

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

Eileen M. White, P.E., Executive Officer

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1. FACILITY INFORMATION

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

2. FINDINGS

The Regional Water Board finds the following:

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

THEREFORE, IT IS HEREBY ORDERED that Order R2-2017-0035 (previous order) as amended by R2-2021-0019 and R2-2021-0028 is rescinded upon the effective date of this Order, except for enforcement purposes, and, in order to meet the provisions contained in Water Code division 7 (commencing with § 13000) and regulations adopted thereunder and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for violations of the previous order.

3. DISCHARGE PROHIBITIONS

- 3.1.** Discharge of treated or partially-treated wastewater at a location or in a manner different from that described in this Order is prohibited.
- 3.2.** Bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D section 1.7 of this Order.

Blended wastewater is biologically-treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units. Such discharges are approved under the bypass conditions stated in 40 C.F.R. 122.41(m)(4) when:

- (1) the Discharger's peak wet weather influent flow volumes exceed the capacity of the secondary treatment units of 35 MGD,
- (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and
- (3) the Discharger complies with Provision 6.3.5.1 of this Order.

Furthermore, the Discharger shall operate the Facility as designed and in accordance with the Operation and Maintenance Manual for the Facility. This means it shall optimize storage and use of equalization units and shall fully use the biological treatment units. This also means it shall fully use the capacity of its Facility to maximize treatment and to minimize sanitary sewer overflows from its collection system. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports and shall monitor this discharge as specified in the attached Monitoring and Reporting Program (MRP, Attachment E) and Attachment G.

- 3.3.** Discharge at Discharge Points 001 and 002 is prohibited when treated wastewater does not receive an initial dilution of at least 26:1, as modeled. Compliance shall be achieved by proper operation and maintenance of the discharge outfalls to ensure that they (or any replacements, in whole or part) are in good working order and are consistent with or can achieve better mixing than that described in Fact Sheet section 4.3.4.2. The Discharger shall address measures taken to ensure this in its application for permit reissuance.
- 3.4.** Average dry weather influent flow exceeding 15.5 MGD is prohibited. Average dry weather influent flow shall be determined from three consecutive dry weather months each year, with compliance measured at Monitoring Location INF-001 as described in the MRP (Attachment E).
- 3.5.** Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

4. EFFLUENT LIMITATIONS

4.1. Effluent Limitations. The discharge at Discharge Points 001 and 002 shall meet the following effluent limitations, with compliance measured at Monitoring Locations EFF-001, EFF-001b, and EFF-002, as described in the MRP (Attachment E):

Table 2. Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	25	40	—	—	—
Total Suspended Solids	mg/L	30	45	—	—	—
pH ^[1]	standard units	—	—	—	6.0	9.0
Chlorine, Total Residual	mg/L	—	—	—	—	0.0 ^[2]
Ammonia, Total	mg/L	43	—	71	—	—
Copper, Total Recoverable	µg/L	84	—	120	—	—
Cyanide, Total	µg/L	19	—	40	—	—
Dioxin TEQ	µg/L	1.4E-08	—	2.8E-08	—	—

Footnote:

^[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 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] This instantaneous maximum total residual chlorine effluent limitation shall be replaced by a one-hour average effluent limitation of 0.34 mg/L on the first day of the month following U.S. EPA approval of the chlorine water quality objectives established in the Basin Plan amendment adopted by Regional Water Board Resolution R2-2020-0031.

4.2. CBOD₅ and TSS Percent Removal. The average monthly percent removal of CBOD₅ and TSS at Discharge Points 001 and 002 combined shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of CBOD₅ and TSS concentrations in effluent samples collected at Monitoring Locations EFF-001 and EFF-002 shall not exceed 15 percent of the arithmetic mean of the CBOD₅ and TSS concentrations in influent samples collected at Monitoring Location INF-001).

For a calendar month in which the Discharger discharges blended effluent at Discharge Point 001, the CBOD₅ and TSS monthly arithmetic mean and percent removal shall include results of blended effluent samples collected at Monitoring Location EFF-001b flow-weighted with effluent samples collected at Monitoring Locations EFF-001 and EFF-002.

4.3. Enterococcus Bacteria. The discharge at each of Discharge Points 001 and 002 shall meet the following enterococcus effluent limitations, with compliance

measured at Monitoring Locations EFF-001, EFF-001b, and EFF-002, as described in the MRP:

4.3.1. The six-week rolling geometric mean of enterococcus bacteria, calculated weekly, shall not exceed 210 colony forming units per 100 milliliters (CFU/100 mL). Compliance with this limit shall be determined weekly by calculating the geometric mean of all enterococcus sample results from the past six weeks; and

4.3.2. No more than 10 percent of all enterococcus bacteria samples collected in a calendar month shall exceed 1,010 CFU/100 mL. Compliance with this limit shall be determined based on measured sample results. The Discharger shall not report interpolated results. If the Discharger has 9 or fewer sample results in a calendar month, compliance shall be based on the highest result. If the Discharger has 10 to 19 sample results, compliance shall be based on the second highest result, and so on.

4.4. Whole Effluent Acute Toxicity (Prior to U.S. EPA Approval of Toxicity Provisions). The discharge at Discharge Points 001 and 002 shall comply with the following acute toxicity effluent limitations until the first day of the month following U.S. EPA approval of the State Water Board's *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions), at which point these limits shall no longer apply. Compliance shall be measured at Monitoring Locations EFF-001 and EFF-002 as described in the MRP. If the Discharger can demonstrate that toxicity exceeding these acute toxicity limits is caused solely by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Table 2 of this Order, then such toxicity shall not constitute a violation of these acute toxicity limits.

4.4.1. The 11-sample median shall not be less than 90 percent survival (i.e., a bioassay test showing survival of less than 90 percent shall represent a violation of this effluent limitation if five or more the past ten or fewer bioassay tests also show less than 90 percent survival); and

4.4.2. The 11-sample 90th percentile value shall not be less than 70 percent survival (i.e., a bioassay showing survival of less than 70 percent shall represent a violation of this effluent limitation if one or more of the previous ten or fewer bioassay tests also show less than 70 percent survival).

