board Order No. 87-090. Consistent with the previous permit, the TO allows discharges from the plant to the Napa River during wet weather when the irrigation fields are saturated and cannot be used. The new, more stringent limits for BOD and TSS are necessary to justify an exception from Basin Plan Prohibition 1, the Board's shallow water discharge prohibition that would otherwise prohibit this discharge to the Napa River. Based on current treatment performance, the previous basis for the exception (i.e., reliable treatment) is no longer justified. In addition, at the existing level of treatment, the wastewater generated from this treatment plant is not suitable for recycling or environmental enhancement.

The City submitted two substantial comments regarding the TO and one regarding the CDO (Appendix C). The City objects to the TO regulating the collection system under an NPDES permit since the collection system is already covered by statewide general waste discharge requirements for collection systems (WDRs). In our Response to Comments (Appendix D), we disagree because the federal Clean Water Act and its implementing regulations define a publicly-owned treatment works such as the City's to include the collection system and require regulation under an NPDES permit. Furthermore, this approach is consistent with similar permits adopted by the Board. We note that compliance with the WDRs will satisfy the TO's requirements for the City's collection system. The City also objects to including violations of Order No. 87-090 (covering discharges to the irrigation fields) in Table F-4 (which describes the City's compliance history). We listed all effluent violations, regardless of the permit violated, to demonstrate that the City's treatment plant cannot reliably meet the existing or the proposed new requirements.

The City objects to the CDO, arguing that including a compliance schedule in the permit would be sufficient. However, the State Water Board's *Policy for Compliance Schedules in NPDES Permits* does not allow compliance schedules in permits except where the more stringent permit limitations are implementing new, revised, or newly interpreted water quality objectives or criteria in water quality standards. Here, the proposed BOD and TSS limits in the TO do not implement new water quality objectives or standards but instead are necessary to justify granting an exemption to our shallow water discharge prohibition. The basis for the exception would be that the City will achieve a higher level of water quality protection due to a higher level of treatment and improved treatment reliability. The CDO is a mechanism for ensuring that the City actually provides the higher level of treatment and improved reliability. We also encourage the City to evaluate recycled water opportunities and ways to achieve net environmental benefits from its discharge.

The City, while indicating that it still objects to the CDO, has indicated that it will not contest either the TO in Item 6A nor the CDO in Item 6B. We expect these items to remain uncontested.

CIWQS Place ID: 258386

Appendices:

- A. Revised Tentative Order
- B. Revised Tentative Cease and Desist Order
- C. Comments
- D. Response to Comments

Appendix A

San Francisco Bay Regional Water Quality Control Board

**REVISED TENTATIVE ORDER No. R2-2016-00XX
NPDES No. CA0038016**

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

Table 1. Discharger Information

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
CIWQS Place Number	258386

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary-treated municipal wastewater	38.502778	-122.437500	Napa River

Table 3. Administrative Information

This Order was adopted on:	DATE
This Order shall become effective on:	March 1, 2016
This Order shall expire on:	February 28, 2021
CIWQS Regulatory Measure	TBD
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	June 1, 2020
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Minor

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above.

Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of St. Helena Wastewater Treatment and Reclamation Plant and its wastewater collection system (Facility) is summarized in Table 1 and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds:

- A. 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 for point source discharges from the Facility to surface waters.
- B. Background and Rationale for Requirements.** The Regional Water Board 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 (Attachment F) 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.
- C. Provisions and Requirements Implementing State Law.** Provision VI.C.5.c is included to implement State law only (California Water Code section 13241). This provision is not required or authorized under the federal CWA; consequently, violations of this provision are not subject to the enforcement remedies available for NPDES violations.
- D. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.
- E. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2010-0105 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of 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 past violations of the previous order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

- B. Discharge at Discharge Point No. 001 is prohibited unless the river flow-to-effluent flow ratio is at least 50:1.
- C. The bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D sections I.G.2 and I.G.3.
- D. Average dry weather influent flow from the treatment plant 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 REC-001 as described in the Monitoring and Reporting Program (MRP, Attachment E).
- E. Any sanitary sewer overflow that results in a discharge of untreated or partially-treated wastewater to waters of the United States is prohibited.
- F. Discharge to the Napa River is prohibited during the dry season each year, from June 1 through October 31. The need to discharge during the dry season may arise as a result of early or late season storms. As soon as possible after determining that discharge will be necessary, the Discharger shall notify the Regional Water Board case manager by phone or email and provide information supporting its determination. Unless the case manager objects, the Discharger may commence discharge but only when absolutely necessary and only to the extent necessary for the reason stated above. The discharge shall be monitored and meet limitations and shall consist of fully treated effluent.

For each dry season discharge event, the Discharger shall submit a report within five business days after the end of the discharge that describes the reasons for the need to discharge, with supporting information, and describe the discharge flow volume, duration, and estimated dilution within the receiving water. In accordance with the Monitoring and Reporting Program (Attachment E), the discharge quality shall be reported in the next monthly self-monitoring report.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

- A. Discharges at Discharge Point No. 001 shall comply with the following effluent limitations, with compliance measured at Monitoring Locations EFF-001 as described in the MRP:

Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	mg/L	15	25	---	---	---
Total Suspended Solids (TSS)	mg/L	15	20	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH ^[1]	standard units	---	---	---	6.5	8.5
Total Residual Chlorine	mg/L	---	---	---	---	0.0 ^[2]
Copper, Total	µg/L	8.3	---	17	---	---
Cyanide, Total	µg/L	15	---	30	---	---
Ammonia, Total	mg/L as N	16	---	39	---	---

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter

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.
- ^[2] 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 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 chlorine residual limit.

- B. Percent Removal.** The average monthly percent removal of biochemical oxygen demand (BOD₅) and total suspended solids (TSS) at Discharge Point No. 001 shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of BOD₅ and TSS, by concentration, for effluent samples collected at Monitoring Location EFF-001 or REC-001 as described in the MRP, shall not exceed 15 percent of the arithmetic mean of the BOD₅ and TSS, by concentration, for influent samples collected at Monitoring Location INF-001 as described in the MRP at approximately the same times during the same period).
- C. Total Coliform.** Discharges at Discharge Point No. 001 shall comply with the following total coliform limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:
1. The five-sample moving median shall not exceed 23 Most Probable Number (MPN)/100 mL.
 2. The daily maximum shall not exceed 240 MPN/100 mL.
- D. Whole Effluent Acute Toxicity.** Discharges at Discharge Point No. 001 shall meet the following acute toxicity limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:
1. A three-sample median value of not less than 90 percent survival; and
 2. A single-sample maximum value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **Three-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if one of the past two bioassay tests also shows less than 90 percent survival.
- **Single sample maximum.** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge complies with the total ammonia effluent limitations in Table 4 of this Order, then such toxicity shall not constitute a violation of this effluent limitation.

V. RECEIVING WATER LIMITATIONS

- A. The discharge shall not cause the following conditions to exist in receiving waters:
1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;
 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;
 3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;
 4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 5. Alteration of temperature beyond present natural background levels;
 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;
 7. Coloration that causes nuisance or adversely affects beneficial uses;
 8. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
 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.
- B. The discharge shall not cause the following limitations to be exceeded in receiving waters at any place within one foot of the water surface:
1. Dissolved Oxygen 7.0 mg/L, minimum
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% 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.
 2. Dissolved Sulfide Natural background levels
 3. 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.
- C. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or the State Water Resources Control Board (State Water Board) as required by the CWA and regulations adopted thereunder. 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.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all “Standard Provisions” in Attachment D.
2. The Discharger shall comply with all applicable provisions of the “Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits” (Attachment G).

B. Monitoring and Reporting

The Discharger shall comply with the MRP (Attachment E) and future revisions thereto and applicable sampling and reporting requirements in Attachments D and G.

C. Special Provisions

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:

- a. 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, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.
- b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect (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 and wasteload allocations in the TMDLs. 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.
- c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.
- d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.
- e. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge.
- f. Or as otherwise authorized by law.

The Discharger may request a permit modification based on any of the circumstances above. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses.

2. Effluent Characterization Study and Report

- a. Study Elements.** The Discharger shall continue to characterize and evaluate the discharge from the following discharge point to verify that the “no” or “unknown” reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall collect representative samples at the monitoring station set forth below, as defined in the MRP, at no less than the frequency specified below:

<u>Discharge Point</u>	<u>Monitoring Location</u>	<u>Minimum Frequency</u>
001	EFF-001 or REC-001	Once

The samples shall be analyzed for the pollutants listed in Attachment G, Table C, except for those pollutants with effluent limitations where the MRP already requires more frequent monitoring, and except for those pollutants for which there are no water quality criteria (see Fact Sheet Table F-6). Samples shall also be analyzed for the pollutants listed in Basin Plan Tables 3-5 and 3-6, except for odor and radioactivity (see Fact Sheet Table F-7). Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G sections III.A.1 and III.A.2.

The Discharger shall evaluate whether concentrations of any of these pollutants 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 excursion above 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 VI.C.3.

b. Reporting Requirements

- i. Routine Reporting.** The Discharger shall, within 45 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:
- (a) Indication that a sample for this study was collected; and
 - (b) Identity of pollutants detected at or above applicable water quality criteria (see Fact Sheet Tables F-6 and F-7) and the detected concentrations of those pollutants.
- ii. Final Report.** The Discharger shall submit a final report that presents all these data with the application for permit reissuance.

3. Receiving Water Characterization Study and Report

- a. Study Elements.** The Discharger shall characterize and evaluate the receiving water at the following discharge points to verify that the “no” or “unknown” reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall collect representative samples at the monitoring stations set forth below, as defined in the MRP, at no less than the frequency specified below:

<u>Monitoring Location</u>	<u>Minimum Frequency</u>
RSW-001	Once
RSW-900	Once

At Monitoring Locations RSW-001 and RSW-900, samples shall be analyzed for the pollutants listed in Attachment G, Table C, except for those pollutants for which there are no water quality criteria (see Fact Sheet Table F-6). At Monitoring Location RSW-900, the samples shall also be analyzed for the pollutants listed in Basin Plan Tables 3-5 and 3-6, except for odor and radioactivity (see Fact Sheet Table F-7). Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G sections III.A.1 and III.A.2.

The Discharger may complete this study on its own or in collaboration with other Napa River dischargers (i.e., the City of Calistoga and the Town of Yountville).

b. Reporting Requirements

- i. Routine Reporting.** The Discharger shall, within 45 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:
- (a) Indication that a sample for this study was collected; and
 - (b) Identity of pollutants detected at or above applicable water quality criteria (see Fact Sheet Tables F-6 and F-7) and the detected concentrations of those pollutants.
- ii. Final Report.** The Discharger shall submit a final report that presents all these data with the application for permit reissuance.

4. Pollutant Minimization Program

- a.** 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.
- b.** The Discharger shall submit an annual report no later than February 28 each year. Each annual report shall include at least the following information:
- i. Brief description of treatment plant.** The description shall include the service area and treatment plant processes.

- ii. 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.
- iii. 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.
- iv. 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.
- v. 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 treatment facilities. The Discharger may provide a forum for employees to provide input.
- vi. 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.
- vii. 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 VI.C.3.b.iii, iv, v, and vi.
- viii. Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.
- ix. Evaluation of Pollutant Minimization Program and task effectiveness.** This Discharger shall use the criteria established in Provision VI.C.3.b.vii to evaluate the program and task effectiveness.
- x. 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.

- c.** The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (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:
 - i.** A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
 - ii.** A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions in Attachment A and reporting protocols described in the MRP.
- d.** If triggered by the reasons set forth in Provision VI.C.3.c, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:
 - i.** 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;
 - ii.** Quarterly monitoring for the reportable priority pollutants in the influent to the Facility. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;
 - iii.** 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;
 - iv.** Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
 - v.** Inclusion of the following specific items within the annual report required by Provision VI.C.3.b above:
 - (a)** All Pollutant Minimization Program monitoring results for the previous year;
 - (b)** List of potential sources of the reportable priority pollutants;
 - (c)** Summary of all actions undertaken pursuant to the control strategy; and
 - (d)** Description of actions to be taken in the following year.

5. Special Provisions for Municipal Facilities

a. Sludge and Biosolids Management

- i. All sludge and biosolids shall be disposed of, managed, or reused in a municipal solid waste landfill; through land application; as a Class A compost; through a waste-to-energy facility or another recognized and approved technology; in a sludge-only landfill; or in a sewage sludge incinerator in accordance with 40 C.F.R. part 503.
- ii. Sludge and biosolids treatment, storage, and disposal, or reuse, shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- iii. The 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 any conditions that would cause drainage from the materials in the storage site. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal stage that may occur.
- iv. Sludge or biosolids disposed in a municipal solid waste landfill shall meet the requirements of 40 C.F.R. part 258.
- v. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity.

- b. Collection System Management.** The Discharger shall properly operate and maintain its collection system (see Attachment D section I.D). The Discharger shall report any noncompliance (see Attachment D sections V.E.1 and V.E.2) and mitigate any discharge from its collection system that violates this Order (see Attachment D section I.C).

The *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Collection System WDRs), State Water Board Order No. 2006-0003 DWQ as amended by State Water Board Order No. WQ 2013-0058-EXEC, has requirements for operation and maintenance of separate sanitary sewer collection systems and for reporting and mitigating sanitary sewer overflows from the separate sanitary sewer portion of the Discharger's collection system. While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G). Following the notification and reporting requirements in the General Collection System WDRs will satisfy the corresponding NPDES reporting requirements specified in Attachment D (as supplemented by Attachment G) for sanitary sewer overflows from the separate sanitary sewer portion of the collection system.

- c. Wastewater Impoundment Integrity.** The Discharger shall take measures necessary to ensure that any impoundment the Discharger uses for storage or treatment of untreated or partially-treated wastewater is sufficiently water tight to prevent leakage of wastewater to groundwater. This shall include inspection and testing of liner integrity prior to putting back into service any impoundment that has been out of service and dry for one month or longer and any necessary routine maintenance and inspection of impoundments while in service.
- d. Standard Operating Procedures for Resource Recovery.** 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, and 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.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation

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

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

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

Detected, but Not Quantified (DNQ)

Sample result 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 by conducting a mixing zone study or modeling the discharge and receiving water.

Effluent Concentration Allowance (ECA)

Value derived from the water quality criterion/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 waste load 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 Bay

Indentation along the coast that encloses an area of oceanic water within a 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 the substance below the ML value 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 are 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 include, 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 do not include 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 set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between n/2 and n/2+1).

Method Detection Limit (MDL)

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

Minimum Level (ML)

Concentration at which the entire analytical system gives 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 the 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 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 that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water 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. 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 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 having a municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)

Measure of variability calculated as follows:

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

where:

x is the observed value;

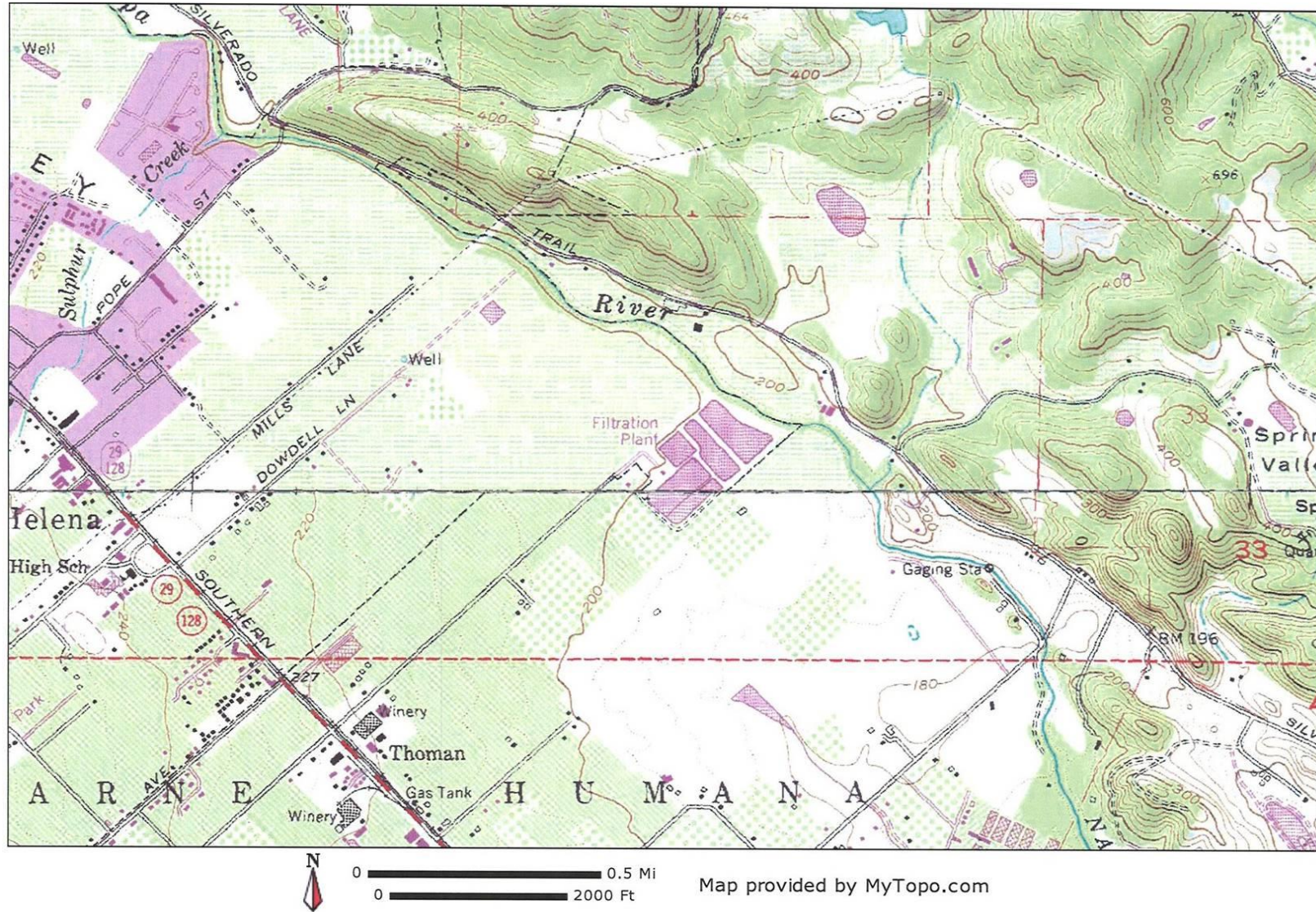
μ is the arithmetic mean of the observed values; and

n is the number of samples.