4.5. Chronic Toxicity (After U.S. EPA Approval of Toxicity Provisions). As of the first day of the month following U.S. EPA approval of the Toxicity Provisions, the discharge at Discharge Points 001 and 002 shall meet the following maximum daily effluent limit (MDEL) and median monthly effluent limit (MMEL) at the instream waste concentration (IWC) of 3.8 percent effluent, with compliance measured at Monitoring Locations EFF-001 and EFF-002 as described in the MRP:

- MDEL: No test result of “fail” and no percent effect greater than or equal to 50 percent for any sub-lethal endpoint.
- MMEL: No more than one result of “fail” in a calendar month for any endpoint.

5. RECEIVING WATER LIMITATIONS

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

- 5.1.1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;
- 5.1.2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;
- 5.1.3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;
- 5.1.4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
- 5.1.5. Alteration of temperature beyond present natural background levels unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses;
- 5.1.6. Changes in turbidity that cause nuisance or adversely affect beneficial uses, or increases from normal background light penetration or turbidity greater than 10 percent in areas where natural turbidity is greater than 50 nephelometric turbidity units, or above 55 nephelometric turbidity units in areas where natural turbidity is less than or equal to 50 nephelometric turbidity units;
- 5.1.7. Coloration that causes nuisance or adversely affects beneficial uses;
- 5.1.8. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
- 5.1.9. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

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

5.2.1. Dissolved Oxygen 5.0 mg/L, minimum

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

5.2.2. Dissolved Sulfide Natural background levels

5.2.3. pH

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

5.2.4. Nutrients

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

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

6. PROVISIONS

6.1. Standard Provisions

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

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

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

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

6.3. Special Provisions

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

6.3.1.1. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters;

6.3.1.2. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay or contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives or wasteload allocations. Adoption of the effluent limitations in this Order does not restrict in any way future modifications based on legally adopted water quality objectives or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications;

6.3.1.3. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified;

6.3.1.4. If a State Water Board precedential decision, new policy, new law, or new regulation is adopted;

6.3.1.5. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge; or

6.3.1.6. If the Discharger requests adjustments in effluent limits due to the implementation of stormwater diversion pursuant to the Municipal Regional Stormwater Permit (NPDES Permit CAS612008) for redirecting dry weather and first flush discharges from a storm drain system to the sanitary sewer system as a stormwater pollutant control strategy.

6.3.2. Effluent Characterization Study and Report

6.3.2.1. **Study Elements.** The Discharger shall characterize and evaluate the discharge from Discharge Points 001 and 002 as required by the MRP to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. If concentrations of any of the priority pollutants listed in Attachment G, Table B, significantly increase over past performance, the Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and

monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a “pollutant of concern” in the Discharger’s Pollutant Minimization Program, described in Provision 6.3.3.

6.3.2.2. **Reporting Requirements**

6.3.2.2.1 **Routine Reporting.** The Discharger shall report the pollutants detected at or above applicable water quality objectives (see Fact Sheet Table F-7 for the objectives) in the transmittal letter for the self-monitoring report associated with the month in which samples were collected. This requirement does not apply to pollutants with effluent limitations (see Table 2 of this Order).

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

6.3.3. **Pollutant Minimization Program**

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

6.3.3.2. The Discharger shall submit an annual report no later than August 31 of each calendar year. Each annual report shall include at least the following information:

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

6.3.3.2.2. **Discussion of current pollutants of concern.** Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.

6.3.3.2.3. **Identification of sources for pollutants of concern.** This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

6.3.3.2.4. **Identification of tasks to reduce the sources of pollutants of concern.** This discussion shall identify and prioritize tasks to address the Discharger’s pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that

address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.

- 6.3.3.2.5. **Outreach to employees.** The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the Facility. The Discharger may provide a forum for employees to provide input.
- 6.3.3.2.6. **Continuation of Public Outreach Program.** The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.
- 6.3.3.2.7. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions 6.3.3.2.3, 6.3.3.2.4, 6.3.3.2.5, and 6.3.3.2.6.
- 6.3.3.2.8. **Documentation of efforts and progress.** This discussion shall detail all the Discharger's Pollutant Minimization Program activities during the reporting year.
- 6.3.3.2.9. **Evaluation of Pollutant Minimization Program and task effectiveness.** The Discharger shall use the criteria established in Provision 6.3.3.2.7 to evaluate the program and task effectiveness.
- 6.3.3.2.10. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the treatment plant, and subsequently in its effluent.
- 6.3.3.3. The Discharger shall develop and conduct a Pollutant Minimization Program as described below when there is 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:

- 6.3.3.3.1. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
- 6.3.3.3.2. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the MRP.
- 6.3.3.4. If triggered for a reason set forth in Provision 6.3.3.3, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:
 - 6.3.3.4.1. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;
 - 6.3.3.4.2. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;
 - 6.3.3.4.3. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;
 - 6.3.3.4.4. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
 - 6.3.3.4.5. Inclusion of the following specific items within the annual report required by Provision 6.3.3.2, above:
 - 6.3.3.4.5.1. All Pollutant Minimization Program monitoring results for the previous year;
 - 6.3.3.4.5.2. List of potential sources of the reportable priority pollutants;
 - 6.3.3.4.5.3. Summary of all actions undertaken pursuant to the control strategy; and
 - 6.3.3.4.5.4. Description of actions to be taken in the following year.

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

- 6.3.4.1. **Pretreatment Program.** The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 C.F.R. part 403); pretreatment standards promulgated under

CWA sections 307(b), 307(c), and 307(d); pretreatment requirements specified under 40 C.F.R. section 122.44(j); and the requirements in Attachment H, *Pretreatment Requirements*. The Discharger's responsibilities include, but are not limited to, the following:

- 6.3.4.1.1. Enforcement of the National Pretreatment Standards of 40 C.F.R. sections 403.5 and 403.6;
 - 6.3.4.1.2. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the National Pretreatment Program (40 C.F.R. part 403);
 - 6.3.4.1.3. Submission of reports to the State Water Board and the Regional Water Board as described in Attachment H; and
 - 6.3.4.1.4. Evaluation of the need to revise local limits under 40 C.F.R. section 403.5(c)(1) and, within 180 days following the effective date of this Order, submission of a report describing the changes, with a plan and schedule for implementation.
- 6.3.4.2. **Sludge and Biosolids Management**
- 6.3.4.2.1. Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
 - 6.3.4.2.2. 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 conditions that would cause drainage from the stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal stage that may occur.
 - 6.3.4.2.3. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. The Discharger shall file a Report of Waste Discharge and bring the site into compliance with applicable regulations prior to commencement of any such activity.
- 6.3.4.3. **Collection System Management.** The Discharger shall properly operate and maintain its collection system (see Attachments D and G, § 1.4), report any noncompliance with respect to its collection system (see Attachment D, § 5.5.1, and Attachment G, § 5.5.1 and 5.5.2), and mitigate any discharges in violation of this Order associated with its collection system (see Attachments D and G, § 1.3).