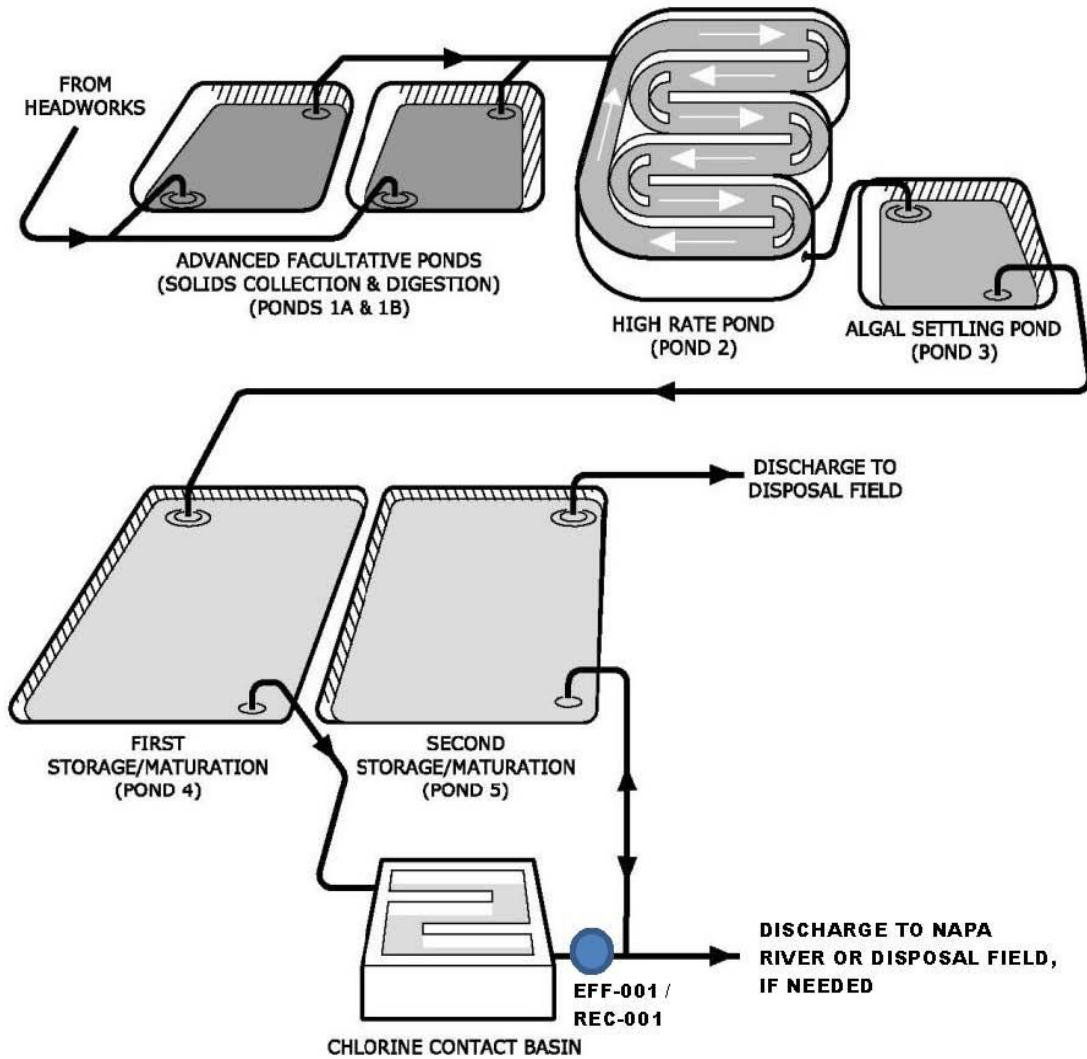
Toxicity Reduction Evaluation (TRE)

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.

ATTACHMENT B – FACILITY MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a 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).)

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the 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).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The 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. 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);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2)); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of 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.)

G. Bypass

1. Definitions

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

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

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

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

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

4. 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 I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

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

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the 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. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A 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)):

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

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

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

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

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

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the 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).)

B. 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).)

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring must be conducted according to test procedures 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, subchapters N or O. 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 required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either (a) the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter, or (b) the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

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

IV. STANDARD PROVISIONS—RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the 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).)
- B.** Records of monitoring information shall include the following:
1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) the analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C.** Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the 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.)

B. Signatory and Certification Requirements

- 1.** All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions—Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
- 2.** 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: (i) 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 (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which 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 assure 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 municipality, 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 (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)

- 3.** All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a.** The authorization is made in writing by a person described in Standard Provisions—Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c.** The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions—Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions—Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 C.F.R. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
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. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The 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 submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written

submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

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

F. Planned Changes

The 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)):

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

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State 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).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions—Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision—Reporting V.E above. (40 C.F.R. § 122.41(1)(7).)

I. 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(1)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Clean Water Act section 308 and 40 C.F.R. sections 122.41(h), 122.41(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 federal and State laws and regulations.

I. GENERAL MONITORING PROVISIONS

- A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. 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.
- B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, 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.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	Any point in the plant at which all waste tributary to the treatment system is present and preceding any phase of treatment that may alter the influent character.
Effluent	EFF-001	Any point after full treatment, including disinfection, that represents all wastewater discharged to the Napa River at Discharge Point No. 001.
Effluent	REC-001	Any point after full treatment, including disinfection, that represents all wastewater directed to irrigation fields or recycled (excluding internal recycle at the treatment plant), and thus not discharged to the Napa River at Discharge Point No. 001.
Receiving Water	RSW-001	Any point in the Napa River upstream of Discharge Point No 001.
Receiving Water	RSW-002	A point in the Napa River approximately 600 feet downstream of Discharge Point No. 001.
Receiving Water	RSW-900	Any point or points in the Napa River for the purpose of collecting data for the Receiving Water Characterization Study identified in Provision VI.C.3 of the Order.
Biosolids	BIO-001	Any point following onsite biosolids processing.

III. INFLUENT MONITORING REQUIREMENTS

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	C-24	3/Week ^[2]
Total Suspended Solids	mg/L	C-24	3/Week ^[2]

Abbreviations:

MGD = million gallons per day
 mg/L = milligrams per liter
 C-24 = 24-hour composite sample
 Continuous/D = measured continuously, and recorded and reported daily
 1/Week = once per week

Footnotes:

- ^[1] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
 - Monthly average flow (MGD)
 - Total monthly flow volume (MG)
 - Maximum daily average flow rates (MGD)
- ^[2] The Discharger shall collect influent samples on the same days as effluent samples. The monitoring frequency may be decreased to once per quarter when not discharging to the Napa River.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Discharges to Napa River

When discharging to the Napa River, the Discharger shall monitor plant effluent at Monitoring Location EFF-001 as follows. When the minimum sampling frequency is weekly, monthly, or quarterly, at least one sample is required for any weekly, monthly, or quarterly period in which a discharge to Discharge Point No. 001 occurs.

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	C-24	3/Week
Total Suspended Solids	mg/L	C-24	3/Week
Oil and Grease	mg/L	C-24	1/Quarter ^[2]
Total Coliform Bacteria	MPN/100 mL ^[3]	Grab	3/Week
Ammonia, Total	mg/L as N	C-24	1/Quarter ^[4]
pH	standard units	Grab	1/Day ^[4,5]
Temperature	°C	Grab	1/Quarter ^[4]
Acute Toxicity ^[6]	% survival	C-24	1/Quarter
Chlorine Residual ^[7]	mg/L	Continuous or Grab	1/Day or Continuous/2H
Copper	µg/L	C-24	1/Month
Cyanide ^[8]	µg/L	Grab	1/Month
River Flow-to-Effluent Flow Ratio ^[9]	---	Calculated	1/Day

Abbreviations:

MGD	= million gallons per day
mg/L	= milligrams per liter
µg/L	= micrograms per liter
mg/L as N	= milligrams per liter as nitrogen
°C	= degrees Celsius
% survival	= percent survival
C-24	= 24-hour composite
Grab	= grab sample
Continuous/D	= measured continuously, and recorded and reported daily
Continuous/2H	= measured continuously or, if infeasible, at least every 2 hours
1/Day	= once per day
3/Week	= three times per week
1/Month	= once per month
1/Quarter	= once per quarter

Footnotes:

- [1] Flow shall be monitored continuously and the following information shall be reported in self-monitoring reports:
 - Daily average flow (MGD)
 - Monthly average flow (MGD)
 - Total monthly flow volume (MG)
 - Maximum daily average flow rates (MGD)
- [2] Oil and grease sampling and analysis shall be conducted in accordance with U.S. EPA Method 1664A.
- [3] Results may be reported as Colony Forming Units/100 milliliters (CFU/100 mL) if the laboratory method used provides results in CFU/100 mL.
- [4] Ammonia monitoring shall occur concurrently with pH and temperature monitoring.
- [5] If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in self-monitoring reports.
- [6] Acute bioassay tests shall be performed in accordance with MRP section V.A.
- [7] Effluent residual chlorine concentrations shall be monitored once per day by grab sample from the recycled water storage pond, or continuously, or at a minimum every other hour, immediately following dechlorination. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section V.C.1.a. 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.
- [8] The Discharger may, at its option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, USEPA Method OI 1677, or an equivalent method in the latest edition.
- [9] 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 a.m. every morning) to the average effluent flow during the previous 24 hours (8 a.m. to 8 a.m.) measured at Monitoring Location EFF-001.

B. Discharges to Irrigation Fields or Reused Offsite

The Discharger shall monitor plant effluent flow at Monitoring Location REC-001 continuously and the following information shall be reported in self-monitoring reports:

- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum daily average flow (MGD)

V. WHOLE EFFLUENT ACUTE TOXICITY TESTING REQUIREMENTS

- A. Compliance with the whole effluent acute toxicity effluent limitations at Discharge Point No. 001 shall be evaluated at Monitoring Location EFF-001 by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
- B. 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.
- C. 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.
- D. 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 may manually adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.
- E. The sample may be taken from final secondary effluent prior to disinfection. Bioassay water 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).

VI. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall monitor receiving waters at Monitoring Location RSW-002 as set forth in the table below. In addition, the Discharger shall obtain flow data from USGS Station No.11458000 at approximately 8 a.m. each day that a discharge to the Napa River occurs (this flow shall be used to calculate the river flow-to-effluent flow ratio; see Discharge Prohibition III.C of the Order).

Table E-4. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	2/Year ^[1]
Temperature	°C	Grab	2/Year ^[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Ammonia	mg/L as N	Grab	2/Year ^[1]
Hardness	mg/L as CaCO ₃	Grab	2/Year ^[1]

Abbreviations:

- MGD = million gallons per day
- °C = degrees Celsius
- mg/L = milligrams per liter
- mg/L as N = milligrams per liter as nitrogen
- mg/L as CaCO₃ = milligrams per liter as calcium carbonate
- Grab = grab sample
- 1/Day = once per day
- 2/Year = twice per year

Footnote:

^[1] Parameters shall be analyzed twice per year during the discharge season; once after the first storm of the season during the interval from October 1 through January 31, and once during the interval from February 1 through May 15.

VII. OTHER MONITORING REQUIREMENTS

The Discharger shall adhere to sludge monitoring requirements required by 40 C.F.R. part 258 (for landfill disposal) and 40 C.F.R. part 503 (for land application).

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping, with modifications shown in section X, below.

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board’s California Integrated Water Quality System (CIWQS) Web site (http://www.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.
2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:
 - a. **Monthly SMRs** — Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provision VI.C.2 (Effluent Characterization Study and Report) and Provision VI.C.3 (Receiving Water Characterization Study and Report) of this Order for information that must also be reported with monthly SMRs.

Monthly SMRs 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.

- b. Annual SMR** — Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in sections V.C.1.f of Attachment G. See Provision VI.C.2 (Effluent Characterization Study and Report), Provision VI.C.3 (Receiving Water Characterization Study and Report), and Provision VI.C.4 (Pollution Minimization Program) of this Order for information that must also be reported with the annual SMR.
- c. Specifications for Submitting SMRs to CIWQS** — The Discharger shall submit analytical results and other information using one of the methods in the table below:

Table E-5. CIWQS Reporting

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
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 (Discharger may select “0:00”) ^[1]	

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.

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

Table E-6. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous	Order effective date	All times
1/2 Hours	Order effective date	Every two-hour period, beginning at midnight (e.g., 12:00 a.m. through 1:59 a.m.)
1/Day	Order effective date	Every 24-hour period, beginning at midnight and continuing through 11:59 p.m.
1/Week or 3/Week	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 ^[1]	Closest January 1, April 1, July 1, or October 1 before or after Order effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2/Year ^[1]	Closest October 1 or February 1 before or after Order effective date	October 1 through January 31 February 1 through May 15
1/Year ^[1]	Closest January 1 before or after Order effective date	January 1 through December 31
Once	Order effective date	Anytime such that monitoring results may be submitted with the application for permit reissuance

Footnote:

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

4. 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:

- a. 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).
- b. 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 laboratory shall 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 (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.

- d. 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.

5. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

C. Discharge Monitoring Reports (DMRs)

At any time during the term of this Order, the State Water Board or the Regional Water Board may notify and require the Discharger to submit DMRs. Once notified, the Discharger shall electronically certify and submit DMRs with SMRs using the Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring.

IX. MODIFICATIONS TO ATTACHMENT G

This MRP modifies Attachment G as indicated below.

A. Attachment G section V.C.1.c.2 is revised as follows:

- 2) When determining compliance with an average monthly or maximum daily effluent limitation, and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - i. 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.
 - ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

B. Attachment G sections V.C.1.f and V.C.1.g are revised as follows, and section V.C.1.h (Reporting data in electronic format) is deleted:

f. Annual self-monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

- 1) Annual compliance summary table of treatment plant performance, including documentation of any blending events (this summary table is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);
- 2) Comprehensive discussion of treatment plant performance 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 performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);
- 3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater (this item is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);
- 4) List of approved analyses, including the following:
 - (i) List of analyses for which the Discharger is certified;
 - (ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and
 - (iii) List of "waived" analyses, as approved;
- 5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;
- 6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all stormwater to the headworks of its wastewater treatment plant); and
- 7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill

Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs addressed as follows, unless the Discharger submits SMRs electronically to CIWQS:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format – *Deleted*

C. Attachment G sections V.E.2, V.E.2.a, and V.E.2.c are revised as follows, and sections V.E.2.b (24-hour Certification) and V.E.2.d (Communication Protocol) are deleted:

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants¹

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and supersede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008.

a. Two (2)-Hour Notification

For any unauthorized discharges that enter a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the California Office of Emergency Services (CalOES, currently 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. Timely notification by the Discharger to CalOES also satisfies notification to the Regional Water Board. Notification shall include the following:

- 1) Incident description and cause;
- 2) Location of threatened or involved waterway(s) or storm drains;

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.

- 3) Date and time the unauthorized discharge started;
 - 4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;
 - 5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfectated secondary treated, and so on); and
 - 6) Identity of the person reporting the unauthorized discharge.
- b. 24-hour Certification – *Deleted*
- c. 5-day Written Report

Within five business days, the Discharger shall submit a written report that includes, in addition to the information required above, the following:

- 1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
 - 2) Efforts implemented to minimize public exposure to the unauthorized discharge;
 - 3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;
 - 4) Corrective measures taken to minimize the impact of the unauthorized discharge;
 - 5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;
 - 6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and
 - 7) Quantity and duration of the unauthorized discharge, and the amount recovered.
- d. Communication Protocol – *Deleted*

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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 II.B of the Order, the Regional Water Board incorporates this Fact Sheet as findings supporting the issuance of the Order.

I. 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, Phone	Steven Palmer, Public Works Director, 707-967-2792
Authorized Person to Sign and Submit Reports	Same as facility contact
Mailing Address	1480 Main Street, St. Helena, CA 94574
Billing Address	Same as mailing address
Facility Type	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Recycled Water Requirements	Regional Water Board Order No. 87-090
Mercury and PCBs Requirements	NPDES Permit No. CA0038849
Permitted Flow	0.50 million gallons per day (MGD) – average daily dry weather design flow
Design Flow	2.8 MGD – peak wet weather flow
Watershed	San Pablo Bay
Receiving Water	Napa River
Receiving Water Type	Freshwater

- A. The City of St. Helena (Discharger) owns and operates the City of St. Helena Wastewater Treatment and Reclamation Plant (plant) and its associated wastewater collection system (collectively, the 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. The Napa River is a water of the United States within the San Pablo Bay watershed. Attachment B provides maps of the area around the Facility, and Attachment C provides a plant flow schematic.

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

- B. The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038016. The Discharger is authorized to discharge subject to waste discharge requirements in this Order at the discharge location described in Table 2 of this Order. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the effective period for the discharge authorization.
- C. Pursuant to 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 federal NPDES regulation requirements for continuation of expired permits. The Discharger was previously subject to Order No. R2-2010-0105 (previous order), which became effective on November 1, 2010. 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 1, 2015. The previous order was therefore administratively extended by operation of law beyond its stated expiration date (October 31, 2015).
- D. The discharge is also regulated under NPDES Permit No. CA0038849, which establishes requirements on mercury and polychlorinated biphenyls (PCBs). This Order does not affect that permit.

The Discharger is also regulated by Order No. 87-090 for the discharge or disposal of plant effluent to the Discharger's spray irrigation fields during dry weather. In contrast, this Order regulates the discharge of plant effluent to the Napa River during wet weather when the irrigation fields are saturated. Discharge to the irrigation fields occurs more commonly than discharge to Napa River.

- E. When applicable, State law requires dischargers to file a petition with the State Water Board's 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.

II. FACILITY DESCRIPTION

A. Wastewater and Biosolids Treatment

1. **Location and Service Area.** The plant is located at 1 Chaix/Thomann Lane in St. Helena. It provides secondary treatment of domestic and commercial source wastewater from the City of St. Helena. The estimated service area population is about 6,000.
2. **Collection System.** The Discharger operates about 18.8 miles of sewer lines and one pump station on Crinella Drive.
3. **Current Wastewater Treatment.** The average dry weather design treatment capacity of the plant is 0.50 million gallons per day (MGD). Wastewater treatment processes include solids grinding by a comminutor, biological treatment through a series of ponds (described in Table F-2), and chlorine disinfection. These treatment processes are capable of meeting secondary treatment standards. The average dry weather flow treated in 2014 was 0.36 MGD. The average annual flow treated in 2014 was 0.47 MGD, and the highest daily flow treated was 1.03 MGD during wet weather.

The previous order had required the Discharger to evaluate the adequacy of its treatment capacity. The Discharger’s March 2015 *Wastewater Facilities Evaluation Update* (Bennett Engineering Services) indicated that the service area population is only growing slightly (less than earlier projections) and that the per capita wastewater flows are declining due to conservation measures. Therefore, the existing treatment system is capable of meeting the Discharger’s near-term waste loads and flows. The report projected that in 2030 the average dry weather flows will be about 0.50 MGD, the current capacity. However, the report also indicated that the Discharger should plan to increase its capacity to 0.65 MGD by 2030 to account for uncertainty.

Table F-2. Wastewater Ponds

Pond	Type	Surface Area (acres)	Depth (feet)	Volume (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	4.0
3	Algae Sedimentation	2.5	9	6.3
4	Maturation/Storage	3.0	11.5	9.8
5	Maturation/Storage	6.7	13	24.6

4. **Future Wastewater Treatment.** To comply with the effluent limitations listed in Table 4 of this Order, the Discharger will design and construct upgrades to the treatment plant.
5. **Biosolids Management.** 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. The Discharger last did this for Pond 1A in 2014.
6. **Stormwater.** Stormwater discharges at the plant are covered under the State Water Board’s General Permit for Industrial Stormwater Discharges (NPDES General Permit CAS000001).

B. Discharge Points and Receiving Waters

Plant effluent is discharged into the Napa River through a shallow water outfall (Discharge Point No. 001). This occurs typically only during wet weather when the Discharger’s irrigation fields are saturated. Normally during dry weather, the Discharger disposes of plant effluent to its 88 acres of fields through spray irrigation pursuant to Order No. 87-090. A small portion of plant effluent, less than 2 percent, is also reused to irrigate a redwood tree farm and to grow mosquito fish.