State Water Board Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, as amended by State Water Board Order WQ 2013-0058-EXEC (statewide WDRs), contains

requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The statewide WDRs clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementing the requirements for operation and maintenance and mitigation of sanitary sewer overflows set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the corresponding federal NPDES requirements specified in Attachments D and G of this Order for the collection systems. Following the reporting requirements set forth in the statewide WDRs (and any subsequent order updating those requirements) shall satisfy the NPDES reporting requirements for sanitary sewer overflows specified in Attachments D and G.

6.3.5. Other Special Provisions

6.3.5.1. Specific Tasks to Reduce Blending. The Discharger shall implement the following specific tasks to minimize wet weather diversions and reduce blending in accordance with the following time schedule:

Table 3. Specific Tasks to Reduce Blending

Task	Compliance Date
<p>1. Report Annually on Implementation of 10-Year Sanitary Sewer Capital Improvement Plan (CIP) Report progress implementing projects with the potential to reduce peak wet weather flows to the plant as identified in the 10-year CIP, including progress identifying project funding and an updated implementation schedule.</p>	<p>With annual SMR due February 1 each year</p>
<p>2. Report Annually on Implementation of Storm Drain Master Plan (SDMP) Report progress implementing the Storm Drain Master Plan’s recommendations for reducing inflow and infiltration, including project descriptions, schedules, and status.</p>	<p>With annual SMR due February 1 each year</p>
<p>3. Continue Collection System Rehabilitation and Replacement Complete collection system rehabilitation and replacement costing at least \$1.25 million per year, including but not limited to collection system improvements listed in the 10-year CIP. Report project descriptions and expenditures.</p>	<p>With annual SMR due February 1 each year.</p>
<p>4. Continue Implementation of Asset Management Program</p> <ul style="list-style-type: none"> a. Continue implementation of Asset Management Program for critical plant, pump station, and collection system assets based on U.S. EPA’s Asset Management Framework. The Asset Management Program shall identify sanitary sewer segments with the highest potential to reduce inflow and infiltration. It shall also include an assessment of collection system condition and an implementation plan to reduce inflow from areas identified in the Storm Drain Master Plan as large sources due to flooding. b. Report status of Asset Management Program annually, providing updates on plant, pump station, and collection system asset conditions. 	<p>Report with annual SMR due February 1 each year.</p>

Task	Compliance Date
<p>5. Continue Updating 10-Year CIP Update the projects selected in the 10-year CIP to reduce peak wet weather flows to the plant and the implementation schedule for those projects at least every two years. Updates shall be based on the Asset Management Program's identification of sanitary sewer segments with the highest potential to reduce inflow and infiltration. Report the status of updates to the 10-Year CIP annually.</p>	<p>Report with annual SMR due February 1 each year.</p>
<p>6. Complete Treatment Plant Master Plan. The Treatment Plant Master Plan shall identify planning and funding to reduce blending, investigate feasibility of plant upgrades to allow full secondary treatment of flows over 35 MGD, and address other potential treatment changes or opportunities.</p>	<p>January 1, 2024</p>
<p>7. Implement and Revise Ryder Street Storage Basin Standard Operating Procedures Continue to implement and revise as necessary Standard Operating Procedures for the Ryder Street Storage Basin to reduce blended effluent discharges to the greatest extent possible considering the basin's primary purpose of preventing sanitary sewer overflows. Report the annual volume of blended effluent, the implementation status of the revised Standard Operating Procedures, the blended effluent discharges reduced and eliminated, and the way the basin was managed to reduce the duration and magnitude of blended discharges.</p>	<p>Report with annual SMR due February 1 each year</p>
<p>8. Continue and Expand Upper Lateral Program</p> <ul style="list-style-type: none"> a. Make at least \$450,000 per year available for direct reimbursements to property owners for repair or replacement of upper laterals and \$350,000 per year available for simultaneous inspection and repair or replacement, if necessary, of lower laterals. b. Promote the program to commercial and residential customers directly and through community groups and local media. Such outreach shall include targeted outreach to introduce the Upper Lateral Program to realtors and to property sellers and buyers at the point of sale. Also target combined sewer main / lower lateral / upper lateral repair projects at portions of service area with high inflow and infiltration. c. Report estimated number of upper laterals needing repair or replacement, number of upper laterals repaired or replaced, amount property owners were reimbursed, and public outreach efforts to promote program. 	<p>Report with annual SMR due February 1 each year.</p>
<p>9. Complete Mare Island Pump Station Replacement and Rehabilitation. Replace the existing Mare Island Pump Station, construct a replacement chlorine contact tank, and rehabilitate the Carquinez Pump Station to preserve the Discharger's wet weather wastewater treatment during large storms.</p>	<p>December 31, 2027</p>
<p>10. Complete North Secondary Clarifier Rehabilitation. Complete the North Secondary Clarifier Rehabilitation project, included in the CIP, to ensure the north secondary clarifier's continued reliable operation to minimize the impact of wet weather diversions.</p>	<p>December 31, 2027</p>
<p>11. Develop Private Sewer Lateral Inspection Ordinance.</p> <ul style="list-style-type: none"> a) Review ordinances requiring inspection of private sewer laterals (e.g., upon ownership change) successfully adopted by Bay Area communities, 	<p>April 1, 2024</p>

Task	Compliance Date
b) develop a lateral inspection ordinance appropriate for the Discharger's service area and present it to the Discharger's governing board for consideration, and c) notify the Regional Water Board at least 30 days prior to presenting the proposal.	
12. No Feasible Alternatives Analysis. If seeking to continue to bypass peak wet weather flows around the secondary treatment units based on 40 C.F.R. 122.41(m)(4)(i)(A)-(C), complete a utility analysis that contains all elements described in part 1 of the No Feasible Alternatives Analysis Process in U.S. EPA's proposed peak wet weather policy (<i>National Pollutant Discharge Elimination System Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems</i> , Fed. Reg. Vol. 70, No. 245, pages 76013-76018, December 22, 2005) and demonstrate that the Discharger has met the requirements for Regional Water Board approval listed in Attachment D section 1.7.	Submit with application for permit reissuance 270 days prior to Order expiration date

6.3.5.2. **Copper Action Plan.** The Discharger shall implement source control and pollution prevention for copper in accordance with the following tasks and time schedule:

Table 4. Copper Action Plan

Task No.	Task	Deadline
1	Implement Copper Control Program. Continue implementing existing program to reduce identified copper sources.	Implementation shall be ongoing
2	Implement Additional Actions. If the Regional Water Board notifies the Discharger that the three-year rolling mean dissolved copper concentration in San Pablo Bay exceeds 3.0 µg/L, then within 90 days of the notification, evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. Report the conclusion of the trend analysis and provide a schedule for any new actions to be taken within the next 12 months.	With next annual pollution minimization program report due August 31 (at least 90 days following notification)
3	Report Status. Submit an annual report documenting copper control program implementation that evaluates the effectiveness of the actions taken, including any additional actions required by Task 2 above, and provides a schedule for actions to be taken within the next 12 months.	Annually, with annual pollution minimization program report due August 31 each year

6.3.5.3. **Cyanide Action Plan.** The Discharger shall implement monitoring and surveillance, source control, and pollution prevention for cyanide in accordance with the following tasks and time schedule:

Table 5. Cyanide Action Plan

Task No.	Task	Deadline
1	<p>Review Potential Cyanide Sources. Submit an up-to-date inventory of potential cyanide sources. If no cyanide source is identified, Tasks 2 and 3, below, are not required unless the Discharger receives a request to discharge detectable levels of cyanide to the sewer. In such case, notify the Executive Officer and implement Tasks 2 and 3.</p>	<p>With annual pollution minimization program report due August 31, 2023</p>
2	<p>Implement Cyanide Control Program. Implement a control program to minimize cyanide discharges consisting, at a minimum, of the following elements:</p> <ul style="list-style-type: none"> a. Inspect each potential source to assess the need to include that source in the control program. b. Inspect sources included in the control program annually. Inspection elements may be based on U.S. EPA guidance, such as <i>Industrial User Inspection and Sampling Manual for POTWs</i> (EPA 831 B 94 01). c. Develop and distribute educational materials regarding the need to prevent cyanide discharges to sources included in the control program. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. <p>If the plant influent cyanide concentration exceeds 6.8 µg/L, the Discharger shall collect a follow-up sample within 5 days of becoming aware of the laboratory results. If the results of the follow-up sample also exceed 6.8 µg/L, then a “significant cyanide discharge” is occurring.</p>	<p>Implementation shall be ongoing</p>
3	<p>Implement Additional Measures. If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations are 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, report on the progress and effectiveness of the actions taken, and provide a schedule for actions to be taken within the next 12 months.</p>	<p>With next annual pollution minimization program report due August 31 (at least 90 days following notification)</p>
4	<p>Report Status of Cyanide Control Program. Submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, and provide a schedule for actions to be taken within the next 12 months.</p>	<p>Annually, with annual pollution minimization program report due August 31 each year</p>

6.3.5.4. **Resource Recovery from Anaerobically Digestible Material.** If the Discharger receives hauled-in anaerobically-digestible material for injection into an anaerobic digester, the Discharger shall notify the Regional Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed prior to initiation of hauling. The Standard Operating Procedures shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; spill response; avoidance of the introduction of materials that could cause interference, pass

through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the Standard Operating Procedures and maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition, location, and quantity of cumulative pre-digestion segregated solid waste hauled offsite.

- 6.3.5.5. **Average Annual Selenium Load.** The Discharger shall report the average annual selenium load with its application for permit reissuance. The average annual load shall be the arithmetic mean of the annual mass discharges for the previous permit term. Annual mass emissions shall be computed as follows:

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

where:

N = number of samples in a year

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

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

When calculating selenium loads, the Discharger shall use estimated values (i.e., those reported above the method detection limit and below the reporting level) and assume data reported as non-detect equal a value of half the method detection limit.

ATTACHMENT A – DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Alternative Hypothesis

Statement used to propose a statistically significant relationship in a set of given observations. Under the TST approach, when the Null Hypothesis is rejected, the Alternative Hypothesis is accepted in its place, indicating a relationship between variables and an acceptable level of toxicity.

Arithmetic Mean (μ)

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

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

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

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

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

Calendar Month(s)

Period from the first day of a month through the last day of a month (e.g., January 1 to January 31). For toxicity monitoring, the period is from the first day of a routine monitoring test to the day before the corresponding day of the next month (e.g., from June 15 to July 14), or to the last day of the next month if there is no corresponding day (e.g., January 31 to February 28).

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation (CV)

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

Daily Discharge

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

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

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

Detected, but Not Quantified (DNQ)

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

Dilution Credit

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

Effluent Concentration Allowance (ECA)

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

Effective Concentration (EC)

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

Enclosed Bays

Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest

distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

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

Estuaries

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

Inhibition Concentration (IC)

The IC is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC25 is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.

Inland Surface Waters

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

Instantaneous Maximum Effluent Limitation

Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Instream Waste Concentration (IWC)

Concentration of effluent in the receiving water after any dilution credit is applied. The IWC is the inverse of 1 plus the dilution credit, D, or $IWC = 1/(1+D)$, expressed as a percentage (e.g., if D = 9, the IWC is 10 percent). If no dilution credit is granted, the IWC is 100 percent.

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 toxicity, the MDEL is based on the outcome of the TST and the percent effect at the IWC (applied to the results of any single bioassay). 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.

Maximum Daily Effluent Target (MDET)

Target based on a single independent toxicity test using the TST used to determine whether a TRE should be conducted. Not meeting the MDET is not a violation of an effluent limitation. The MDET only applies to discharges with no numeric toxicity limits.

Median

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

Median Monthly Effluent Limitation (MMEL)

Highest allowable median of daily discharges over a calendar month, calculated as the median of all daily discharges measured during a calendar month. For aquatic toxicity, the MMEL is an effluent limitation based on a maximum of three independent toxicity tests analyzed using the TST during a calendar month.

Median Monthly Effluent Target (MMET)

Target based on a maximum of three independent toxicity tests using the TST during a calendar month used to determine whether a TRE should be conducted. Not meeting a MMET is not a violation of an effluent limitation.