C. Summary of Existing Requirements and Monitoring Data

The effluent limitations in the previous order and representative monitoring data from the previous order term are presented below:

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limits			Monitoring Data (when discharging to Napa River) (12/1/10-6/30/15)		
		Monthly Average	Weekly Average	Daily Maximum	No. of Samples / No. Below Detection Limit	Highest Daily Discharge	Average ± Standard Deviation ^[1]
Biochemical Oxygen Demand (BOD)	mg/L	30	45	---	21/4	23	8.1 ± 4.6
Total Suspended Solids (TSS)	mg/L	30	45	---	21/3	20	12 ± 5.1
Oil and Grease	mg/L	10	---	20	6/6	<1.4	---
pH	standard units	6.5 - 8.5			4/0	6.3-7.2 ^[2]	6.6 ± 0.4
Residual Chlorine, Total	mg/L	0.0 maximum			---	0.0	---
Copper, Total	µg/L	14	---	24	6/0	6.9	5.0 ± 1.4
Cyanide, Total	µg/L	30	---	15	5/0	23	13 ± 8
Bis(2-ethylhexyl)phthalate	µg/L	6.0	---	3.0	6/6	<3.0	---
Dioxin-TEQ	µg/L	2.6 x 10 ⁻⁸	---	1.3 x 10 ⁻⁸	4/4	<3.40E-07	---
Ammonia, Total	mg/L as N	39	---	16	6/0	16	9.9 ± 4.0
Acute Toxicity	% Survival	Greater than 90% (3-sample median) Not less than 70% (single sample)			6/0	95 ^[3]	98 ± 3

Unit Abbreviations:

mg/L = milligrams per liter
 µg/L = micrograms per liter
 mg/L as N = milligrams per liter as nitrogen
 % = percent

Footnotes:

- ^[1] Samples below the detection limit were assumed to be one-half the detection limit.
^[2] Lowest and highest values.
^[3] Lowest value.

D. Compliance Summary

1. Treatment Plant. The table below lists violations from November 2010 through August 2015 of the previous order and Order No. 87-090, which regulates discharge of the treated effluent to land:

Table F-4. Effluent Limitation Violations

Date	Violation	Unit	Effluent Limit	Reported Value
<i>NPDES Permit Violations</i>				
11/04/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/19/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/20/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/24/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/30/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
12/28/2010	Copper Daily Maximum	µg/L	24	123

09/27/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	37
10/12/2012	Total Coliform Single-Sample Maximum	MPN/100 mL	240	500
10/12/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/23/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
12/26/2012	Residual Chlorine Daily Maximum	mg/L	0.0	0.4
12/27/2012	Residual Chlorine Daily Maximum	mg/L	0.0	0.1
05/22/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
05/23/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/25/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/30/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/31/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
02/12/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
02/13/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
02/14/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
12/22/2014	Cyanide, Total (as CN) 30-Day Average	µg/L	15	16
Water Reclamation Requirements (Order No. 87-090) Violations				
12/24/2010	Biochemical Oxygen Demand Daily Maximum	mg/L	40	76
03/02/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	>220
06/28/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	43
07/03/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	43
09/17/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	42
09/25/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	44
10/08/2012	Biochemical Oxygen Demand Daily Maximum	mg/L	40	87
06/12/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	42
06/20/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	49
09/03/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	45
09/20/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	44
10/04/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	101
10/11/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	51
11/08/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	46
12/04/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	67
12/13/2013	Biochemical Oxygen Demand Daily Maximum	mg/L	40	54
05/01/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	46
06/01/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	46
06/17/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	51
08/08/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	70
08/28/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	59
09/09/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	59
11/25/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	81
11/26/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	61
12/09/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	111
12/10/2014	Biochemical Oxygen Demand Daily Maximum	mg/L	40	124
03/12/2015	Biochemical Oxygen Demand Daily Maximum	mg/L	40	76

2. Collection System. The table below shows the Discharger’s sanitary sewer overflow (SSO) rates (total SSOs per 100 miles of collection system for each of the past four years) and other information along with those for the county and region. The Discharger had three SSOs in 2012 and none since. Future SSOs could potentially reach waters of the U.S. and thus could violate Prohibition III.D of this Order.

Table F-5. SSO Rates (total SSOs/100 miles of sewer)
(based on CIWQS data analysis completed in February 2015)^[1]

	Sewer System Length (miles)	Sewer System Average Age (years) ^[2]	2011	2012	2013	2014
St. Helena	20	30.4	0	6.3	0	0
Napa County average of 3 medium systems (10-99 miles)	29.8	38.9	2.7	4.9	4.2	4.6
San Francisco Bay Region average of 49 medium systems (10-99 miles)	31.8	45.2	10.7	10.9	12.9	10.4
San Francisco Bay Region median of all 132 systems	42	44.5	4.2	4.8	4.5	2.7

Footnotes:

^[1] The State Water Board’s Enrollee’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] Average age as of 2014.

E. Planned Changes

To comply with the new limitations for BOD and TSS in Table 4 of this Order, which reflect pollutant levels achievable by implementing advanced secondary treatment, the Discharger will upgrade the plant. Concurrent with adoption of this Order, the Regional Water Board considered a cease and desist order containing a time schedule of tasks to achieve advanced secondary treatment.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. 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 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 for point source discharges from the Facility to surface waters.

B. California Environmental Quality Act

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

C. State and Federal Regulations, Policies, and Plans

- 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 No. 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 listed below:

Table F-6. Napa River Beneficial Uses

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

- 2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- 3. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in 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. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- 4. Domestic Water Quality.** In accordance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order complies with that policy by requiring discharges to meet, when necessary, maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

- 5. Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 requires 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 No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which is deemed to incorporate 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 No. 68-16.
- 6. 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.
- 7. Recycled Water Policy.** The State Water Board adopted Resolution No. 2013-0003 on January 22, 2013, titled *Policy for Water Quality Control for Recycled Water*, which is intended to promote sustainable local water supplies by increasing the acceptance and promoting the use of recycled water. The policy sets a goal to increase the use of recycled water statewide by at least one million acre feet per year (afy) over the 2002 baseline-level by 2020 and by at least two million afy by 2030. Consistent with the policy, the Regional Water Board is to exercise its authority to the fullest extent possible to encourage the use of recycled water and to develop watershed-based salt and nutrient management plans to ensure use of recycled water does not degrade groundwater resources.

D. Impaired Waters on CWA 303(d) List

In October 2011, 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 non-point sources and are established to achieve the water quality standards for the impaired waters.

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, mercury, nickel, PCBs, selenium, and exotic species. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with TMDLs and associated wasteload allocations.

On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco 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 but are implemented through NPDES Permit No. CA0038849.

On February 29, 2008, U.S. EPA approved a TMDL for pathogens in the Napa River. This Order's 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 more stringent than specified by 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 significantly 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 to the dry season. Also, the three treatment plants discharging to the non-tidal portion of the 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.

The discharge is not a significant source of chlordane, DDT, and dieldrin because these pollutants have not been detected in the discharge. The discharge is also not a source of exotic species because it is disinfected. It is an insignificant source of dioxins and furans, nickel, and selenium because discharge concentrations of these pollutants are consistently below water quality objectives or detection limits.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants 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.

A. Discharge Prohibitions

- 1. Discharge Prohibition III.A (Discharge at a location or in a manner different from that described in this Order is prohibited):** 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.

2. Discharge Prohibition III.B (Discharge is prohibited unless the river flow-to-effluent flow ratio is at least 50:1): This prohibition ensures that the discharge does not fully use the assimilative capacity of the Napa River in consideration of the other permitted wastewater discharges to this same segment of the river, specifically the City of Calistoga and the Town of Yountville, because all dischargers share the same receiving water monitoring for priority pollutants. Attachment F-1 to this Fact Sheet estimates that a ratio of at least 46:1 is necessary to ensure that assimilative capacity is available for all Napa River dischargers. These relatively simple calculations involve the following assumptions:

- The mass of pollutants flowing downstream through the river equals the masses from each source flowing into the river;
- Urban runoff flows are about 15 times the combined flows of the treatment plants discharging to the river; and
- Urban runoff copper loads are about 8 times those of the wastewater discharges.

This prohibition also ensures that the river flow-to-effluent flow ratio is consistent with an underlying assumption of the mixing zone study (June 2010 Effluent Mixing Zone / Dilution Credit Study, Larry Walker Associates) that serves as the basis for dilution credits used to analyze reasonable potential for non-priority pollutants (see Fact Sheet section IV.C.3.c) and to derive water quality-based effluent limits for others (see Fact Sheet section IV.C.4).

3. Discharge Prohibition III.C (Bypass is prohibited): This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D section I.G).

4. Discharge Prohibition III.D (Average dry weather influent flow in excess of 0.50 MGD is prohibited): This Order prohibits an average dry weather influent flow greater than 0.50 MGD because the plant design treatment capacity (i.e., its historic and tested treatment reliability) is 0.50 MGD. Exceeding this flow could result in lower reliability and greater potential to violate water quality requirements.

5. Discharge Prohibition III.E (Sanitary sewer overflows are prohibited): 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 (33 U.S.C. § 1311[b][1][B and C]). A sanitary sewer overflow that results in the discharge of raw sewage or wastewater not meeting this Order's effluent limitations to surface waters is therefore prohibited under the CWA and the Basin Plan.

6. Discharge Prohibition III.F (Discharge to Napa River is prohibited during dry season) and Exception to Non-Tidal Water Discharge Prohibition: Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges to any non-tidal water. Discharge Point No. 001 discharges to the Napa River where the river is non-tidal. Discharge Prohibition III.F of this Order is similar to the previous order and maintains Basin Plan Discharge Prohibition 1 during the dry season when it is feasible to not discharge (i.e., when the treated wastewater can be discharged to irrigation fields or used to supply recycled water demand) and provides an exception when it is infeasible to not discharge (i.e., during wet weather when there is no recycled water demand or demand is low and the irrigation fields are saturated). Basin Plan

section 4.2 provides for exceptions to Basin Plan Discharge Prohibition 1 under certain circumstances:

- An inordinate burden would be placed on a 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:

Significant factors to be considered by the Regional Water Board in reviewing requests for exceptions will be the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequence of such discharges.

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

- At times, avoiding discharge to non-tidal waters is an inordinate burden. There is no feasible alternative to discharge when the irrigation field is saturated during wet weather. Regional Water Board Order No. 87-090 prohibits discharge to the Discharger's irrigation fields when they are saturated. The wastewater volume during these times can far exceed the storage capacity of the ponds.
- An equivalent level of protection is provided when the discharge meets the BOD and TSS effluent limits in Table 4 of the Order, which reflect advanced secondary treatment.

The basis for this Order granting an exception to Basin Plan Discharge Prohibition 1 is different than the basis set forth in the previous order. The previous order granted an exception based on the Discharger providing reliable treatment. However, the compliance record summarized in Fact Sheet section II.D.1 shows that assuming reliable treatment is unjustified. The new basis relies on equivalent protection resulting from more stringent BOD and TSS limits than those in the previous order. More stringent BOD and TSS limits will also improve disinfection performance to ensure compliance with total coliform limits. Moreover, it is reasonable to re-assess the appropriateness of the exemption based simply on "reliable" secondary treatment nearly four decades after the secondary treatment standards were established nationally.

The Discharger cannot immediately comply with the more stringent limits; therefore, concurrent with the adoption of this Order, the Regional Water Board considered a cease and desist order that requires actions leading to compliance with these new more stringent requirements.

B. Conventional and Non-Conventional Pollutant Effluent Limitations

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. The Basin Plan contains additional requirements for certain pollutants.

Table F-7. Secondary Treatment Requirements

Parameter	Monthly Average	Weekly Average
BOD ₅ ^[1]	30 mg/L	45 mg/L
CBOD ₅ ^[1]	25 mg/L	40 mg/L
TSS	30 mg/L	45 mg/L
BOD (or CBOD) and TSS Removal	85 percent or greater	-
pH	6.0 – 9.0 standard units	

Abbreviations:

BOD₅ = biochemical oxygen demand (5 days at 20°C)

CBOD₅ = carbonaceous biochemical oxygen demand (5 days at 20°C)

Footnote:

^[1] CBOD₅ effluent limitations may be substituted for BOD₅ limitations.

2. Effluent Limitations

- a. BOD and TSS.** The BOD and TSS 85 percent removal requirement is based on secondary treatment standards. The weekly and average monthly limitations are based on performance reflective of advanced secondary treatment and are comparable to limits for other facilities in the region operating advanced secondary systems.

The TSS limits are also more stringent than necessary to 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.”

- b. Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- c. pH.** The pH effluent limitations are based on the Secondary Treatment Standards and Basin Plan Table 4-2.
- d. Total Residual Chlorine.** The total residual chlorine effluent limitation is based on Basin Plan Table 4-2.
- e. Total Coliform.** The total coliform effluent limitations are based on Basin Plan Table 4-2A, footnotes b and d. Footnote b allows total coliform limits in lieu of enterococcus limits for intermittent discharges and discharges for which total coliform monitoring is required (e.g., at water recycling facilities). Footnote d 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 are more stringent than the Napa River Pathogen TMDL requires (Basin Plan section 7.8.2 and Table 7.8.2-4 require a five-sample median less than 240 colony-forming units [CFU]/100 mL and a single-sample maximum of 10,000 CFU/100 mL).

C. Toxic Pollutant Effluent Limitations

1. Scope and Authority

For toxic pollutants, this Order contains water quality-based effluent limitations (WQBELs) that implement water quality objectives that protect beneficial uses. CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable 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, 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 (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria and to protect designated uses of receiving waters as specified in the Basin Plan. This Order imposes numeric effluent limitations for toxic pollutants with reasonable potential to cause or contribute to exceedances of water quality standards.

2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point No. 001 discharges to the Napa River. Fact Sheet section III.C.1, above, identifies the beneficial uses of the Napa River. Water quality criteria and objectives to protect these beneficial uses are described below:

- a. Basin Plan Objectives.** The Basin Plan specifies numeric water quality objectives for many pollutants to protect aquatic life, municipal drinking water supplies, and agricultural water supplies (see Basin Plan sections 3.3.21 and 3.3.22). It also specifies several narrative water quality objectives, including objectives for toxicity, bioaccumulation, and temperature. The narrative toxicity objective 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.” The narrative bioaccumulation objective states, “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.” The narrative temperature objective states, “The natural receiving water temperature of inland surface waters shall not be altered...,” and “The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.”

- i. Agricultural Supply Pollutants.** The agricultural supply water quality objectives listed in Basin Plan Table 3-6 include threshold and limit concentrations. Pollutant effects are observable at threshold concentrations and undesirable at limit concentrations; therefore, the limit concentrations listed in Basin Plan Table 3-6 are the applicable water quality objectives for this Order.
- ii. Dioxins and Furans.** With respect to dioxins and furans, the narrative bioaccumulation objective is translated into a numeric criterion as follows. When the CTR was promulgated, U.S. EPA stated its support of 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 WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” (65 Fed. Reg. 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 1998, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. part 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 1998 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 1.4×10^{-8} µg/L for the protection of human health when aquatic organisms are consumed. The 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.

- iii. Total Ammonia.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum for Central San Francisco Bay and upstream waters. Using the receiving water temperature, salinity levels, and pH concentrations, as explained below, this translates to 52 mg/L (as nitrogen) as the chronic objective for total ammonia and 64 mg/L (as nitrogen) as the acute total ammonia objective. Translation is necessary since (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 the pH, salinity, and temperature of the receiving water.

To translate the un-ionized ammonia objectives, pH, salinity, and temperature data were obtained from the Napa River from December 2010 through December 2012. The un-ionized fraction of total ammonia was calculated as follows:

$$\text{For salinity} < 10 \text{ ppt: fraction of NH}_3 = \frac{1}{1 + 10^{(pK - pH)}}$$

Where:

$$pK = 0.09018 + \frac{2729.92}{T}$$

T = Temperature (Kelvin)

The median and maximum un-ionized ammonia fractions were then used to express the daily maximum and the annual average un-ionized objectives as chronic and acute total ammonia criteria. The results were 52 mg/L for the chronic objective and 64 mg/L for the acute objective.

- b. 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.
- c. 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.
- d. Receiving Water Salinity.** The Napa River is a freshwater river in the vicinity of the discharge. As confirmed by the *Collaborative Napa River Receiving Water Evaluation* (2003), Napa River salinity in all samples upstream and downstream of the discharge falls below one part per thousand, indicating a freshwater environment. Therefore, the freshwater water quality objectives from the Basin Plan, NTR, and CTR apply to this discharge.
- e. Receiving Water Hardness.** Ambient hardness data were used to calculate freshwater water quality objectives that are hardness dependent. Six data were collected downstream of the discharge point between April 2010 and December 2012. The average hardness of 69 mg/l was used to calculate the water quality objectives.
- f. Site-Specific Metals Translators.** Effluent limitations for metals must be expressed as total recoverable metal (40 C.F.R. § 122.45[c]). 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. In determining the need for and calculating WQBELs for all applicable metals, CTR default translators were used.

3. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)

Assessing whether a pollutant has reasonable potential to exceed a water quality objective is the fundamental step in determining whether a WQBEL is required.

- a. Available Information.** The reasonable potential analysis for this Order is based on

effluent monitoring data the Discharger collected from November 2010 to March 2015, as supplemented by effluent data the Discharger collected in March 2015 (for pollutant objectives listed in Basin Plan Tables 3-5 and 3-6). The reasonable potential analysis is based on ambient monitoring data the Discharger collected from April 2007 to February 2009 and data reported in *Collaborative Napa River Receiving Water Evaluation* (2003).

In some cases, reasonable potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. Provision VI.C.2 of the Order requires the Discharger to continue monitoring for such constituents in its effluent using analytical methods that provide the best feasible detection limitations. When additional data become available, further analysis will be conducted to determine whether numeric effluent limitations are necessary.

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, Provision VI.C.2 of the Order still requires monitoring for such pollutants. If concentrations are found to have increased significantly, Provision VI.C.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.

- b. Priority Pollutants.** For the priority pollutants (including those with Basin Plan water quality objectives for municipal and agricultural supply beneficial uses), the reasonable potential analysis for this Order is based on the methodology set forth in SIP section 1.3. Dioxin-TEQ is also included because these objectives are intended to protect aquatic life and human health, similar to the priority pollutant objectives. 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:
- i. 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).
 - ii. 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.
 - iii. Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

The maximum effluent concentrations (MECs), most stringent applicable water quality criteria and objectives, and background concentrations used in the analysis are presented below, along with the reasonable potential analysis results (yes or no) for each pollutant. The pollutants that exhibit reasonable potential are copper and cyanide by Trigger 1.

Table F-8. Priority Pollutant Reasonable Potential Analysis

CTR No.	Pollutants	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 Results ^[3]
1	Antimony	6	0.16	1.8	No
2	Arsenic	50	1.4	4.3	No
3	Beryllium	4	<0.09	0.06	U
4	Cadmium	0.85	0.06	<0.02	No
5a	Chromium (III)	50	---	1.8	U
5b	Chromium (VI)	11	<4.5	<0.6	No
6	Copper	6.8	6.9	3.1	Yes
7	Lead	2.0	0.45	1.1	No
8	Mercury (303(d) listed) ^[4]	---	---	---	---
9	Nickel	38	5	4.1	No
10	Selenium (303(d) listed)	5.0	<0.4	3.0	No
11	Silver	2.1	0.04	0.02	No
12	Thallium	1.7	<0.05	<0.01	No
13	Zinc	87	17	12	No
14	Cyanide	5.2	23	<0.6	Yes
16	2,3,7,8-TCDD	1.4 E-08	<5.3 E-07	<3.4 E-07	U
	Dioxin-TEQ	1.4 E-08	<3.4 E-07	1.1 E-11	U
17	Acrolein	320	2.8	<1.2	No
18	Acrylonitrile	0.059	<0.69	<0.58	U
19	Benzene	1	<0.18	<0.10	No
20	Bromoform	4.3	<0.15	<0.10	No
21	Carbon Tetrachloride	0.25	<0.16	<0.06	No
22	Chlorobenzene	70	<0.18	<0.1	No
23	Chlorodibromomethane	0.40	<0.17	<0.08	No
24	Chloroethane	No Criteria	<0.38	<0.11	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.29	U
26	Chloroform	No Criteria	1.4	<0.09	U
27	Dichlorobromomethane	0.56	<0.17	<0.08	No
28	1,1-Dichloroethane	5	<0.19	<0.06	No
29	1,2-Dichloroethane	0.38	<0.18	<0.09	No
30	1,1-Dichloroethylene	0.057	<0.21	<0.07	U
31	1,2-Dichloropropane	0.52	<0.18	<0.07	No
32	1,3-Dichloropropylene	0.5	<0.16	<0.07	No
33	Ethylbenzene	300	<0.26	<0.09	No
34	Methyl Bromide	48	<0.17	<0.06	No
35	Methyl Chloride	No Criteria	<0.23	<0.09	U
36	Methylene Chloride	4.7	<0.2	<0.08	No
37	1,1,2,2-Tetrachloroethane	0.17	<0.1	<0.07	No
38	Tetrachloroethylene	0.8	<0.19	<0.12	No
39	Toluene	150	1.2	<0.06	No
40	1,2-Trans-Dichloroethylene	10	<0.22	<0.09	No
41	1,1,1-Trichloroethane	200	<0.19	<0.11	No
42	1,1,2-Trichloroethane	0.6	<0.16	<0.06	No

CTR No.	Pollutants	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 Results ^[3]
43	Trichloroethylene	2.7	<0.2	<0.07	No
44	Vinyl Chloride	0.5	<0.25	<0.14	No
45	2-Chlorophenol	120	<0.98	<0.80	No
46	2,4-Dichlorophenol	93	<0.99	<0.70	No
47	2,4-Dimethylphenol	540	<0.87	<0.80	No
48	2-Methyl- 4,6-Dinitrophenol	13.4	<0.91	<0.60	No
49	2,4-Dinitrophenol	70	<0.83	<0.60	No
50	2-Nitrophenol	No Criteria	<0.89	<0.60	U
51	4-Nitrophenol	No Criteria	<0.83	<0.70	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.91	<0.60	U
53	Pentachlorophenol	0.28	<0.81	<0.60	U
54	Phenol	21000	<0.69	<0.60	No
55	2,4,6-Trichlorophenol	2.1	<0.97	<0.60	No
56	Acenaphthene	1200	<0.03	<0.03	No
57	Acenaphthylene	No Criteria	<0.03	<0.02	U
58	Anthracene	9600	<0.03	0.02	No
59	Benzidine	0.00012	<5	<5.0	U
60	Benzo(a)Anthracene	0.0044	<0.03	<0.02	U
61	Benzo(a)Pyrene	0.0044	<0.03	<0.02	U
62	Benzo(b)Fluoranthene	0.0044	<0.03	<0.02	U
63	Benzo(ghi)Perylene	No Criteria	<0.03	<0.02	U
64	Benzo(k)Fluoranthene	0.0044	<0.03	<0.03	U
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.93	<0.70	U
66	Bis(2-Chloroethyl)Ether	0.031	<0.93	<0.90	U
67	Bis(2-Chloroisopropyl)Ether	1400	<0.95	<0.60	No
68	Bis(2-Ethylhexyl)Phthalate	1.8	<0.81	<0.60	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.97	<0.97	U
70	Butylbenzyl Phthalate	3000	<0.98	<0.70	No
71	2-Chloronaphthalene	1700	<0.98	<0.98	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.99	<0.99	U
73	Chrysene	0.0044	<0.03	<0.02	U
74	Dibenzo(a,h)Anthracene	0.0044	<0.03	<0.02	U
75	1,2-Dichlorobenzene	600	<0.27	<0.11	No
76	1,3-Dichlorobenzene	400	<0.18	<0.11	No
77	1,4-Dichlorobenzene	5	<0.18	<0.10	No
78	3,3 Dichlorobenzidine	0.04	<5	<0.10	U
79	Diethyl Phthalate	23000	<0.86	<0.60	No
80	Dimethyl Phthalate	313000	<0.97	<0.70	No
81	Di-n-Butyl Phthalate	2700	<0.91	<0.60	No
82	2,4-Dinitrotoluene	0.11	<0.96	<0.60	U
83	2,6-Dinitrotoluene	No Criteria	<0.98	<0.60	U
84	Di-n-Octyl Phthalate	No Criteria	<0.92	<0.70	U
85	1,2-Diphenylhydrazine	0.04	<0.9	<0.60	U
86	Fluoranthene	300	<0.03	<0.02	No

CTR No.	Pollutants	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 Results ^[3]
87	Fluorene	1300	<0.03	<0.02	No
88	Hexachlorobenzene	0.00075	<0.91	<0.91	U
89	Hexachlorobutadiene	0.44	<0.92	<0.92	U
90	Hexachlorocyclopentadiene	50	<0.9	<0.80	No
91	Hexachloroethane	1.9	<0.94	<0.94	No
92	Indeno(1,2,3-cd)Pyrene	0.0044	<0.03	<0.02	U
93	Isophorone	8.4	<0.93	<0.8	No
94	Naphthalene	No Criteria	<0.03	<0.02	U
95	Nitrobenzene	17	<0.95	<0.70	No
96	N-Nitrosodimethylamine	0.00069	<0.88	<0.80	U
97	N-Nitrosodi-n-Propylamine	0.005	<0.97	<0.60	U
98	N-Nitrosodiphenylamine	5	<0.83	<0.60	No
99	Phenanthrene	No Criteria	<0.03	0.04	U
100	Pyrene	960	<0.03	<0.02	No
101	1,2,4-Trichlorobenzene	5	<0.98	<0.98	No
102	Aldrin	0.00013	<0.0047	<0.002	U
103	Alpha-BHC	0.0039	<0.005	<0.002	U
104	Beta-BHC	0.014	<0.004	<0.002	No
105	Gamma-BHC	0.019	<0.004	<0.002	No
106	Delta-BHC	No Criteria	<0.004	<0.02	U
107	Chlordane (303(d) listed)	0.00057	<0.005	<0.003	U
108	4,4'-DDT (303(d) listed)	0.00059	<0.004	<0.003	U
109	4,4'-DDE (linked to DDT)	0.00059	<0.003	<0.003	U
110	4,4'-DDD	0.00083	<0.004	<0.002	U
111	Dieldrin (303d listed)	0.00014	<0.004	<0.003	U
112	Alpha-Endosulfan	0.056	<0.004	<0.003	No
113	beta-Endosulfan	0.056	<0.005	<0.002	No
114	Endosulfan Sulfate	110	<0.005	<0.002	No
115	Endrin	0.036	<0.005	<0.002	No
116	Endrin Aldehyde	0.76	<0.005	<0.002	No
117	Heptachlor	0.00021	<0.005	<0.003	U
118	Heptachlor Epoxide	0.0001	<0.004	<0.002	U
119-125	PCBs sum (303(d) listed) ^[4]	---	---	---	---
126	Toxaphene	0.0002	<0.2	---	U

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter

Footnotes:

- ^[1] The maximum effluent concentration 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 (DL).
- ^[2] The maximum effluent concentration 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, cannot determine (U), if no criteria have been promulgated or data are insufficient.

^[4] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs.

c. Municipal and Agricultural Supply Pollutants. Municipal and agricultural supply are beneficial uses of the Napa River. For water quality objectives designed to protect municipal and agricultural supply (see Basin Plan Tables 3-5 and 3-6), except for those already analyzed in Table F-8, the reasonable potential analysis is based on the *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document or TSD) (EPA/505/2-90-001). The TSD allows reasonable potential analyses using either receiving water concentrations projected from effluent data or measured receiving water concentrations. The analysis presented in Table F-9 is based on the method that predicts receiving water quality based on pollutant concentrations, a confidence interval, and the number of samples available. The first step is to calculate the percentile, p_n , represented by the maximum effluent concentration (MEC) in a set of n samples based on the desired confidence level, e.g., 95% or 99% (the higher the confidence level, the more conservative the analysis).

$$p_n = (1 - \text{confidence level})^{1/n}$$

Only one sample was taken for these pollutants in this analysis. Using a 95 percent confidence interval, the percentile is:

$$p_1 = (1 - 0.95)^{1/1} = 0.05$$

For a normal distribution, the Z-score for 0.95 percentile is:

$$Z_{0.95} = 1.64$$

The concentration multiplying factor (C)¹ corresponding to the MEC percentile (C_{P_n}) and the selected upper bound percentile ($C_{P_{upper\ bound}}$) is found using the following equation, where $\sigma^2 = \ln(CV^2 + 1)$, p is the percentile ($p_{upper\ bound}$ or p_n), and z_p is the standard normal distribution value for the percentile p :

$$C_p = \exp(Z_p \sigma - 0.5 \sigma^2)$$

Assuming the coefficient of variation (CV) is 0.6 (the TSD assumes 0.6 whenever there are fewer than ten samples), the variability $\sigma^2 = \ln(CV^2 + 1) = 0.307$. Therefore,

$$C_{0.05} = \exp(Z_{0.05} \sigma - 0.5 \sigma^2) = \exp(-1.64 * 0.55 - 0.5 * 0.55^2) = 0.35$$

$$C_{upperbound} = C_{0.95} = \exp(Z_{0.95} \sigma - 0.5 \sigma^2) = \exp(1.64 * 0.55 - 0.5 * 0.55^2) = 2.13$$

The concentration ratio (R) is calculated using the following equation:

$$R = \frac{C_{upperbound}}{C_{P_n}} = \frac{2.13}{0.35} = 6.1$$

¹ The TSD refers to these values as “reasonable potential multiplying factors.” In this context, they are directly proportional to the effluent concentrations at the corresponding percentiles.

The Discharger’s mixing zone study (June 2010 Effluent Mixing Zone / Dilution Credit Study, Larry Walker Associates) indicates that the effluent plume is diluted 21:1 (i.e., 20 parts river water for each part effluent or D = 20) about 225 feet downstream from Discharge Point No. 001 when the river flow-to-effluent flow ratio is 50:1. Discharge Prohibition III.B maintains this ratio, and Fact Sheet section IV.C.4.a justifies a mixing zone as large as 225 feet downstream. Therefore, to calculate the receiving water concentration, this analysis assumes a dilution factor of D=20. This dilution factor accounts for upstream discharges (Calistoga), which for the purpose of this calculation are assumed to contain pollutant concentrations similar to those of this discharge (few data are available for the pollutants listed in Table F-7).

Using R=6.1 and D=20, the projected maximum receiving water concentrations (RWC) is then estimated using the following equation:

$$RWC = MEC \times R / \text{dilution factor} = MEC \times 0.305$$

The most stringent applicable water quality objectives, maximum effluent concentrations, and calculated receiving water concentrations (RWC) are presented below, along with the reasonable potential analysis results (yes or no) for each pollutant. Reasonable potential was not exhibited for any pollutants.

Table F-9. Municipal and Agricultural Supply Pollutant Reasonable Potential Analysis

Pollutant	Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^[1]	RWC (µg/L) ^[1]	RPA Results ^[2]
Total Dissolved Solids	500,000	430,000	130,000	No
Electrical Conductivity	900 mmhos/cm	630 mmhos/cm	190 mmhos/cm	No
Aluminum	200	310	95	No
Barium	1,000	44	13	No
Boron	2,000	200	61	No
Chloride	360,000	65	20	No
Cobalt	5,000	1	0.3	No
Fluoride	600	<0.1	<0.1	No
Iron	300	780	240	No
Lithium	2,500	6.9	2.1	No
Manganese	50	140	43	No
Molybdenum	50	0.95	0.58	No
Nitrate (as NO ₃)	45,000	---	---	U
Nitrate + Nitrite (as N)	5,000	1,300	390	No
Nitrite (as N)	1,000	---	---	U
Sulfate	250,000	46,000	28,000	No
Vanadium	1,000	3.3	2.0	No
MBAS (foaming agents)	500	200	61	No
Phenols	1.0	<1.0	<1.0	No
Trihalomethanes	100	1.2	0.40	No
Lindane	0.2	<0.04	<0.04	No
Methoxychlor	30	<0.005	<0.005	No
2,4-D	70	<0.028	<0.028	No
2,4,4-TP Silvex	50	<0.2	<0.2	No

Pollutant	Governing Criterion or Objective (µg/L)	MEC or Minimum DL (µg/L) ^[1]	RWC (µg/L) ^[1]	RPA Results ^[2]
Alachlor	2.0	<0.022	<0.022	No
Atrazine	1.0	<0.048	<0.048	No
Bentazon	18	<0.063	<0.063	No
Dalapon	200	<0.12	<0.12	No
Dinoseb	7.0	<0.2	<0.2	No
Diquat	20	<0.34	<0.34	No
Endothall	100	<2.7	<2.7	No
Ethylene dibromide	0.05	<0.0057	<0.0057	No
Glyphosate	700	<1.6	<1.6	No
Molinate	20	<0.015	<0.015	No
Oxarnyl	50	<0.40	<0.40	No
Picloram	500	<0.015	<0.015	No
Simazine	4.0	<0.028	<0.028	No
Thiobencarb	1.0	<0.008	<0.008	No
1,2-dibromo-3-chloropropane	0.2	<0.01	<0.01	No
Cis-1,2-dichloroethylene	6.0	<0.20	<0.20	No
Methyl-tert-butyl ether	5	<0.15	<0.15	No
Monochlorobenzene	70	<0.5	<0.5	No
Styrene	100	<0.5	<0.5	No
Trichlorofluoromethane	150	<0.29	<0.29	No
1,1,2-trichloro-1,2,2-trifluoromethane	1,200	<1.0	<1.0	No

Unit Abbreviations:

µg/L = micrograms per liter
mmhos/cm = millisiemens per centimeter

Footnotes:

^[1] The maximum effluent concentration 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 (DL).

^[2] RPA Results = Yes, if RWC ≥ WQC
= No, if RWC < WQC or all effluent data are undetected
= Unknown, cannot determine (U), if no criteria have been promulgated or data are insufficient.

d. Ammonia. Reasonable potential for ammonia was evaluated using two approaches, one based on effluent ammonia concentrations and one based on receiving water ammonia concentrations.

i. Effluent Approach. The effluent approach uses the TSD method described in Fact Sheet section IV.C.3.c above. Four un-ionized ammonia effluent samples were collected between December 2010 and December 2012. Using a 95 percent confidence interval, the percentile is:

$$p_1 = (1 - 0.95)^{1/5} = 0.473$$

For a normal distribution, the Z-score for 0.95 percentile is:

$$Z_{0.473} = -0.07$$

The concentration multiplying factor (C) corresponding to the MEC percentile (C_{Pn}) and the selected upper bound percentile ($C_{P\ upper\ bound}$) is found using the following equations, assuming the coefficient of variation (CV) is 0.6:

$$C_{0.05} = \exp(Z_{0.473}\sigma - 0.5\sigma^2) = \exp(-0.07 * 0.55 - 0.5 * 0.55^2) = 0.83$$
$$C_{upperbound} = C_{0.95} = \exp(Z_{0.95}\sigma - 0.5\sigma^2) = \exp(1.64 * 0.55 - 0.5 * 0.55^2) = 2.13$$

The concentration ratio (R) is calculated using the following equation:

$$R = \frac{C_{upperbound}}{C_{Pn}} = \frac{2.13}{0.83} = 2.58$$

Using R=2.32 and assuming no dilution, the projected maximum receiving water concentration (RWC) is estimated using the following equation, where the MEC is expressed as un-ionized ammonia based on effluent temperature and pH as described in Fact Sheet section IV.C.2.a.ii above:

$$RWC = MEC \times R = 0.063 \text{ mg/L} \times 2.58 = 0.16 \text{ mg/L}$$

This projected RWC is equals the acute water quality objective (0.016 mg/L) and is greater than the chronic water quality objective (0.025 mg/L), indicating reasonable potential.

- ii. Receiving Water Approach.** The receiving water approach is based on four receiving water samples collected about 100 feet downstream of the discharge outfall from December 2010 through December 2012. Un-ionized ammonia concentrations are calculated based on receiving water temperature and pH as described in Fact Sheet section IV.C.2.a.ii above. The observed maximum concentration (0.0033 mg/L) was less than the acute water quality objective (0.16 mg/L) and the observed median concentration (0.00042 mg/L) was less than the chronic water quality objective (0.025 mg/L). Therefore, reasonable potential is not triggered using this approach. Nevertheless, since the effluent approach results in reasonable potential, this Order contains ammonia WQBELs.
- e. 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 and effluent monitoring from April 2010 through December 2014 showed no significant difference between the upstream, downstream, and effluent monitoring stations. Therefore, the discharge will not increase the river temperature, and there is no reasonable potential for temperature to exceed the Basin Plan water quality objective.
- f. 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.
- g. 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 are intermittent. For these same

reasons, there is no reasonable potential for the discharge to cause or contribute to exceedances of the chronic toxicity water quality objective.

4. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBELs are based on the procedure specified in SIP section 1.4, which is required for priority pollutants. SIP section 1.4 is used as guidance for other pollutants.

- a. Mixing Zones and Dilution Credits.** The Order provides dilution credits for cyanide and copper. The SIP allows dilution credits for completely-mixed discharges and, under certain circumstances, incompletely-mixed discharges. The discharge is incompletely-mixed as defined in the SIP (more than 5 percent difference in pollutant concentrations in a cross section of the river within two river widths downstream). The outfall does not have a diffuser.

A CORMIX model was run under various flow conditions with a 50:1 river flow-to-wastewater flow ratio. According to the Discharger's mixing zone study (June 2010 Effluent Mixing Zone / Dilution Credit Study, Larry Walker Associates), within 25 feet downstream, the model estimated the plume had 6:1 dilution and spread 5 to 10 feet across the channel due to lateral momentum. At about 100 feet downstream, the plume was fully mixed vertically and spread about 12 feet across the channel. A dye tracer study provided similar results; the dye was diluted by at least 5:1 within this zone and spread across half of the river's width 100 feet downstream.

The dilution ratio was 21:1 by about 225 feet downstream under worst-case conditions (e.g., maximum daily average flow of 8.1 MGD). As discussed in Fact Sheet section IV.C.3.c, above, a mixing zone extending 225 feet downstream was used for the reasonable potential analysis for most non-priority pollutants with municipal or agricultural supply water quality objectives. A mixing zone extending no more than 225 feet downstream from the outfall meets SIP section 1.4.2.2.A requirements because it will not do any of the following:

- i. Compromise the integrity of the water body.** The mixing zone will not compromise the integrity of the receiving waters because it is small (less than 225 feet) relative to the size of the Napa River (55 miles).
- ii. Cause acute toxicity to aquatic life passing through the mixing zone.** Acutely toxic conditions will not exist inside the mixing zone because this Order contains acute toxicity effluent limits and requires acute toxicity testing to demonstrate compliance. These limits do not account for any dilution; therefore, compliance with these limits protects areas within the mixing zones. Bioassay monitoring conducted on fathead minnow during the past permit cycle showed high survival rates, indicating that organisms passing through the mixing zone are unlikely to experience acute toxicity.
- iii. Restrict the passage of aquatic life.** The mixing zone will not restrict the passage of aquatic life because the mixing zone is small compared to the size of the river at the

discharge location. The mixing zone extends about 100 feet downstream and about 12 feet from the bank. The width of the river is about 40 feet. Aquatic organisms can easily pass around the mixing zone.

iv. Adversely affect biologically sensitive or critical habitats, including, but not limited to, habitats of species under federal or State endangered species laws.