Method Detection Limit (MDL)

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

Minimum Level (ML)

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

Mixing Zone

Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

MMEL Compliance Test

For chronic toxicity monitoring, one of up to two tests used in addition to a routine monitoring test to determine compliance with the chronic toxicity MMEL and MDEL.

MMET Test

For chronic toxicity monitoring, one of up to two tests used in addition to a routine monitoring test to evaluate if the discharge meets the chronic toxicity MMET and MDET.

No Observed Effect Concentration (NOEC)

The NOEC is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

No Observed Effect level (NOEL).

For compliance determination, the NOEL is equal to IC25 or EC25. If the IC25 or EC25 cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

Not Detected (ND)

Sample results less than the laboratory's MDL.

Null Hypothesis

Statement used in statistical testing that has been put forward either because it is believed to be true or because it is to be used as a basis for argument, but has not been proved.

Percent Effect

Value that denotes the difference in response between a test concentration and a control, divided by the mean control response and multiplied by 100.

Persistent Pollutants

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

Pollutant Minimization Program

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

Pollution Prevention

Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code § 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board or Regional Water Board.

Regulatory Management Decision (RMD)

Decision that represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life.

Reporting Level (RL)

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

Response

Measured biological effect (e.g., on survival, reproduction, growth) of exposure to a stimulus.

Routine Monitoring

Regular chronic toxicity monitoring required during the permit term. Routine monitoring results may trigger MMEL compliance tests. If a violation of the MDEL or MMEL occurs, Routine monitoring also includes one sample collected during the following month (regardless of the regular monitoring frequency), which is used to determine if a TRE is necessary. Routine monitoring does not include surveillance monitoring.

Source of Drinking Water

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

Standard Deviation (σ)

Measure of variability calculated as follows:

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

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

Surveillance Monitoring

Chronic toxicity monitoring performed using the most sensitive species at an effluent concentration at least double the IWC. Surveillance monitoring results are not for assessing compliance with the chronic toxicity MMEL or MDEL.

Test of Significant Toxicity (TST)

Statistical approach used to analyze aquatic toxicity test data, as described in section III.B.3 of State Water Board's *State Policy for Water Quality Control: Toxicity Provisions*.

Toxicity Reduction Evaluation (TRE)

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

ABBREVIATIONS

°F	degrees Fahrenheit
°C	degrees Celsius
%	Percent
µg/L	Micrograms per liter
µS/cm	Microsiemens per centimeter
1/Blending Event	Once per blending event
1/Discharge	Once per discharge
1/Day	Once per day
1/Month	Once per month
1/Quarter	Once per quarter
1/Week	Once per week
1/Year	Once per year
2/Month	Two times per month
2/Week	Twice per week
2/Year	Twice per year

3/Week	Three times per week
4/Week	Four times per week
5/Week	Five times per week
AMEL	Average monthly effluent limitation
AWEL	Average weekly effluent limitation
B	Background concentration
C	Water quality criterion or objective
C-24	24-hour composite
CFU/100 mL	Colony forming units per 100 milliliters
CIWQS	California Integrated Water Quality System
Continuous	Measured continuously
Continuous/D	Measured continuously, and recorded and reported daily
Continuous/H	Measured continuously, and recorded and reported hourly
CTR	California Toxics Rule
CV	Coefficient of Variation
DMR	Discharge Monitoring Report
DNQ	Detected, but not quantified
DL	Detection level
ECA	Effluent Concentration Allowance
Grab	Grab sample
IWC	Instream Waste Concentration
kg/day	kilograms per day
MDEL	Maximum Daily Effluent Limitation
MDET	Maximum Daily Effluent Target
MDL	Method detection limit
MEC	Maximum effluent concentration
MG	Million gallons
mg/L	Milligrams per liter
mg/L as N	Milligrams per liter as nitrogen
MGD	Million gallons per day
ML	Minimum level
MMEL	Median Monthly Effluent Limitation
MMET	Median Monthly Effluent Target

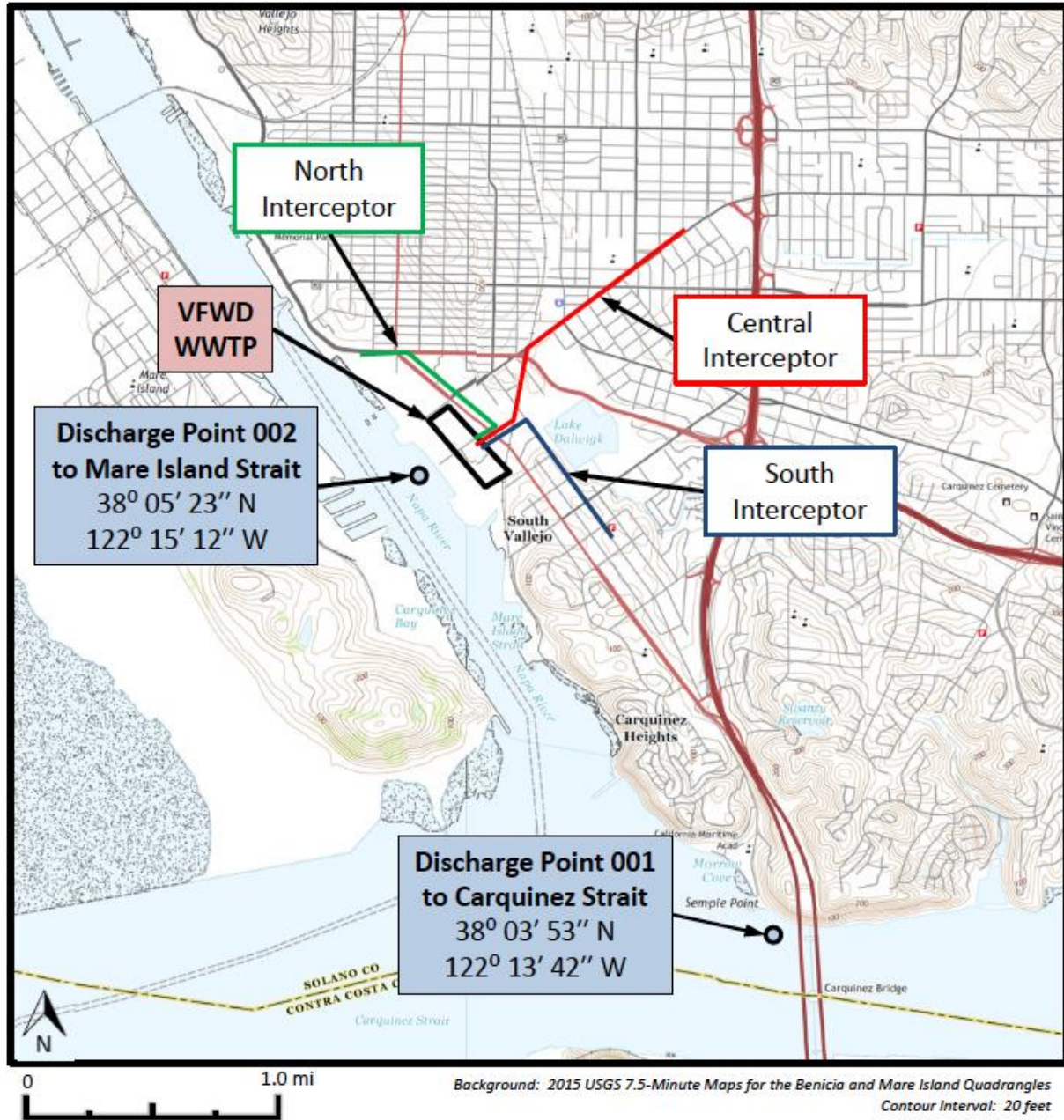
MPN/100 mL	Most probable number per 100 milliliters
MRP	Monitoring and Reporting Program (Attachment E)
ND	Not detected
NTR	National Toxics Rule
NTU	Nephelometric turbidity units
ppt	Parts per thousand
RL	Reporting level
RPA	Reasonable potential analysis
SIP	<i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California</i> (State Implementation Policy)
SMR	Self-Monitoring Report
s.u.	Standard pH units
TIE	Toxicity identification evaluation
TRE	Toxicity reduction evaluation
TST	Test of Significant Toxicity
TUa	Acute toxicity units
TUc	Chronic toxicity units
WDRs	Waste discharge requirements
WQBEL	Water quality-based effluent limitation