The Napa River has 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. Since turtles breathe air, 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 mixing zone extends only 12 feet from the bank and 100 feet downstream, steelhead are unlikely to reside within the mixing zone for any significant duration that could adversely affect them.

v. Produce undesirable or nuisance aquatic life. The mixing zone will not produce undesirable or nuisance aquatic life. Cyanide and copper are not biostimulants or plant nutrients so they will not cause growth of aquatic nuisance 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.

vi. Result in floating debris, oil, or scum. The mixing zone will not result in floating debris, oil, or scum because the effluent receives treatment that will eliminate oils, grease, debris, and scum. In addition, this Order imposes receiving water limitations that prohibit floating debris, oil, or scum at any place and at any time.

vii. Produce objectionable color, odor, taste, or turbidity. The mixing zone will not produce objectionable color, odor, taste, or turbidity because the effluent receives treatment and is disinfected prior to discharge. Secondary treatment generally addresses objectionable odor, taste, and turbidity through the biological degradation of organic compounds and clarification. In addition, this Order prohibits alteration of color or turbidity beyond natural background levels.

viii. Cause objectionable bottom deposits. The mixing zone will not cause objectionable bottom deposits because the effluent receives treatment and is free of settleable solids. In addition, this Order prohibits bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

ix. Cause nuisance. The mixing zone will not cause a nuisance because the effluent receives treatment and is disinfected prior to discharge. This Order prohibits discharges from causing a nuisance, which Water Code section 13050(m) defines 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.
- x. Dominate the receiving water body or overlap a mixing zone from a different outfall.** The mixing zone will not overlap any other mixing zone because the Regional Water Board has not established any other mixing zone nearby.
- xi. Be located at or near any drinking water intake.** There are no drinking water intakes within 225 feet of the outfall.

In compliance with SIP section 1.4.2.2.B, the mixing zone protects all beneficial uses and complies with all regulatory requirements. Copper and cyanide are not carcinogenic, bioaccumulative, or persistent in the environment. Moreover, the Napa River flows freely at the point of discharge and flushes and dilutes pollutants downstream.

SIP section 1.4.2.2 requires mixing zones to be as small as practicable. To ensure that the cyanide and copper mixing zones are as small as possible, the cyanide and copper WQBELs are based on the smallest possible dilution credits (D = 3 and D = 1). Based on current performance, these dilution credits are minimum necessary for the Discharger to consistently meet the resulting WQBELs. These dilution credits are much smaller than the dilution credit associated with the 225-foot mixing zone (D = 20).

- b. WQBEL Calculations.** For those pollutants with reasonable potential, average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) were calculated as shown in the table below:

Table F-10. WQBEL Calculations

PRIORITY POLLUTANTS	Cyanide	Copper	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	mg/L N	mg/L N
Basis and Criteria type	NTR	Basin Plan	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	22	9.9	64	---
Criteria -Chronic	5.2	6.8	---	52
Criteria –Human Health	---	---	---	---
Water Effects Ratio (WER)	1	1	1	1
Lowest WQO	5.2	6.8	64	52
Dilution Factor (D) (if applicable)	3.0	1.0	0	0
No. of samples per month	4	4	4	30 ^[1]
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	Y	N	N	N
Applicable Acute WQO	22	9.9	64	---
Applicable Chronic WQO	5.2	6.8	---	52

PRIORITY POLLUTANTS	Cyanide	Copper	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	mg/L N	mg/L N
HH criteria	220,000	---	---	---
Background (Maximum Conc for Aquatic Life calc)	0.60	3.10	0.40	0.40
Background (Average Conc for Human Health calc)	0.60	---	---	---
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	N
ECA acute	86	17	64	---
ECA chronic	19	10	---	52
ECA HH	700	---	---	---
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N
Avg of effluent data points	12	4.2	8.7	8.7
Std Dev of effluent data points	0.75	0.08	0.34	0.34
CV calculated	0.60	0.80	0.04	0.04
CV (Selected) - Final	0.60	0.60	0.60	0.60
ECA acute mult99	0.32	0.32	0.32	----
ECA chronic mult99	0.53	0.53	---	0.93
LTA acute	28	5.3	21	---
LTA chronic	10	5.5	---	48
minimum of LTAs	10	5.3	21	48
AMEL mult95	1.6	1.6	1.6	1.2
MDEL mult99	3.1	3.1	3.1	3.1
AMEL (aq life)	16	8.3	32	57
MDEL(aq life)	31	17	64	150
MDEL/AMEL Multiplier	2.0	2.0	2.0	2.6
AMEL (human hlth)	700	---	---	---
MDEL (human hlth)	1,400	---	----	---
minimum of AMEL for Aq. life vs HH	16	8.3	32	57
minimum of MDEL for Aq. Life vs HH	31	17	64	150
Previous order limit (average monthly)	15	14	16	16
Previous order limit (maximum daily)	30	24	39	39
Final limit - AMEL	15	8.3	16	16
Final limit - MDEL	30	17	39	39

Footnote:

^[1] Statistical adjustments were made to the total ammonia WQBEL calculations. The SIP assumes a 4-day average concentration and a monthly sampling frequency of 4 days per month to calculate effluent limitations based on

chronic criteria, but the Basin Plan chronic water quality objective for un-ionized ammonia is based on an annual median instead of the typical 4-day average. Therefore, a 365-day average and a monitoring frequency of 30 days per month (the maximum daily sampling frequency in a month since the averaging period for the chronic criteria is longer than 30 days) were used. These statistical adjustments are supported by U.S. EPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia* (64 Fed. Reg. 71974-71980, December 22, 1999).

- c. **Acute Toxicity WQBELs.** This Order includes whole effluent acute toxicity WQBELs based on Basin Plan Table 4-3. Bioassays are to be performed as specified in the MRP. Based on Basin Plan section 3.3.20, if the Discharger can demonstrate that ammonia causes acute toxicity in excess of the whole effluent acute toxicity WQBELs, and that the ammonia in the discharge complies with the total ammonia WQBELs in this Order, then such toxicity does not constitute a violation of the whole effluent acute toxicity WQBELs.

D. Discharge Requirement Considerations

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 WQBELs for dioxin-TEQ from the previous order because data do not indicate reasonable potential to exceed water quality objectives. This is consistent with State Water Board Order No. WQ 2001-16.

2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect 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 increase in flow, a reduced level of treatment, or less stringent effluent limitations relative to those in the previous order.

This Order removes a prohibition in the previous order against discharge of elevated temperature into the Napa River; however, this removal will not degrade water quality because monitoring during the past permit cycle showed no temperature difference between the effluent and receiving water. Moreover, the receiving water limitation in Provision V.5 of the Order requires that present natural background temperatures not be altered.

3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This Order's 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 applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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

VI. RATIONALE FOR PROVISIONS

A. 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 the 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 federal standard provisions in Attachment D. This Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the 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.

B. Monitoring and Reporting

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 Monitoring and Reporting Program (Attachment E) establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII.

C. Special Provisions

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.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the MRP and Attachment G. Monitoring data are necessary to verify that the “no” and “unknown” reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to Water Code section 13267 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.

3. Receiving Water Characterization Study and Report

This Order does not include effluent limitations for pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the MRP and Attachment G. Monitoring data are necessary to verify that the “no” and “unknown” reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to Water Code section 13267 and is necessary to inform the next permit reissuance. The Order allows the Discharger to complete the study on its own or in collaboration with other Napa River dischargers.

4. Pollutant Minimization Program

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

5. Special Provisions for Municipal Facilities

- a. **Sludge and Biosolids Management.** This provision is based on Basin Plan section 4.17 and 40 C.F.R. parts 257 and 503. “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.
- b. **Collection System Management.** The Discharger’s collection system is part of the Facility regulated through this Order. This provision explains this Order’s requirements as they relate to the Discharger’s collection system and promotes consistency with the State Water Board’s *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Collection System WDRs), Order No. 2006-0003-DWQ, as amended by Order No. WQ 2013-0058-EXEC. The General Collection System WDRs contain requirements for collection system operation and maintenance, and for reporting

and mitigating sanitary sewer overflows. They also require agencies to develop sanitary sewer management plans and report all sanitary sewer overflows. The Discharger must comply with both the General Collection System WDRs and this Order.

- c. Wastewater Impoundment Integrity.** This provision is required to ensure that the wastewater storage ponds do not leak and potentially threaten groundwater beneficial uses. Because this provision implements State requirements only and does not contain NPDES-related requirements, the following factors listed in Water Code section 13241 are considered:
- i. Past Present, and Probable Future Beneficial Uses.** This provision will protect the municipal and agricultural beneficial uses of groundwater by ensuring that untreated or partially-treated wastewater does not leak through the impoundments and contaminate the groundwater. In the past, leaking impoundments have contaminated nearby municipal supply wells.
 - ii. Environmental Characteristics of Hydrographic Unit.** This provision will not affect the Napa River hydrographic unit because the impoundments are not intended or designed to serve as a water source for underlying groundwater or the Napa River.
 - iii. Water Quality Conditions That Could Reasonably Be Achieved Through Coordinated Control.** This provision will protect water quality in the area by fully containing wastewater until it meets specified treatment levels.
 - iv. Economic Considerations.** This provision will have no cost beyond the expected expenses to maintain impoundments as designed. This provision could avoid costs associated with potentially contaminating groundwater.
 - v. Need For Developing Housing Within Region.** This provision will not affect the need to develop housing in the region because it does not affect population or land use within the region.
 - vi. Need To Develop and Use Recycled Water.** This provision may improve the Discharger's ability to recycle water by containing water long enough to achieve full treatment to meet water quality criteria for multiple uses, including recycled water. It will also prevent water loss through percolation.
- d. Standard Operating Procedures for Resource Recovery.** Standard Operating Procedures are required for dischargers that accept hauled waste fats, oil, and grease for injection into anaerobic digesters. The development and implementations of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt operations from separate and redundant permitting programs. If the Discharger does not accept fats, oil, and grease for resource recovery purposes, it is not required to develop and implement Standard Operating Procedures.

VII. RATIONALE FOR MONITORING AND REPORTING PROGRAM

Attachment E contains the MRP for this Order. It specifies sampling stations, pollutants to be monitored (including all parameters for which effluent limitations are specified), monitoring

frequencies, and reporting requirements. The following provides the rationale for the MRP requirements.

A. MRP Requirements Rationale

- 1. Influent Monitoring.** Influent flow monitoring is necessary to understand Facility operations and to evaluate compliance with Discharge Prohibition III.D, which prohibits dry weather influent flow greater than 0.5 MGD. Influent BOD₅ and TSS monitoring is necessary to evaluate compliance with this Order’s 85 percent removal requirements.
- 2. Effluent Monitoring.** Effluent flow monitoring at Monitoring Location EFF-001 is necessary to distinguish flows discharged to the Napa River versus flows that go to the irrigation fields. Monitoring for other parameters at this location is necessary to evaluate compliance with this Order’s effluent limitations and to conduct future reasonable potential analyses.

Effluent flow monitoring at Monitoring Location REC-001 is to understand Facility operations and to distinguish flows discharged to the Napa River versus flows that go to the irrigation fields.
- 3. Whole Effluent Acute Toxicity Testing.** Acute whole effluent toxicity tests are necessary to evaluate compliance with the whole effluent acute toxicity effluent limitations.
- 4. Receiving Water Monitoring.** Napa River flow monitoring is needed to determine the river flow-to-effluent flow ratio and to evaluate compliance with Discharge Prohibition III.C. Monitoring for hardness is necessary to determine applicable water quality objectives. Monitoring for pH and temperature is necessary to provide data to translate the Basin Plan’s un-ionized ammonia water quality objectives into total ammonia criteria. Monitoring for total ammonia may be useful to complete future reasonable potential analyses.
- 5. Other Monitoring.** Biosolids monitoring is required pursuant to 40 C.F.R. part 258 (for landfill disposal) or 40 C.F.R. part 503 (for land application).

B. 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.

Table F-11. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent EFF-001	Effluent REC-001	Receiving Water RSW-001 and RSW-002	Biosolids BIO-001
Flow	Continuous/D	Continuous/D	Continuous/D	1/Day ^[1]	----
Biochemical Oxygen Demand 5-day @ 20°C BOD ₅	1/Week ^[2]	3/Week	---	----	----
Total Suspended Solids	1/Week ^[2]	3/Week	---	----	----
Oil and Grease	----	1/Quarter	----	----	----
pH	----	1/Day	----	2/Year ^[3]	----
Temperature	----	1/Quarter	----	2/Year ^[3]	----
Total Coliform Bacteria	----	3/Week	----	----	----

Parameter	Influent INF-001	Effluent EFF-001	Effluent REC-001	Receiving Water RSW-001 and RSW-002	Biosolids BIO-001
Acute Toxicity	----	1/Quarter	----	----	----
Chlorine Residual	----	Continuous/2H	----	----	----
Ammonia, Total	----	1/Quarter	----	2/Year ^[3]	----
Hardness	----	---	----	2/Year ^[3]	----
Copper, Total	----	1/Month	----	---	----
Cyanide, Total	----	1/Month	----	---	----
Other Pollutants	----	Once	----	Once ^[4]	----
River Flow-to-Effluent Flow Ratio	----	1/Day	----	----	----
Paint Filter Test	----	----	----	----	1/Year

Abbreviations:

Continuous/D = measured continuously, and recorded and reported daily
 Continuous/2H= measured continuously or, if infeasible, at least every 2 hours
 1/Day = once per day
 1/Week = once per week
 3/Week = three times per week
 1/Month = once per month
 1/Quarter = once per quarter
 2/Year = twice per year

Footnotes:

- ^[1] Monitoring is required at the USGS Station No.11458000 and only when discharging to the Napa River.
- ^[2] The frequency is to be once per quarter when not discharging to the Napa River.
- ^[3] Monitoring is required only at Monitoring Location RSW-002.
- ^[4] Collaborative downstream monitoring is to be conducted at Monitoring Location RSW-900.

VIII. 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.

A. 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. Notification was provided through *The Napa Valley Register*. The public had access to the agenda and any changes in dates and locations through the Regional Water Board’s website at <http://www.waterboards.ca.gov/sanfranciscobay>.

B. 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 Officer at the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, California 94612, Attention: Vince Christian.

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 November 23, 2015.

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

Date: January 13, 2016
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612
Contact: Vince Christian, (510) 622-2336, vchristian@waterboards.ca.gov.

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

Dates and venues change. The Regional Water Board web address is <http://www.waterboards.ca.gov/sanfranciscobay>, where one could access the current agenda for changes in dates and locations.

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board action:

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

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Information and Copying. The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:00 a.m. and 5:00 p.m. (except noon to 1 p.m.), Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.

F. Register of Interested Persons. Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.

G. Additional Information. Requests for additional information or questions regarding this Order should be directed to Vince Christian, at (510) 622-2336 or vchristian@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's outfalls to a point just downstream of the City of St. Helena's outfall can be expressed as in Equation 1.

$$Q_{\text{RivUpstrm}} + Q_c + Q_{\text{sh}} + Q_y + Q_{\text{urban}} + Q_{\text{trib}} = Q_{\text{RivDnstrm}}$$

Where:

- $Q_{\text{RivUpstrm}}$ = 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
- $Q_{\text{RivDnstrm}}$ = Downstream River Flow

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

$$\text{Equation 1: } Q_{\text{RivUpstrm}} + Q_c + Q_{\text{sh}} + Q_y + Q_{\text{urban}} = Q_{\text{RivDnstrm}}$$

Conservatively using wet weather influent data¹ to estimate the flows of each wastewater treatment facility yields the following:

$$\begin{aligned} Q_{\text{sh}} &= 1.0 \text{ Mgal/day} \\ Q_y &= 0.80 \text{ Mgal/day} = 0.8 * Q_{\text{sh}} \\ Q_c &= 0.89 \text{ Mgal/day} = 0.89 * Q_{\text{sh}} \end{aligned}$$

Thus:

$$\text{Equation 2: } Q_c + Q_{\text{sh}} + Q_y = 2.69 * Q_{\text{sh}} = 2.69 \text{ Mgal/day} = 982 \text{ Mgal/year}$$

Q_{urban} can be estimated through this equation:²

$$Q_{\text{urban}} = C_{\text{mun}} * I * A_{\text{mun}} + C_{\text{ind}} * I * A_{\text{ind}}$$

Where:

- I = rainfall = 30 inches / year
- C_{mun} = municipal runoff fraction = 0.2
- C_{ind} = industrial runoff fraction = 1.0
- A_{mun} = municipal area = 25,667 acres
- A_{ind} = industrial area = 1,447 acres

¹ Average flow data are from Calistoga, St. Helena, and Yountville self-monitoring reports for December 2014, a very wet month.

² This equation, the runoff fractions, and land use areas are from Table 7b of the staff report for the Napa River Sediment Total Maximum Daily Load (January 16, 2007).

$$Q_{urban} = [0.2(30in/year)(25667acres) + 1.0(30in/year)(1447acres)] \times \left[\frac{1.008ft^3/sec}{acre-in/hr} \right] \times \left[\frac{3600sec}{hr} \right] \times \left[\frac{7.4805gal}{ft^3} \right]$$

$$Q_{urban} = 5,359 \text{ Mgal/year}$$

Therefore, Q_{urban} is about 5.5 times the combined flow of the treatment plants.

$$\frac{Q_{urban}}{Q_c + Q_{sh} + Q_y} = \frac{5359 \text{ Mgal/year}}{982 \text{ Mgal/year}} = 5.5$$

$$Q_{Urban} = 5.5 * (Q_c + Q_{sh} + Q_y)$$

Substituting this ratio into Equation 1:

$$Q_{RivUpstrm} + 6.5 * (Q_c + Q_{sh} + Q_y) = Q_{RivDnstrm}$$

Using Equation 2:

$$\text{Equation 3: } Q_{RivUpstrm} = Q_{RivDnstrm} - 17.485 * Q_{sh}$$

Effluent and ambient background data suggest that the Napa River's assimilative capacity may be most limited with respect to copper. Therefore, the minimum river flow-to-effluent flow ratio is calculated by setting the background, effluent, and runoff copper mass equal to the downstream copper mass based on the downstream flow and copper water quality objective (C_o).

The copper mass balance can be expressed as follows:

$$\text{Equation 4: } Q_{RivUpstrm} * C_b + Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y + Q_{urban} * C_{urban} = Q_{RivDnstrm} * C_o$$

Where:

- C_b = Upstream Background 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_{trib} = Tributary Copper Concentration
- C_o = Downstream River Copper Water Quality Objective Concentration

Assuming that urban and non-urban runoff copper loads are about eight times those of the wastewater treatment plants yields the following:³

$$Q_{urban} * C_{urban} = 8 * (Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y)$$

Combining the above equation with Equation 4 yields the following:

$$Q_{RivUpstrm} * C_b + 9 * (Q_c * C_c + Q_{sh} * C_{sh} + Q_y * C_y) = Q_{RivDnstrm} * C_o$$

³ The relative copper loads are from the staff report for the Copper Site Specific Objectives (June 6, 2007).

Substituting Equation 3 into Equation 4 and solving for the river flow-to-effluent flow ratio yields the following:

$$\frac{Q_{RivDnstrm}}{Q_{sh}} = \frac{17.485 \times C_b - 8.01 \times C_c - 9 \times C_{sh} - 7.2 \times C_y}{C_b - C_o}$$

Effluent copper concentrations are conservatively based on each wastewater treatment plant's 95th percentile effluent copper concentration from 2010 through 2014. The downstream copper water quality objective (7.9 mg/L) is based on Basin Plan Table 3-4 and the lowest measured downstream hardness of 82 mg/L. The background copper concentration (3.1 mg/L) is based on the highest upstream measurement the Discharger collected from February 2002 through March 2015.

$$\begin{aligned}C_c &= 8.9 \text{ mg/L} \\C_{sh} &= 6.8 \text{ mg/L} \\C_y &= 16 \text{ mg/L} \\C_o &= 7.9 \text{ mg/L} \\C_b &= 3.1 \text{ mg/L}\end{aligned}$$

Substituting these values into the equation above yields the following:

$$\frac{Q_{RivDnstrm}}{Q_{sh}} = \frac{17.485 \times 3.1 - 8.01 \times 8.9 - 9 \times 6.8 - 9 \times 16}{3.1 - 7.9} = \frac{46}{1}$$

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

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

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

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

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

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

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

C. Duty to Mitigate – This supplements I.C. of Standard Provisions (Attachment D)

- 1. Contingency Plan** - The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal 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 into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below will 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, contain the provisions of a. through g. below.
 - a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

- b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.
 - c. Provisions of emergency standby power.
 - d. Protection against vandalism.
 - e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.
 - f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.
 - g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.
2. **Spill Prevention Plan** - The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:
- a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;
 - b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and
 - c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Discharger.

D. Proper Operation & Maintenance – This supplements I.D of Standard Provisions (Attachment D)

1. **Operation and Maintenance (O&M) Manual** - The Discharger shall maintain an O&M 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 O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.
2. **Wastewater Facilities Status Report** - The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. 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.

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 Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – This section is an addition to Standard Provisions (Attachment D)

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.
2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.
3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Storm Water – This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all storm water flows from the facility to the wastewater treatment plant headworks.

1. Storm Water Pollution Prevention Plan (SWPP Plan)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

- a. To identify pollutant sources that may affect the quality of storm water discharges; and
- b. To identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to storm water discharges, or may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

- a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.
- b. A site map showing the following:
 - 1) Storm water conveyance, drainage, and discharge structures;
 - 2) An outline of the storm water drainage areas for each storm water discharge point;
 - 3) Paved areas and buildings;
 - 4) Areas of actual or potential pollutant contact with storm water or release to storm water, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;
 - 5) Location of existing storm water structural control measures (i.e., berms, coverings, etc.);
 - 6) Surface water locations, including springs and wetlands; and
 - 7) Vehicle service areas.
- c. A narrative description of the following:
 - 1) Wastewater treatment process activity areas;
 - 2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;
 - 3) Material storage, loading, unloading, and access areas;
 - 4) Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharges; and
 - 5) Methods of on-site storage and disposal of significant materials.
- d. A list of pollutants that have a reasonable potential to be present in storm water discharges in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

a. Storm water pollution prevention personnel

Identify specific individuals (and job titles) that are responsible for developing, implementing, and reviewing the SWPP Plan.

b. Good housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm drain conveyance system.

c. Spill prevention and response

Identify areas where significant materials can spill into or otherwise enter storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, and cleanup equipment and procedures shall be identified, as appropriate. The necessary equipment to implement a cleanup shall be available, and personnel shall be trained in proper response, containment, and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source control

Source controls include, for example, elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling of all storm drain inlets with “No Dumping” signs, isolation or separation of industrial and non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Storm water management practices

Storm water management practices are practices other than those that control the sources of pollutants. Such practices include treatment or conveyance structures, such as drop inlets, channels, retention and detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. Sediment and erosion control

Measures to minimize erosion around the storm water drainage and discharge points, such as riprap, revegetation, slope stabilization, etc., shall be described.

g. Employee training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training shall address spill response, good housekeeping, and material management practices. New employee and refresher training schedules shall be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management – This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Discharger must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).
2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).
3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.
4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by U.S. EPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

- 1) The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.
- 2) The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.
- 3) The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).
- 4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does

not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

- i. The Discharger shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and
- ii. The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

- 1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), 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 is in compliance with the monthly average limit.
- 2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.
- 3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).
- 4) 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 limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.
- 5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.
- 6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-

TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Storm Water Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for storm water discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with storm water) is directed to the headworks. For storm water not directed to the headworks during the wet season (October 1 to April 30), the Discharger shall:

- 1) Conduct visual observations of the storm water discharge locations during daylight hours at least once per month during a storm event that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.
- 2) Measure (or estimate) the total volume of storm water discharge, collect grab samples of storm water discharge from at least two storm events that produce significant storm water discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Discharger shall explain in the Annual Report why the grab sample(s) could not be taken in the first 30 minutes.

- 3) Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.
- 4) Samples shall be collected from all locations where storm water is discharged. Samples shall represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that storm water discharges from different locations are substantially identical.
- 5) Records of all storm water monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

- 1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.
- 2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.
- 3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring – This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

<u>Metric tons biosolids/365 days</u>	<u>Frequency</u>
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

- Land Application: Arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc
- Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)
- Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations – This section is an addition to III of Standard Provisions (AttachmentD)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

- a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
- b. *Discoloration and turbidity*: description of color, source, and size of affected area.
- c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.
- d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.
- e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).
- f. *Weather conditions*:
 - 1) Air temperature; and
 - 2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

- a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.
- b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

- a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.
- b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Discharger shall conduct the following for each impoundment:

- a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.
- b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

- c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.
- d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

- a. *Odor*: presence or absence, characterization, source, and distance of travel.
- b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – This supplements IV.A of Standard Provisions (Attachment D)

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of U.S. EPA, Region IX.

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

B. Records of monitoring information shall include – This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

- a. Total volume for each day; and
- b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

- a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - 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
 - 2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:
 - 1) Total volume or mass of dewatered biosolids for each calendar month;
 - 2) Solids content of the dewatered biosolids; and
 - 3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

- a. For bacteriological analyses:
 - 1) Wastewater flow rate at the time of sample collection; and
 - 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 this Order).
- b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:
 - 1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);
 - 2) Chlorine dosage (kg/day); and
 - 3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

- a. Identification of the treatment process bypassed;
- b. Dates and times of bypass beginning and end;
- c. Total bypass duration;

- d. Estimated total bypass volume; and
- e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. Treatment Facility Overflows

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – This section supplements V.C of Standard Provisions (Attachment D)

1. Self Monitoring Reports

For each reporting period established in the MRP, the Discharger shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

Each SMR shall be submitted with a transmittal letter. This letter shall include the following:

- 1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;
- 2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;
- 3) Causes of violations;
- 4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);
- 5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter 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. This 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, etc.], and discussion of the

corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

- 6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and
- 7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

- 1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.
- 2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - i. 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.
 - ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

- 3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (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 (ML) to zero. The Discharger shall calculate and report dioxin-TEQs using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

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

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)	1998 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	0.0001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	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	0.0001	0.02

d. Data reporting for 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 require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Discharger shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

- 1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;
- 2) Comprehensive discussion of treatment plant performance 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 performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);
- 3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;
- 4) List of approved analyses, including the following:
 - (i) List of analyses for which the Discharger is certified;
 - (ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and
 - (iii) List of "waived" analyses, as approved;
- 5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;
- 6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all storm water to the headworks of its wastewater treatment plant); and
- 7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

California Regional Water Quality Control Board

San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

- 1) *Reporting Method*: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).
- 2) *Monthly or Quarterly Reporting Requirements*: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until U.S. EPA approves the electronic signature or other signature technologies, dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).
- 3) *Annual Reporting Requirements*: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

- a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.
- b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.
- c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:
 - 1) Date and time of spill, and duration if known;

- 2) Location of spill (street address or description of location);
- 3) Nature of material spilled;
- 4) Quantity of material involved;
- 5) Receiving water body affected, if any;
- 6) Cause of spill;
- 7) Estimated size of affected area;
- 8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
- 9) Corrective actions taken to contain, minimize, or clean up the spill;
- 10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and
- 11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants¹

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

- 1) Incident description and cause;
- 2) Location of threatened or involved waterway(s) or storm drains;
- 3) Date and time the unauthorized discharge started;
- 4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

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) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and
- 6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

- 1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
- 2) Efforts implemented to minimize public exposure to the unauthorized discharge;
- 3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;
- 4) Corrective measures taken to minimize the impact of the unauthorized discharge;
- 5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;
- 6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and
- 7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B
Summary of Communication Requirements for Unauthorized Discharges¹ from
Municipal Wastewater Treatment Plants

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Electronic ² www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than 24 hours after becoming aware of the unauthorized discharge.	Electronic ³ www.wbers.net
3. Report	Regional Water Board	Within 5 business days of becoming aware of the unauthorized discharge.	Electronic ⁴ www.wbers.net

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.

² In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board’s spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board’s online system in electronic format.

³ In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board’s spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board’s online system in electronic format.

⁴ If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board’s online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board’s online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

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

1. Arithmetic Calculations

- a. Geometric mean is 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:

$$\text{Geometric Mean} = \text{Antilog} \left(\frac{1}{N} \sum_{i=1}^N \text{Log}(C_i) \right)$$

or

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

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

- b. 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.

- c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.
- d. POTW removal efficiency is 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):

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

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.
3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.
4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.
5. Composite sample is 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 rate 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 sampling protocol for the given parameter subject to Executive Officer approval.
6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.
8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.
9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.
10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.
11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.
12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.
14. Untreated waste is raw wastewater.
15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C
List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method ¹⁰	Minimum Levels ¹¹ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	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) ¹²	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 (note) ¹³												
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) ¹⁴	0100.2 ¹⁵												
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										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										

¹⁰ 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.

¹¹ 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.

¹² 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 µg/l).

¹³ 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 µg/l).

¹⁴ MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

¹⁵ Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method ¹⁰	Minimum Levels ¹¹ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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										
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										

CTR No.	Pollutant/Parameter	Analytical Method ¹⁰	Minimum Levels ¹¹ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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										
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 (note) ¹⁶	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											
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											

¹⁶ Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method ¹⁰	Minimum Levels ¹¹ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

Appendix B

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

REVISED TENTATIVE CEASE AND DESIST ORDER No. R2-2016-00XX

**CITY OF ST. HELENA
WASTEWATER TREATMENT AND RECLAMATION PLANT
ST. HELENA, NAPA COUNTY**

WHEREAS the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds the following:

1. The City of St. Helena (Discharger) owns and operates the City of St. Helena Wastewater Treatment and Reclamation Plant (Plant), located at 1 Chaix/Thomann Lane, St. Helena. The Plant provides secondary treatment for domestic and commercial wastewater from the City of St. Helena. The Plant has an average dry weather treatment capacity of 0.5 million gallons per day (MGD) and can treat up to 2.8 MGD during wet weather. Plant treatment processes include a comminuter (solids grinder), a series of treatment ponds, chlorine disinfection, and dechlorination (by natural decomposition or ascorbic acid addition).
2. During dry weather conditions, the Plant discharges to spray irrigation fields in accordance with waste discharge requirements (Order No. 87-090). During wet weather, when the irrigation fields are saturated and discharge is necessary, the Plant discharges to the Napa River in accordance with NPDES permit No. CA0038016 (Order No. R2-2016-00XX) (hereinafter, the 2016 Permit).
3. Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges to non-tidal waters. The Napa River is non-tidal in the vicinity of St. Helena. Basin Plan section 4.2 provides for exceptions to Basin Plan Discharge Prohibition 1 under certain circumstances, including when an inordinate burden would be placed on a discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means. In reissuing the 2016 Permit, the Regional Water Board found that requiring the Discharger to build an outfall to tidal waters (over 40 miles away) or to not discharge under any circumstances, including wet weather, would impose an undue burden. In granting the exception to the discharge prohibition, the Regional Water Board determined that the Discharger must provide equivalent protection when discharging to the Napa River by ensuring that treated effluent meets the limits in Table 1 below. Therefore, the 2016 Permit imposed new, more stringent biochemical oxygen demand (BOD) and total suspended solids (TSS) effluent limits reflective of levels that can be met by implementing advanced secondary treatment:

Table 1: 2016 Permit BOD and TSS Effluent Limits

	Weekly Average	Monthly Average
BOD	25	15
TSS	20	15

Abbreviations:

BOD = biochemical oxygen demand
TSS = total dissolved solids

4. The Plant is currently designed to provide only secondary treatment, not advanced secondary treatment. Plant effluent monitoring data from January 2010 through August 2015 show many instances when the Discharger would not immediately comply with the 2016 Permit's new BOD and TSS effluent limits. Of 66 monthly results, 40 exceed the new monthly BOD limit and 58 exceed the new monthly TSS limit. Because samples were collected roughly weekly, individual results can be compared to the weekly average effluent limits. Of 162 results, 47 exceed the new weekly BOD limit and 95 exceed the new weekly TSS limits.
5. The Plant currently relies on a series of treatment ponds that use aerobic and anaerobic bacteria to reduce organic matter concentrations. To meet the 2016 Permit's new BOD and TSS effluent limits, the Discharger will likely need to incorporate filtration or another process into its treatment system. Such a process could offer an added benefit if the effluent met requirements for unrestricted recycled water use. In its May 2006 "Plant Upgrade and Water Recycling Design Memorandum," the Discharger identified about 65 acres of turf and 4,700 acres of vineyard area that could potentially be irrigated with recycled water. Of these 4,700 acres of vineyard area, 1,148 acres are within City of St. Helena limits.
6. In its March 2015 *Wastewater Facilities Evaluation Update* (Bennett Engineering Services), the Discharger described several potential modifications it could make to improve Plant performance. While the report did not analyze the feasibility of the various options to achieve advanced secondary treatment, it provided three recommendations: (1) construct solids management systems outside the treatment train to manage solids accumulation (in Pond 1) within design recommendations, (2) automate disinfection and dechlorination during river discharges, and (3) construct a rock filter system between Pond 3 and the disinfection facility to improve removal of TSS from algae growth in the ponds. If implemented, the construction of a rock filter system could facilitate compliance with the 2016 Permit's effluent limits.
7. Water Code section 13301 authorizes the Regional Water Board to issue a cease and desist order when it finds that a waste discharge is taking place, or threatening to take place, in violation of requirements or discharge prohibitions prescribed by the Regional Water Board.
8. Because the Discharger will violate or threatens to violate the effluent limits in the 2016 Permit shown in Table 1, this Cease and Desist Order is necessary to ensure that the Discharger achieves compliance. This Order establishes interim requirements and a time schedule for the Discharger to complete necessary actions to address its imminent and threatened violations.
9. Pursuant to Water Code section 13385(j)(3), mandatory minimum penalties required by Water Code sections 13385(h) and (i) do not apply when a discharger complies with a cease and desist order issued pursuant to Water Code section 13301 if the following conditions are met:
 - a. The cease and desist order specifies actions the discharger must take to correct the violations that would otherwise be subject to mandatory minimum penalties;
 - b. The discharger is unable to consistently comply with effluent limits because the effluent limits are new, more stringent, or modified regulatory requirements; new or modified

control measures are necessary to comply with the effluent limits; and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days;

- c.** The Regional Water Board establishes a time schedule of no more than five years for bringing the discharge into compliance. The time schedule must be as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures necessary to comply with the effluent limits. If the time schedule exceeds one year, it must include interim requirements and the dates for their achievement. The interim requirements must include effluent limits for the pollutants of concern and actions and milestones leading to compliance with the limits; and
 - d.** The discharger has prepared and is implementing in a timely and proper manner a pollution prevention plan pursuant to Water Code section 13263.3.
- 10.** Based on Water Code section 13385(j)(3), mandatory minimum penalties required by Water Code sections 13385(h) and (i) do not apply for the following reasons:
- a.** This Cease and Desist Order (Provisions 1 and 2 below) specifies actions the Discharger must take to correct the violations that would otherwise be subject to mandatory minimum penalties.
 - b.** As explained in Finding 4, above, the Discharger is unable to consistently comply with the new, more stringent effluent limits in the 2016 Permit. Moreover, any control measures necessary to comply with the effluent limits (described in Findings 5 and 6, above) cannot be designed, installed, and put into operation within 30 calendar days.
 - c.** This Cease and Desist Order (Provision 2, below) establishes a time schedule of no more than five years for bringing the discharge into compliance. The time schedule is as short as possible because it is the minimum amount of time necessary for the Discharger to modify or rebuild its treatment plant to comply with its effluent limits. As specified in Table 2, the Discharger must evaluate its potential alternatives, and then fund, design, and construct the selected alternative. These tasks are likely to take the allotted time specified in the schedule.

Although the time schedule exceeds one year, this Cease and Desist Order (Provisions 1 and 2, below) imposes interim requirements that include interim BOD and TSS effluent limits and actions and milestones leading to compliance with the limits.
 - d.** The Discharger has prepared and is implementing a pollution prevention plan pursuant to permit requirements. The Discharger's pollution prevention plan meets the substantive requirements of Water Code section 13263.3. The pollution prevention plan aims to reduce influent concentrations of all pollutants of concern.
- 11.** The interim effluent limits in Table 2 are based on the NPDES permit effluent limits in place prior to adoption of the 2016 Permit (i.e., those in Order No. R2-2010-0105). They are

intended to ensure that the Discharger maintains at least its existing performance while completing all tasks the time schedule requires.

12. This Cease and Desist Order is an enforcement action and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.) in accordance with Title 14 of the California Code of Regulations, section 15321.

13. The Regional Water Board notified the Discharger and other interested parties of its intent to consider adoption of this Cease and Desist Order and provided an opportunity to submit written comments and appear at a public hearing. The Regional Water Board, in a public hearing, heard and considered all comments.

IT IS HEREBY ORDERED, in accordance with Water Code section 13301, that the Discharger shall cease and desist from discharging and threatening to discharge wastes in violation of its NPDES permit by complying with the following provisions:

1. **Interim Effluent Limitations.** The Discharger shall comply with the following interim effluent limits:

Table 2: Interim BOD and TSS Effluent Limits

	Weekly Average (mg/L)	Monthly Average (mg/L)
BOD	45	30
TSS	45	30

Unit:

mg/L = milligrams per liter

Abbreviations:

BOD = biochemical oxygen demand

TSS = total dissolved solids

2. **Tasks and Time Schedule.** The Discharger shall complete the actions listed in Table 3 in accordance with the time schedule provided therein. The Discharger shall implement all actions set forth for each deliverable. Upon a written request from the Discharger, with justification, the Executive Officer may modify the deadlines for tasks 2.e through 2.g to account for delays beyond the reasonable control of the Discharger, such as permitting delays by other agencies.

Table 3: Tasks and Time Schedule

Task	Deadline
a. Submit a Draft Feasibility Study that analyzes various options to meet the NPDES permit effluent limits in Table 1. The study shall analyze all of the options described in the March 2015 <i>Wastewater Facilities Evaluation Update</i> and include other options that would achieve compliance. For each option considered, evaluate (i) the anticipated effectiveness and reliability of the treatment, (ii) the amount of time it will take to implement, (iii) the ability to produce recycled water (recycled water uses to be considered shall include those that offset local potable water use or provide environmental enhancement, including but not limited to turf and vineyard irrigation) or the additional efforts required to produce such recycled water, and (iv) the costs.	September 1, 2016
b. Submit a Final Feasibility Study that addresses any Executive Officer comments on the Draft Feasibility Study and identifies a preferred option.	December 1, 2016

Task	Deadline
c. Submit a Draft Workplan for implementation of the preferred option identified in task 2.b and a schedule for implementation. Include a plan and schedule for funding the project.	June 1, 2017
d. Submit a Final Workplan that addresses any Executive Officer comments on the Draft Workplan required by task 2.c.	September 1, 2017
e. Submit notification documenting the beginning of implementation of the Final Workplan.	March 1, 2019
f. Submit documentation of the completion of Final Workplan implementation and begin operation of the new or modified treatment system.	September 1, 2020
g. 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. If the system appears unlikely to meet the requirements of the NPDES permit, identify and implement measures to ensure compliance.	December 1, 2020
h. Achieve full compliance with the 2016 Permit effluent limits listed in Table 1 of this Cease and Desist Order.	February 28, 2021

3. **Consequences of Non-Compliance.** If the Discharger fails to comply with the provisions of this Cease and Desist Order, the Executive Officer is hereby authorized to request the Attorney General to take appropriate actions against the Discharger in accordance with Water Code sections 13331 and 13350. Such actions may include judicial injunctive and civil remedies and/or administrative civil liabilities.