ATTACHMENT B – MAPS

Figure B-1. Facility and Outfall Locations

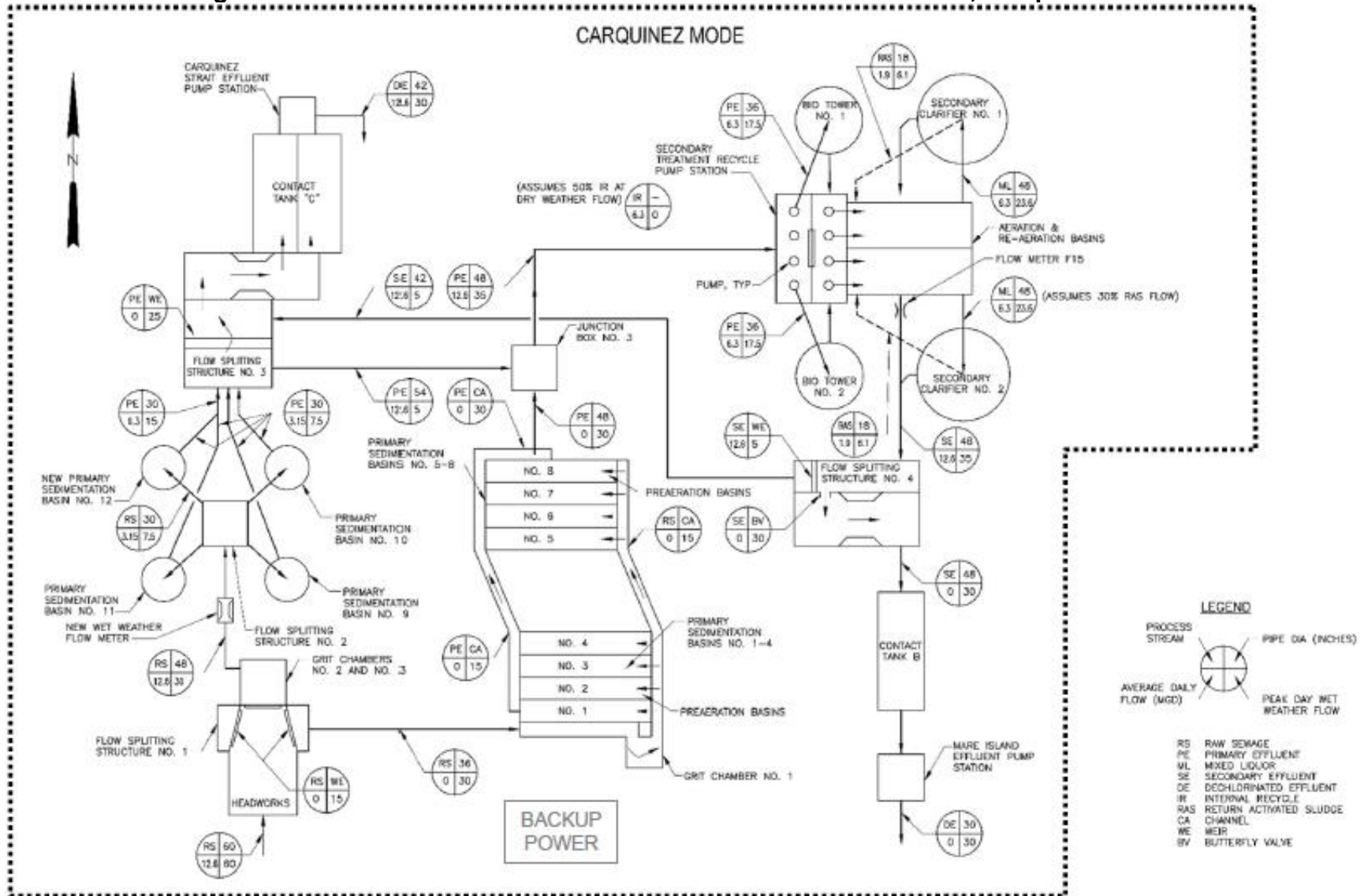


Figure B-2. Topographic Map



ATTACHMENT C – FLOW SCHEMATICS

Figure C-1. Wastewater Treatment Plant Process Flow Schematic, Carquinez Mode



ATTACHMENT D – STANDARD PROVISIONS

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ATTACHMENT D – STANDARD PROVISIONS

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply

- 1.1.1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
- 1.1.2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