4. **Force Majeure.**¹ If the Discharger is delayed, interrupted, or prevented from meeting the provisions and time schedules of this Cease and Desist Order due to a force majeure, the Discharger shall notify the Executive Officer in writing within ten days of the date the Discharger first knows of the force majeure. The Discharger shall demonstrate that timely compliance with the Cease and Desist Order or any affected deadlines will be actually and necessarily delayed, and that it has taken measures to avoid or mitigate the delay by exercising all reasonable precautions and efforts, whether before or after the occurrence of the force majeure.

5. **Mandatory Minimum Penalties.** Violations of the NPDES permit effluent limits listed in Table 1 shall not be subject to the mandatory minimum penalties required by Water Code sections 13385(h) and (i) as long as the Discharger complies with this Cease and Desist Order in its entirety. If the Discharger fails to comply with this Cease and Desist Order in any way, including but not limited to any interim effluent limit in Table 2 or any requirement of Table 3, the Discharger shall be subject to mandatory minimum penalties for all NPDES permit violations for the entire calendar month during which the Cease and Desist Order non-compliance occurs. If the Discharger returns to compliance, violations of the NPDES permit

¹ A “force majeure” is an event that could not have been anticipated by and is beyond the control of the Discharger, such as an act of God; earthquake, flood, or other natural disaster; civil disturbance or strike; fire or explosion; declared war within the United States; embargo; or other event of similar import and character. “Force majeure” does not include delays caused by funding, contractor performance, equipment delivery and quality, weather, permitting, other construction-related issues, CEQA challenges, initiative litigation, adverse legislation, or legal matters (with the exception of an injunction issued by a court of law specifically preventing construction from occurring).

effluent limits in Table 1 shall again not be subject to mandatory minimum penalties as of the first day of the month following the return to full compliance.

6. **Effective Date.** This Cease and Desist Order shall become effective on the effective date of the 2016 Permit.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Cease and Desist Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

Bruce H. Wolfe
Executive Officer

Appendix C



City of St. Helena

*"We will conduct city affairs on behalf of our citizens
using an open and creative process."*

1480 Main Street
St. Helena, CA 94574
Phone: (707) 967-2792
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www.cityofsthelema.org

November 23, 2015

Vince Christian
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
By email: VChristian@waterboards.ca.gov

**Subject: City of St. Helena Comments on Tentative Orders for the City of St. Helena
Wastewater Treatment and Reclamation Plant - Reissuance of NPDES Permit
No. CA0038016 and Issuance of a Cease and Desist Order**

Dear Mr. Christian:

The City of St. Helena has reviewed the Tentative Orders (TO) issued by the Regional Water Board for a reissued discharge permit and a cease and desist order to compel treatment plant modifications. The attached comments are being submitted to meet the November 23, 2015 deadline for your consideration.

The attached comments focus mainly on whether there is a need for a CDO rather than a time schedule in the permit, as well as the City's belief that it is not appropriate to assume or mandate the types of actions that will be necessary to meet advanced secondary treatment standards. Additionally, the City has concerns with the inclusion of water reclamation permit violations in the context of the separate matter of NPDES permit reissuance. The City appreciates the Regional Water Board staff's efforts on these matters. The City will continue to maintain and operate its wastewater treatment facilities to ensure production of high quality effluent while practicing responsible stewardship of the Upper Napa River.

The City would like to meet with you to discuss our attached comments on these Tentative Orders. Please contact me at 707-968-2624 (or by email, SPalmer@cityofsthelema.org) to schedule a convenient time, or if you have any questions on the attached comments.

Sincerely,

Steven Palmer, P.E.
Public Works Director/City Engineer

Attachment 1 – Comments on Reissuance of NPDES Permit No. CA0038016

November 20, 2015

Page 2

Attachment 1.1 – Process Flow Diagram (.jpg format)

Attachment 2 – Comments on Issuance of Cease and Desist Order

Cc: Bill Johnson, wjohnson@waterboard.ca.gov

Lila Tang, ltang@waterboards.ca.gov

Kristine Corneillie, KrisC@lwa.com

November 23, 2015

City of St. Helena
Wastewater Treatment and Reclamation Facility

Comments Regarding the Reissuance of NPDES Permit No. CA0038016

The City of St. Helena (City) appreciates the opportunity to submit the following comments on the Tentative Order (TO) released for review and comment on October 21, 2015.

For suggested revisions to the text of the TO, underline is shown for suggested additions, and ~~strike-out~~ is shown for suggested deletions. The City requests that any changes based on comments to the Tentative Order, also be made in the Fact Sheet.

Comments Regarding Tentative Order

1. The collections system is thoroughly covered by other requirements and should not be regulated or subject to argument that it is regulated, under this NPDES Permit.

The City agrees that it is subject to the general collection system WDRs as adopted and amended by the State Water Board as well as prohibitions against unauthorized discharge that exist in state and federal law. It causes confusion and may create unnecessary risk to the City to restate the already-existing requirements, and the cross-references in section VI.A.5.b. to Appendices of the permit are not applicable and/or create uncertainty relative to compliance with the State Water Board WDRs and the City's Sewer System Management Plan (SSMP). The City recommends the deletion of discharge prohibition III.E. and section VI.A.5.b. and that the Regional Water Board simply reference, in the Findings, that the collection system and SSOs are addressed in separate WDRs and implementing measures.

III. DISCHARGE PROHIBITIONS

~~E. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.~~

VI. PROVISIONS

C. Special Provisions

5. Special Provisions for Municipal Facilities

~~b. Collection System Management. The Discharger shall properly operate and maintain its collection system (see Attachment D section I.D). The Discharger shall report any noncompliance (see Attachment D sections V.E.1 and V.E.2) and mitigate any discharge from its collection system that violates this Order (see Attachment D section I.C).~~

~~The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (General Collection System WDRs), State Water Board Order No. 2006-0003-DWQ as amended by State Water Board Order No. WQ 2013-0058-EXEC, has requirements for operation and maintenance of separate sanitary sewer collection~~

systems and for reporting and mitigating sanitary sewer overflows from the separate sanitary sewer portion of the Discharger's collection system. While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G). Following the notification and reporting requirements in the General Collection System WDRs will satisfy NPDES the corresponding reporting requirements specified in Attachment D (as supplemented by Attachment G) for sanitary sewer overflows from the separate sanitary sewer portion of the collection system.

2. The frequency of BOD and TSS effluent sampling is inconsistent with the influent sampling requirements and with other dischargers to the Napa River.

The City requests that the BOD and TSS effluent sampling required in **Table E-3. Effluent Monitoring – Monitoring Location EFF-001** be changed to once per week (1/Week) to be consistent with the influent sampling conducted to calculate percent removals for BOD and TSS, and as is found in other nearby Napa River discharger permits. A greater than 1/Week frequency does not provide additional benefit beyond the one paired influent sampling, and is therefore is not an efficient use of City funds.

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	C-24	3/Week <u>1/Week</u>
Total Suspended Solids	mg/L	C-24	3/Week <u>1/Week</u>

3. Please replace Attachment C with the attached process flow diagram which includes the City's sampling locations EFF-001 and REC-001, and a more accurate depiction of effluent flow paths.

See attached .jpg file for insertion into the Final Order.

4. Table F-4 includes violations of Order 87-090, which this Tentative Order is not replacing nor revising. It is not appropriate to highlight violations of a separate permit during the reissuance of Permit No. CA0038016.

The City is working towards addressing the violations italicized in Table F-4 and would like this list of violations related to the reclamation permit removed from this Order. There is no precedent for including violations of a separate order, and the inclusion results in a negative bias towards the wastewater treatment and reclamation plant performance.

5. The Permit should not state that any specific upgrade for advanced secondary treatment is absolutely necessary.

The Permit specifies that the City will be upgrading the wastewater treatment and reclamation plant to advanced secondary treatment. However, the main goal is to meet more stringent effluent limitations for BOD and TSS which are consistent with advanced secondary treatment standards. If the City is able to meet these effluent limitations with process modifications, that may be the path chosen. Table 3 in the CDO specifies the completion of a Feasibility Study. At the time of Study completion, the City will decide what the path forward will be for complying with these more stringent effluent limitations. Therefore, the City requests that the permit language be edited to indicate that the wastewater treatment and reclamation plant processes will be modified “to comply with advanced secondary treatment standards,” rather than saying the City will or implying that it must upgrade facilities in any specific way.

FACT SHEET

II. FACILITY DESCRIPTION

E. Planned Changes

To comply with the advanced secondary treatment limitations for BOD and TSS in Table 4 of this Order, the Discharger will upgrade the plant to meet advanced secondary treatment standards~~from secondary treatment to advanced secondary treatment~~.

Concurrent with adoption of this Order, the Regional Water Board considered a cease and desist order containing a time schedule of tasks to achieve effluent quality consistent with advanced secondary treatment.

Page F-13.

- An equivalent level of protection is provided when the discharge ~~receives~~ meets effluent quality standards consistent with advanced-secondary treatment. The BOD and TSS effluent limits in Table 4 of the Order reflect advanced secondary treatment standards.

November 23, 2015

City of St. Helena
Wastewater Treatment and Reclamation Facility

Comments Regarding the Issuance of Cease and Desist Order

The City of St. Helena (City) appreciates the opportunity to submit the following comments on the tentative Cease and Desist Order (CDO) released for review and comment on October 21, 2015.

For suggested revisions to the text of the tentative CDO, underline is shown for suggested additions, and ~~strike-out~~ is shown for suggested deletions.

Comments Regarding Tentative Cease and Desist Order – Substantive

1. A CDO is inappropriate; A time schedule can and should be included in the Permit

It is unnecessary and inappropriate to impose a CDO based on anticipated exceedances of newly-imposed effluent limitations for BOD and TSS. The Regional Water Board can instead include a schedule for compliance in the body of the permit, and the interim limits in the CDO can be included as interim limits in the permit.

The Fact Sheet (p. F-13) explains that the Regional Water Board would be imposing new BOD and TSS limits based on a changed application or interpretation of the Basin Plan. Obviously, the City must meet effluent limitations that the Board adopts, but it is unduly harsh to also place the City in immediate violation of the new requirements. This also creates unnecessary risk of legal liability. By contrast, if the time schedule and interim limits were included in the permit itself, the compliance obligations and schedule can be the same as if they were in a CDO, but the City would not face the negative consequences of non-compliance with the permit or an enforcement action.

In addition, the compliance schedule should not mandate a means of compliance. Task a. in Table 3 refers to “modify or rebuild” options; task c. refers to a workplan for construction task e. refers to “beginning of construction”; task f. refers to “completion of construction” and task g. refers to “the new treatment system.” The City acknowledges that facilities construction or modification may be necessary. But it is also possible that other activities such as operational modifications, or a combination of actions, can result in compliance. The Regional Water Board can impose effluent limitations but may not prescribe the method of compliance. Task a. should be modified to simply refer to “various options to meet the NPDES permit effluent limitations...” Tasks c., e. and f. should refer to “compliance actions” rather than “construction.” Task g. should (in both sentences) refer to the “effectiveness of the treatment system.” Finally, the date for Task c. appears to be a mistake, as it occurs before Task a. and Task b. This error then propagates through the rest of the time schedule. Appropriate modifications to the dates are provided below.

Table 3: Tasks and Time Schedule

Task	Deadline
<p>a. Submit a Draft Feasibility Study that analyzes various options to modify or rebuild the Plant so that the discharge will meet the NPDES permit effluent limits in Table 1. The study shall analyze all of the options described in the March 2015 <i>Wastewater Facilities Evaluation Update</i> and include other options that would achieve meet advanced secondary treatment standards. For each option considered, evaluate (i) the anticipated effectiveness and reliability of the treatment, (ii) the amount of time it will take to implement, (iii) the ability to produce recycled water (recycled water uses to be considered shall include those that offset local potable water use or provide environmental enhancement, including but not limited to turf and vineyard irrigation) or the additional efforts required to produce such recycled water, and (iv) the costs.</p>	September 1, 2016
<p>b. Submit a Final Feasibility Study that addresses any Executive Officer comments on the Draft Feasibility Study and identifies a preferred option.</p>	December 1, 2016
<p>c. Submit a Draft Workplan for construction of the preferred option identified in task b and a schedule for implementation. Include a plan and schedule for funding the project.</p>	June 1, 2016 <u>2017</u>
<p>d. Submit a Final Workplan that addresses any Executive Officer comments on the Draft Workplan required by task c.</p>	September 1, 2016 <u>2017</u>
<p>e. Submit notification documenting the beginning of construction <u>compliance actions</u>.</p>	September 1, 2018 <u>March 1, 2019</u>
<p>f. Submit documentation of the completion of construction <u>compliance actions</u> and begin operation of the new <u>modified</u> treatment system.</p>	March 1 <u>September 1, 2020</u>
<p>g. Submit a report evaluating the effectiveness of the new <u>modified</u> treatment system and whether the new system is likely to meet the requirements of the NPDES permit. If the effectiveness of the modified <u>new</u> system appears unlikely to meet the requirements of the NPDES permit, identify and implement measures to ensure compliance.</p>	May 31, 2020 <u>December 1, 2020</u>
<p>h. Achieve full compliance with the 2016 NPDES Permit effluent limitations listed in Table 1 of this Cease and Desist Order.</p>	February 28, 2021

2. The CDO should not state that an upgrade to advanced secondary treatment is absolutely necessary.

The Cease and Desist Order specifies that the City will be upgrading the wastewater treatment and reclamation plant to advanced secondary treatment. However, the main goal is to meet more stringent effluent limitations for BOD and TSS which are consistent with advanced secondary treatment standards. If the City is able to meet these effluent limitations with process modifications, that may be the path chosen. Table 3 in the CDO specifies the completion of a Feasibility Study. At the time of Study completion, the City will decide what the path forward will be for complying with these more stringent effluent limitations. Therefore, the City requests that the permit language be edited to indicate that the wastewater treatment and reclamation plant processes will be modified “to comply with advanced secondary treatment standards,” rather than saying the City will or implying that it must upgrade facilities in any specific way.

3. Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges...the Regional Water Board determined that the Discharger must provide equivalent protection when discharging to the Napa River by providing treated effluent that meets advanced secondary treatment standards. Therefore, the 2016 NPDES Permit imposed new, more stringent biochemical

oxygen demand (BOD) and total suspended solids (TSS) effluent limitations reflective of advanced secondary treatment standards.

- 3. The analysis of potential compliance issues with new BOD and TSS limits appears to be incorrect. Additionally, pointing out elevated BOD and TSS values measured in water sent to the reclamation field does not seem to be an appropriate comparison in the context of the NPDES permit and puts a negative bias on the perceived performance of the wastewater treatment and reclamation plant.**

It appears that the BOD and TSS monthly average limits comparison were not counted correctly. All samples collected for BOD (or TSS) in a month should be averaged to compare to the monthly average limit. If this average exceeds the monthly limit, then that is one (1) violation. From January 2010 through August 2015, there are only 68 months, which means there is a potential for maximum of 68 violations of a monthly limit.

Additionally, it is not appropriate to call out the elevated BOD and TSS values measured in samples of water that is sent to the reclamation field. The reclamation field is managed under a separate permit, Order 87-090, which has a BOD maximum limit of 40 mg/L, and no limitation for TSS.

Page 2:

- 4. The Plant is currently designed to provide only secondary treatment, not advanced secondary treatment. Plant effluent monitoring data from January 2010 through August 2015 show ~~many~~ instances when the Discharger would not immediately comply with the new BOD and TSS effluent limitations. Of the ~~161~~ 21 days when BOD and TSS samples were collected (~~140 days when discharging to the irrigation fields and 21 days when discharging to the river~~), ~~84 results were~~ 1 result was above the new monthly average BOD limit, ~~47~~ 0 were above the new weekly ~~maximum~~ average BOD limit, ~~118~~ 3 were above the new monthly average TSS limit, and ~~96 were~~ 1 was above the new weekly average TSS limit.**

Note, if the Regional Water Board does not intend to remove the sample results from water sent to the reclamation field from this analysis, the correct results are:

Of the 140 days when BOD and TSS samples were collected when discharging to the irrigation fields, 40 results were above the new monthly average BOD limit, 47 were above the new weekly average BOD limit, 54 were above the new monthly average TSS limit, and 96 were above the new weekly average TSS limit.

Typographical/Non-Substantive Comments on Cease and Desist Order

- 3. The City also submits the following editorial comments:**

Page 1:

The following paragraph should state that “tidal” waters are over 40 miles away, rather than “non-tidal” and also that the Discharger is being required to provide treated effluent that

meets advanced secondary standards, rather than absolutely requiring advanced secondary treatment.

3. Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges to non-tidal waters. The Napa River is non-tidal in the vicinity of St. Helena. Basin Plan section 4.2 provides for exceptions to Basin Plan Discharge Prohibition 1 under certain circumstances, including when 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. In reissuing the 2016 NPDES Permit, the Regional Water Board found that requiring the Discharger to build an outfall to ~~non~~-tidal waters (over 40 miles away) or to not discharge under any circumstances, including wet weather, would impose an undue burden. In granting the exception, the Regional Water Board determined that the Discharger must provide equivalent protection when discharging to the Napa River by providing treated effluent that meets advanced secondary treatment standards. Therefore, the 2016 NPDES Permit imposed new, more stringent biochemical oxygen demand (BOD) and total suspended solids (TSS) effluent limitations reflective of advanced secondary treatment standards.

Page 2:

The reference in the following paragraph should be to the weekly average BOD limit, not the weekly maximum.

4. The Plant is currently designed to provide only secondary treatment, not advanced secondary treatment. Plant effluent monitoring data from January 2010 through August 2015 show many instances when the Discharger would not immediately comply with the new BOD and TSS effluent limitations. Of the 161 days when BOD and TSS samples were collected (140 days when discharging to the irrigation fields and 21 days when discharging to the river), 84 results were above the new monthly average BOD limit, 47 were above the new weekly average maximum BOD limit, 118 were above the new monthly average TSS limit, and 96 were above the new weekly average TSS limit.

The following paragraph should be edited to refer to the City of St. Helena, rather than the City of Calistoga.

5. The Plant currently relies on a series of treatment ponds that use aerobic and anaerobic bacteria to reduce organic matter concentrations. To meet the new BOD and TSS effluent limitations in the 2016 NPDES Permit, the Discharger will likely need to incorporate filtration or another process into its treatment system. Such a process could offer an added benefit if the effluent met requirements for unrestricted recycled water use. In its May 2006 "Plant Upgrade and Water Recycling Design Memorandum," the Discharger identified about 65 acres of turf and 4,700 acres of vineyard area that could potentially be irrigated with recycled water. Of this 4,700 acres, 1,148 acres of vineyard area are within the City of ~~Calistoga~~ St. Helena limits.

Appendix D

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

**RESPONSE TO WRITTEN COMMENTS on
Tentative Order for Reissuance of NPDES Permit and
Adoption of Tentative Cease and Desist Order for the
City of St. Helena Wastewater Treatment and Reclamation Plant
St. Helena, Napa County**

The Regional Water Board received written comments from the City of St. Helena on tentative orders distributed on October 23, 2015, for public comment.

Regional Water Board staff has summarized the comments shown below in *italics* (paraphrased for brevity) and followed each comment with staff's response. For the full content and context of the comments, please refer to the comment letters.

This document also contains staff-initiated revisions.

All revisions to the tentative order are shown with underline text for additions and strikethrough ~~text~~ for deletions.

Comments on Tentative Order for Reissuance of NPDES Permit

Permit Comment 1: *The collection system is covered by the statewide general waste discharge requirements (WDR) for collection systems and should not be regulated by this permit. The duplicative requirements cause confusion and uncertainty.*

Response: We disagree. Publicly-owned treatment works (POTWs), including this facility, are subject to NPDES permits. The federal Clean Water Act and its implementing regulations define "POTW" to include wastewater treatment plants and the sewers, pipes, and other conveyances that convey wastewater to the treatment plants (40 C.F.R. section 403.3[q]). Clean Water Act section 301(b) sets forth POTWs as a class subject to NPDES permit requirements. NPDES regulations at 40 C.F.R. section 122.21(a) similarly identify POTWs as entities subject to regulation. Because the collection system is part of the POTW subject to this permit, it is subject to NPDES permit requirements. Provision VI.C.5.b of the tentative order resolves any inconsistency between the NPDES permit requirements and the statewide WDR (note the staff-initiated editorial revisions below):

... While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements... . Following the notification and reporting requirements in the

General Collection System WDRs will satisfy ~~NPDES~~ the corresponding NPDES reporting requirements specified in Attachment D... .

Permit Comment 2: *The frequency of biochemical oxygen demand (BOD) and total suspended solids (TSS) effluent monitoring should be reduced from three times per week to once per week to match the influent monitoring frequency and the monitoring frequencies for other Napa River dischargers.*

Response: We disagree. While other Napa River dischargers have less frequent monitoring requirements, they also have more reliable advanced secondary treatment systems. The City’s effluent monitoring indicates that its treatment is highly variable, which warrants more frequent monitoring. Monitoring three times per week is not excessive since monitoring is only required when discharging to the river.

We agree that the influent monitoring frequency should match the effluent monitoring frequency. We revised Monitoring and Reporting Program (MRP) Table E-2 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	C-24	3+/Week ^[2]
Total Suspended Solids	mg/L	C-24	3+/Week ^[2]

Permit Comment 3: *Attachment C should be replaced with a process flow diagram that shows the monitoring locations for EFF-001 and REC-001.*

Response: We agree and revised Attachment C.

Permit Comment 4: *It is inappropriate to include violations of Order No. 87-090 in Table F-4. The City is working on addressing those violations. Including them may result in negative bias toward wastewater treatment and reclamation plant performance.*

Response: We disagree. Fact Sheet Table F-4 describes the City’s recent compliance history. While violations of Order No. 87-090 were not violations of the NPDES permit, they do reflect the reliability of treatment plant performance. This information supports the findings regarding treatment reliability in Fact Sheet section IV.A.6. Nevertheless, to more clearly distinguish the two types of violations, we separated them in Table F-4 in Fact Sheet section II.D.1 as shown below:

Treatment Plant. The table below lists violations from November 2010 through August 2015 of the previous order and, ~~where noted in italics~~, Order No. 87-090, which regulates discharge of the treated effluent to land.

Table F-4. Effluent Limitation Violations

Date	Violation	Unit	Effluent Limit	Reported Value
<i>NPDES Permit Violations</i>				
11/04/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30

11/19/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/20/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/24/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
11/30/2010	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
12/28/2010	Copper Daily Maximum	µg/L	24	123
09/27/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	37
10/12/2012	Total Coliform Single-Sample Maximum	MPN/100 mL	240	500
10/12/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/15/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/23/2012	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
12/26/2012	Residual Chlorine Daily Maximum	mg/L	0.0	0.4
12/27/2012	Residual Chlorine Daily Maximum	mg/L	0.0	0.1
05/22/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
05/23/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	30
10/25/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/30/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
10/31/2013	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	50
02/12/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
02/13/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
02/14/2014	Total Coliform 5-Sample Moving Median	MPN/100 mL	23	33
12/22/2014	Cyanide, Total (as CN) 30-Day Average	µg/L	15	16
<i>Water Reclamation Requirements (Order No. 87-090) Violations</i>				
12/24/2010	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	76
03/02/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	>220
06/28/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	43
07/03/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	43
09/17/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	42
09/25/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	44
10/08/2012	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	87
06/12/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	42
06/20/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	49
09/03/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	45
09/20/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	44
10/04/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	101
10/11/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	51
11/08/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	46
12/04/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	67
12/13/2013	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	54
05/01/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	46
06/01/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	46
06/17/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	51
08/08/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	70
08/28/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	59
09/09/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	59

11/25/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	81
11/26/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	61
12/09/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	111
12/10/2014	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	124
03/12/2015	Biochemical Oxygen Demand Daily Maximum ^{††}	mg/L	40	76

Footnote:

^{††} Violation of Order No. 87-090.

Permit Comment 5: *The permit should not specify any particular upgrade for advanced secondary treatment. The tentative cease and desist order would require a feasibility study. The City will decide its path for compliance after the feasibility study is complete.*

Response: We agree. To clarify, when we refer to “advanced secondary treatment,” we mean achieving the BOD and TSS effluent limits set forth in Table 4 of the tentative order. There is no other regulatory definition for “advanced secondary treatment standards” so we refrain from using that term. We revised Fact Sheet section II.E as follows:

To comply with the ~~advanced secondary treatment~~ new limitations for BOD and TSS in Table 4 of this Order, which reflect pollutant levels achievable by implementing the Discharger will upgrade the plant from secondary treatment to advanced secondary treatment, the Discharger will upgrade the plant. Concurrent with adoption of this Order, the Regional Water Board considered a cease and desist order containing a time schedule of tasks to achieve advanced secondary treatment.

We revised Fact Sheet section IV.A.6 (sixth bullet) as follows:

An equivalent level of protection is provided when the discharge ~~receives advanced secondary treatment.~~ meets the BOD and TSS effluent limits in Table 4 of the Order, which reflect advanced secondary treatment.

Staff-Initiated Revisions:

In addition to making minor editorial and formatting revisions, we made the following staff-initiated revisions:

We revised section IV.D of the Order as follows (to be consistent with the Basin Plan Table 4-3, which requires a three-sample median minimum survival of 90 percent):

Whole Effluent Acute Toxicity. ~~The survival rate at Discharge Point No. 001 shall not be less than 70 percent, with compliance measured at Monitoring Location EFF-001 as described in the MRP. A bioassay test showing less than 70 percent survival represents a violation of this effluent limit.~~ Discharges at Discharge Point No. 001 shall meet the following acute toxicity limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:

1. A three-sample median value of not less than 90 percent survival; and
2. A single-sample maximum value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **Three-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if one of the past two bioassay tests also shows less than 90 percent survival.
- **Single sample maximum.** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia...

We revised MRP Table E-3 as follows:

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD	Continuous	Continuous/D
⋮	⋮	⋮	⋮
Copper	µg/L	C-24	1/Month
Cyanide ^[8]	µg/L	<u>Grab</u> C-24	1/Month
River Flow-to-Effluent Flow Ratio ^[9]	---	Calculated	1/Day

We revised Fact Sheet section IV.C.2.a.iii (second paragraph) as follows:

To translate the un-ionized ammonia objectives, pH, salinity, and temperature data were obtained from the Napa River from December 2010 through December 2012 the RMP station nearest to the outfall (BG30). The un-ionized fraction of total ammonia was calculated as follows: ...

Comments on Tentative Cease and Desist Order (CDO)

CDO Comment 1: *A CDO is inappropriate. The Regional Water Board should instead include a compliance schedule within the permit that includes interim requirements and a timeline to achieve compliance. It is unduly harsh to place the City in immediate violation of new more-stringent BOD and TSS effluent limits. This creates an unnecessary risk of legal liability.*

The Regional Water Board can impose effluent limitations but may not prescribe the method of compliance. Table 3 Tasks (a) and (g) should not mandate modifying or rebuilding the treatment system. Table 3 Tasks (e) and (f) should not mandate new construction. Although new construction may be necessary, compliance may also be achieved by other means.

The deadline for Table 3 Task (c) appears to be a mistake since it occurs before the deadline for Tasks (a) and (b). This error is propagated through the rest of the time schedule.

Response: We mostly disagree, but we did revise the text in some instances as described below.

A compliance schedule within the permit is not authorized. California’s “Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits” (State Water Board Resolution No. 2008-0025, Compliance Schedule Policy) authorizes compliance schedules only for “an existing discharger to implement a new, revised, or newly interpreted water quality objective or criterion in a water quality standard that results in a permit limitation more stringent than the limitation previously imposed.” Prohibitions are not considered to be water quality objectives or criteria, and while the Compliance Schedule Policy recognizes that Regional Water Boards may delay the effective date of newly adopted prohibitions, the Compliance Schedule Policy does not otherwise authorize compliance schedules for prohibitions.

Here, the more stringent BOD and TSS limits are not derived from a new, revised, or newly interpreted water quality objective or criterion. Instead, they result from consistent interpretations of the existing Basin Plan Discharge Prohibition 1, which prohibits discharges to non-tidal waters, and the applicable exception, which allows non-tidal discharges where the prohibition would inordinately burden a discharger and an alternative discharge site, a higher level of treatment, or improved treatment reliability could provide environmental protection equivalent to enforcing the prohibition (Basin Plan table 4-1 and section 4.2).

Although the previous order authorized the City’s discharges under this exception, the City’s compliance history over the past permit term indicates that existing treatment performance is unreliable. Moreover, readily available pollution control measures can result in higher levels of treatment that better equate to the environmental protection achieved by not discharging at all. Thus, absent improvements to plant performance, granting the exception to the discharge prohibition would be inappropriate.

The more stringent effluent limits set forth in the tentative order will both encourage implementation of a higher level of treatment and facilitate improved treatment reliability, thereby offering the City a means to comply with the exception to Basin Plan Discharge Prohibition 1 and to continue discharging. The alternative would be that the City would have to cease discharging altogether to comply with the discharge prohibition.

Use of a compliance schedule is not authorized because the new effluent limits reflect a determination of the applicability of a prohibition, not a water quality objective or standard. However, this CDO provides a time schedule for the City’s implementation activities. In accordance with Water Code section 13385, subdivision (j)(3), the CDO will exempt the City from mandatory minimum penalties if the City complies with this time schedule.

The tentative CDO is written to provide the City with flexibility in how it complies with the new BOD and TSS limits, as required under Water Code section 13360. Although it may be possible for the City to meet the new BOD and TSS limits without major new construction, existing plant performance indicates that modifications are necessary, at a minimum, and new processes are probably needed, as indicated in the City’s recent engineering reports (see tentative CDO Findings 5 and 6). We revised Table 3 as follows (note that we corrected the deadlines):

Table 3: Tasks and Time Schedule

Task	Deadline
a. Submit a Draft Feasibility Study that analyzes various options to modify or rebuild the Plant so that the discharge will meet the NPDES permit effluent limits in	September 1, 2016

Task	Deadline
Table 1. The study shall analyze all of the options described in the March 2015 <i>Wastewater Facilities Evaluation Update</i> and include other options that would achieve compliance advanced secondary treatment . For each option considered, evaluate (i) the anticipated effectiveness and reliability of the treatment, (ii) the amount of time it will take to implement, (iii) the ability to produce recycled water (recycled water uses to be considered shall include those that offset local potable water use or provide environmental enhancement, including but not limited to turf and vineyard irrigation) or the additional efforts required to produce such recycled water, and (iv) the costs.	
b. Submit a Final Feasibility Study that addresses any Executive Officer comments on the Draft Feasibility Study and identifies a preferred option.	December 1, 2016
c. Submit a Draft Workplan for construction <u>implementation</u> of the preferred option identified in task 2.b and a schedule for implementation. Include a plan and schedule for funding the project.	June 1, 2016 <u>2017</u>
d. Submit a Final Workplan that addresses any Executive Officer comments on the Draft Workplan required by task 2.c.	September 1, 2016 <u>2017</u>
e. Submit notification documenting the beginning of <u>implementation of the Final Workplan</u> construction .	September 1, 2018 <u>March 1, 2019</u>
f. Submit documentation of the completion of <u>Final Workplan implementation</u> construction and begin operation of the new <u>or modified</u> treatment system.	March <u>September 1, 2020</u>
g. Submit a report evaluating the effectiveness of the new <u>or modified</u> treatment system and whether it the new system is likely to meet the requirements of the NPDES permit. If the new system appears unlikely to meet the requirements of the NPDES permit, identify and implement measures to ensure compliance.	May 31 <u>December 1, 2020</u>
h. Achieve full compliance with the 2016 NPDES Permit effluent limitations listed in Table 1 of this Cease and Desist Order.	February 28, 2021

CDO Comment 2: *The CDO should not imply that an upgrade to advanced secondary treatment is absolutely necessary. Finding 3 should be revised to state that the City must meet advanced secondary treatment standards.*

Response: We disagree for the reasons indicated in our response to Permit Comment 5. Nevertheless, we revised Finding 3 as follows:

Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges to non-tidal waters. ... In reissuing the 2016 Permit, the Regional Water Board found that requiring the Discharger to build an outfall to ~~non~~-tidal waters (over 40 miles away) or to not discharge under any circumstances, including wet weather, would impose an undue burden. In granting the exception to the discharge prohibition, the Regional Water Board determined that the Discharger must provide equivalent protection when discharging to the Napa River by ensuring that treated effluent meets the limits in Table 1 below ~~providing advanced secondary treatment~~. Therefore, the 2016 Permit imposed new, more stringent biochemical oxygen demand (BOD) and total suspended solids (TSS) effluent limitations reflective of levels that can be met by implementing advanced secondary treatment:

CDO Comment 3: *The analysis of potential compliance issues with the new BOD and TSS limits appears to be incorrect. Comparing BOD and TSS values discharged to the irrigation field to NPDES limits puts a negative bias on treatment plant performance. It also appears that the*

BOD and TSS monthly average limits comparison is incorrect. All samples collected in a month should be averaged.

Response: We disagree regarding the usefulness of the irrigation discharge data. As discussed in our response to Permit Comment 4, the treatment processes do not change depending on discharge location. All the performance data are useful in evaluating the likely feasibility of compliance with the new limits. The reason that most of the available data were collected while discharging to the irrigation fields versus the river was that discharges to the river only occur during wet weather, and the drought conditions during most of the last permit term meant that there were not many wet weather days.

We agree that monthly average results should be compared to average monthly limits. Of 66 monthly results, 40 exceed the new BOD limit and 58 exceed the new TSS limit. Because samples were collected roughly weekly, individual results can be compared to the weekly average effluent limits. Of 142 results, 47 exceed the new BOD limits and 95 exceed the new TSS limits. The BOD and TSS sampling results are shown below in Attachment 1.

We revised Finding 4 as follows:

The Plant is currently designed to provide only secondary treatment, not advanced secondary treatment. Plant effluent monitoring data from January 2010 through August 2015 show many instances when the Discharger would not immediately comply with the new BOD and TSS effluent limitations. Of 66 monthly results, 40 exceed the new monthly BOD limit and 58 exceed the new monthly TSS limit. Because samples were collected roughly weekly, individual results can be compared to the weekly average effluent limits. Of 162 results, 47 exceed the new weekly BOD limit and 95 exceed the new weekly TSS limits. Of the 161 days when BOD and TSS samples were collected (140 days when discharging to the irrigation fields and 21 days when discharging to the river), 84 results were above the new monthly average BOD limit, 47 were above the new weekly maximum BOD limit, 118 were above the new monthly average TSS limit, and 96 were above the new weekly average TSS limit.

CDO Comment 4: *The City noted some typographical errors and made some non-substantive comments.*

Response: We changed Findings 3 and 4 as shown in our responses to CDO Comments 2 and 3. We also revised Finding 5 as follows:

The Plant currently relies on a series of treatment ponds that use aerobic and anaerobic bacteria to reduce organic matter concentrations. ... Of these this 4,700 acres of vineyard area, 1,148 acres ~~of vineyard area~~ are within ~~the~~ City of St. Helena Calistoga limits.

Attachment 1

BOD and TSS concentrations from January 2010 through August 2015. The values **in bold** are above the weekly averages (25 mg/L for BOD, 20 mg/L for TSS).

2010			2011			2012			2013			2014			2015		
Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS
1/7	12	22	1/7	13	9	1/5	15	21	1/14	<5	10	1/2	33	23	1/14	11	<6
1/26	10	12	1/21	6	15	1/24	18	22	1/18	8	11	1/15	27	<6	1/20	9	7
2/4	9	14	2/8	<5	33	2/2	22	29	2/11	<5	<3	3/10	23	32	1/21	24	25
2/25	25	31	2/23	8	23	2/22	7	13	2/21	8	10	3/20	13	10	1/27	28	35
3/2	8	21	4/13	<5	16	3/2	>220	3	3/4	19	18	4/7	22	28	2/8	18	10
3/17	16	17	4/20	<5	24	3/19	14	43	3/12	12	24	4/18	12	13	2/20	8	19
4/2	7	10	5/10	<5	29	4/16	<5	12	3/14	9	28	5/1	46	17	2/26	13	12
4/15	6	9	5/25	19	50	4/25	<5	15	4/3	16	24	5/14	40	113	3/5	<5	19
5/6	12	12	6/2	12	45	5/2	6	7	4/15	20	19	6/17	51	132	3/12	76	21
5/27	7	32	6/15	8	29	5/9	<5	4	5/1	20	19	6/26	31	36	4/2	21	32
6/18	15	25	7/21	14	42	6/7	<5	30	5/7	20	22	7/3	25	56	4/22	17	19
6/28	26	20	7/29	6	38	6/28	43	72	6/5	36	19	7/11	54	129	5/1	16	28
7/14	25	41	8/3	20	72	7/3	43	40	6/12	42	18	8/20	70	40	5/8	16	24
7/28	21	35	8/25	25	55	7/31	20	14	6/20	49	22	8/28	59	24	5/20	14	27
8/6	13	34	9/16	<16	35	8/1	21	23	7/3	29	22	9/9	59	188	6/2	9	22
8/20	17	24	9/22	17	32	8/31	27	52	7/11	33	12	11/25	81	53	6/3	5	18
9/10	15	34	10/19	14	65	9/19	42	55	7/17	23	27	11/26	61	53	7/2	32	28
9/30	32	60	10/28	15	45	9/25	44	57	8/1	38	35	12/9	111	42	7/10	27	27
10/7	39	33	11/2	6	38	9/27	34	50	8/7	<5	76	12/10	124	42	8/7	22	33
10/27	21	33	11/16	17	65	10/8	87	128	8/14	30	46				8/12	21	60

2010			2011			2012			2013			2014			2015		
Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS	Date	BOD	TSS
11/12	33	42	12/8	12	53	10/26	23	19	9/3	45	19				8/20	22	49
11/30	<5	21	12/27	12	26	10/30	11	10	9/11	16	47						
12/24	76	20				11/5	13	9	9/20	44	61						
						11/13	13	15	10/4	101	47						
						12/10	18	18	10/11	51	40						
									11/1	34	34						
									11/8	46	30						
									11/13	39	34						
									12/4	67	22						
									12/13	54	34						