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

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

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

1.5. Property Rights

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

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

- 1.6.1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
- 1.6.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
- 1.6.3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and
- 1.6.4. Sample or monitor, at reasonable times, for the purposes of ensuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

1.7. Bypass

1.7.1. Definitions

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

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

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

- 1.7.3.1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- 1.7.3.2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- 1.7.3.3. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance section 1.7.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
- 1.7.4. **Approval.** The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance section 1.7.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
- 1.7.5. **Notice**
 - 1.7.5.1. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the date of the bypass. The notice shall be sent to the Regional Water Board. As of December 21, 2025, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)
 - 1.7.5.2. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions – Reporting section 5.5 below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2025, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)
- 1.8. **Upset.** Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

- 1.8.1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance section 1.8.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
- 1.8.2. **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - 1.8.2.1. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - 1.8.2.2. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - 1.8.2.3. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting section 5.5.2.2 below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - 1.8.2.4. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance section 1.3 above. (40 C.F.R. § 122.41(n)(3)(iv).)
- 1.8.3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

2. STANDARD PROVISIONS – PERMIT ACTION

- 2.1. **General.** This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)
- 2.2. **Duty to Reapply.** If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)
- 2.3. **Transfers.** This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

3. STANDARD PROVISIONS – MONITORING

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

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

4. STANDARD PROVISIONS – RECORDS

- 4.1.** The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- 4.2.** Records of monitoring information shall include:
 - 4.2.1.** The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

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

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information. The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information that the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

5.2. Signatory and Certification Requirements

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

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

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

For a municipal, state, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)

- 5.2.3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting section 5.2.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 5.2.3.1. The authorization is made in writing by a person described in Standard Provisions – Reporting section 5.2.2 above (40 C.F.R. § 122.22(b)(1));
 - 5.2.3.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - 5.2.3.3. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
- 5.2.4. If an authorization under Standard Provisions – Reporting section 5.2.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting section 5.2.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
- 5.2.5. Any person signing a document under Standard Provisions – Reporting section 5.2.2 or 5.2.3 above shall make the following certification:

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

- 5.2.6. Any person providing the electronic signature for documents described in Standard Provisions – Reporting sections 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting section 5.2, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R. § 122.22(e).)

5.3. Monitoring Reports

- 5.3.1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
- 5.3.2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board. All reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)
- 5.3.3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
- 5.3.4. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

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

5.5. Twenty-Four Hour Reporting

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

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

As of December 21, 2025, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

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

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

- 5.6.1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
- 5.6.2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order unless the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a). (40 C.F.R. § 122.41(l)(1)(ii).) If the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions – Notification Levels § 7.1.1). (40 C.F.R. § 122.41(l)(1)(ii).)
- 5.7. Anticipated Noncompliance.** The Discharger shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order’s requirements. (40 C.F.R. § 122.41(l)(2).)
- 5.8. Other Noncompliance.** The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting sections 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting section 5.5 above. For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting section 5.5 and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)
- 5.9. Other Information.** When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)
- 5.10. Initial Recipient for Electronic Reporting Data.** The owner, operator, or duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. § 7.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. § 127.2(c)]. U.S. EPA will update and maintain this list. (40 C.F.R. § 122.41(l)(9).)

6. STANDARD PROVISIONS – ENFORCEMENT

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

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

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

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

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

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

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

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

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

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

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

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

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

7.2 Publicly Owned Treatment Works (POTWs)

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

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

- 7.2.2. All POTWs shall provide adequate notice to the Regional Water Board of any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)
- 7.2.3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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

1. GENERAL MONITORING PROVISIONS

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

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

2. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location	Monitoring Location Description ^[1]
Influent	INF-001	A point in the treatment facility headworks at which all waste tributary to the treatment system is present and preceding any phase of treatment.
Effluent	EFF-001	A point in the treatment facility at which all waste tributary to the discharge outfall into Carquinez Strait is present following adequate disinfection.
Effluent	EFF-001b	A point in the treatment facility at which all blended fully treated and primary treated waste tributary to the discharge outfall into Carquinez Strait is present (may be the same as Monitoring Location EFF-001).
Effluent	EFF-002	A point in the treatment facility at which all waste tributary to the discharge outfall into Mare Island Strait is present following adequate disinfection.
Biosolids	BIO-001	A point after dewatering and before disposal.
Toxicity Surveillance	SUR-001	A point following all treatment at the plant prior to discharge to Carquinez Strait or Mare Island Strait. This location may be the same as Monitoring Locations EFF-001 or EFF-002.

3. INFLUENT MONITORING REQUIREMENTS

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

Table E-2. Influent Monitoring

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD and MG	Continuous	Continuous/D
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C)(CBOD ₅) ^[2]	mg/L	C-24	2/Week
Total Suspended Solids (TSS) ^[2]	mg/L	C-24	2/Week
Cyanide, Total ^[3]	µg/L	Grab	1/Quarter

Footnotes:

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

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

^[2] CBOD₅ and TSS samples shall be collected concurrently with effluent samples.

^[3] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. part 136, or an equivalent method in the latest Standard Method edition.

4. EFFLUENT MONITORING REQUIREMENTS

4.1. **Monitoring Locations EFF-001 and EFF-002.** The Discharger shall monitor treatment plant effluent at Monitoring Locations EFF-001 and EFF-002 as follows:

Table E-3. Effluent Monitoring – Monitoring Locations EFF-001 and EFF-002

Parameter ^[1]	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[2]	MGD and MG	Continuous	Continuous/D
CBOD ₅ ^[3]	mg/L	C-24	2/Week
TSS ^[3]	mg/L	C-24	2/Week
pH	standard units	Continuous	Continuous/D ^[4]
Chlorine, Total Residual	mg/L	Continuous	Continuous/H ^{[5], [6], [7]}
Enterococcus Bacteria	MPN/100 mL ^[8]	Grab	2/Week
Acute Toxicity (Prior to U.S. EPA Approval of Toxicity Provisions) ^[9]	% survival	C-24	1/Month
Chronic Toxicity (Prior to U.S. EPA Approval of Toxicity Provisions) ^[10]	TUc ^[11]	C-24	1/Quarter
Chronic Toxicity (After U.S. EPA Approval of Toxicity Provisions) ^[12]	Pass/Fail % effect ^[13]	C-24	2/Year
Temperature	°C	Grab	1/Month
Copper, Total Recoverable	µg/L	C-24	1/Month
Cyanide, Total ^[14]	µg/L	Grab	1/Month
Dioxin-TEQ	pg/L	Grab	Once
Ammonia, Total	mg/L as N	C-24	1/Month
Selenium	µg/L	C-24	1/Month
Priority Pollutants ^[15]	µg/L	Grab (C-24 ^[16])	Once

Footnotes:

^[1] When discharging from Discharge Point 001 only, all parameters shall be monitored at Monitoring Location EFF-001; when discharging from Discharge Point 002 only, all parameters shall be monitored at Monitoring Location EFF-002. When discharging from Discharge Points 001 and 002, flow and pH shall be monitored at both Monitoring Locations EFF-001 and EFF-002; all other parameters shall be monitored at either Monitoring Location EFF-001 or EFF-002.

^[2] The following flow information shall be reported in monthly self-monitoring reports:

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

^[3] CBOD₅ and TSS samples shall be collected concurrently with CBOD₅ and TSS influent samples. CBOD₅ and TSS percent removal shall be reported for each calendar month in accordance with section 4.2 of this Order. For a calendar month in which the Discharger discharges from both Discharge Point 001 and 002, CBOD₅ and TSS monthly average concentration and percent removal shall be calculated and reported for Discharge Points 001 and 002 combined.

^[4] If pH is monitored continuously, the minimum and maximum pH for each day shall be reported in self-monitoring report.

^[5] Prior to U.S. EPA approval of Regional Water Board Resolution R2-2020-0031, effluent total residual chlorine concentrations shall be monitored continuously. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section 5.3.1.1. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall

retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

If a continuous chlorine residual monitor malfunctions or is offline for essential maintenance, the Discharger shall substitute grab samples at a frequency of no less than one sample every hour until the continuous chlorine residual monitor is back online. The Discharger shall report any substitution of grab sampling for continuous sampling in its monthly self-monitoring report.

- [6] On of the first day of the month following U.S. EPA approval of the chlorine water quality objectives set forth in Regional Water Board Resolution R2-2020-0031, total residual chlorine concentrations shall be monitored continuously and recorded at a frequency of not less than every 5 minutes. The minimum level for total residual chlorine analysis shall be no greater than 0.05 mg/L. To document compliance with the minimum level, the Discharger shall calibrate continuous total residual chlorine analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation.

If a continuous chlorine residual monitor malfunctions or is offline for essential maintenance lasting more than an hour, the Discharger shall substitute grab samples at a frequency of no less than one sample every hour until the continuous chlorine residual monitor is back online. The Discharger shall report any substitution of grab sampling for continuous sampling in its monthly self-monitoring report.

To evaluate compliance with the one-hour average effluent limit, the Discharger shall consider all readings recorded within each hour. The monitoring period shall begin every hour on the hour. All readings below the minimum level shall be treated as zeros for compliance evaluation. The Discharger shall calculate arithmetic means for each hour using all the readings for that hour. The Discharger shall report through data upload to CIWQS the maximum one-hour arithmetic mean for each calendar day and any other arithmetic mean values that exceed the effluent limit. The Discharger shall retain documentation of chlorine results for at least three years.

- [7] The Discharger may elect to use continuous on-line monitoring systems for measuring or determining that a residual dechlorinating agent (e.g., sodium bisulfite) is present. Such monitoring systems may be used to prove that anomalous residual chlorine exceedances measured by online chlorine analyzers are false positives and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of a dechlorinating agent. If the data from continuous total residual chlorine analyzers provide convincing evidence that chlorine residual exceedances are false positives, the exceedances shall not be violations of this Order's total residual chlorine effluent limits.
- [8] Results may be reported as either Most Probable Number (MPN)/100 mL if the laboratory method used provides results in MPN/100 mL or Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.
- [9] Acute bioassay tests shall be performed in accordance with MRP section 5.1. As of the first day of the month following U.S. EPA approval of the State Water Board's *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions), acute toxicity monitoring at Monitoring Locations EFF-001 and EFF-002 shall no longer be required.
- [10] Chronic toxicity tests shall be performed in accordance with MRP section 5.2 until the first day of the month following U.S. EPA approval of the Toxicity Provisions, at which point MRP section 5.2 shall no longer apply and chronic toxicity tests shall be performed in accordance with MRP section 5.3.
- [11] Chronic toxicity monitoring results shall be reported in TUC until the first day of the month following U.S. EPA approval of the Toxicity Provisions, at which point this requirement shall no longer apply.
- [12] Chronic toxicity tests shall be performed in accordance with MRP § 5.3 as of the first day of the month following U.S. EPA approval of the Toxicity Provisions. The Executive Officer may reduce the minimum sampling frequency as described in Toxicity Provisions § III.C.4.b.i(B) if the Discharger has complied with chronic toxicity requirements for the prior five consecutive years.
- [13] Chronic toxicity monitoring results shall be reported as "pass" or "fail" and percent effect as of the first day of the month following U.S. EPA approval of the Toxicity Provisions.
- [14] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. part 136, or an equivalent method in the latest Standard Method edition.
- [15] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- [16] The Discharger shall collect C-24 samples for metals.

4.2. Monitoring Location EFF-001b. When blending, the Discharger shall monitor treatment plant effluent at Monitoring Location EFF-001b in accordance with Attachment G section 3.1.3.2.6 as follows:

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD and MG	Continuous	1/Day
Volume of Partially-Treated Wastewater Discharged	MG	Calculated	1/Blending Event
Blending Duration ^[2]	Hours	Calculated	1/Blending Event
CBOD ₅ ^[3]	mg/L	C-24	1/Year ^[4]

Parameter	Units	Sample Type	Minimum Sampling Frequency
TSS ^[3]	mg/L	C-24	1/Day
pH ^[5]	standard units	Grab or Continuous	1/Year ^[4]
Chlorine, Total Residual	mg/L	Continuous	Continuous/D ^{[6], [7], [8]}
Enterococcus Bacteria	MPN/100mL ^[9]	Grab	1/Day
Copper, Total Recoverable	µg/L	C-24	1/Year ^[4]
Cyanide, Total ^[10]	µg/L	Grab	1/Year ^[4]
Ammonia, Total	mg/L as N	C-24	1/Year ^[4]

Footnotes:

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

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

^[2] For each blending event, the date and time each event starts and ends shall be reported.

^[3] CBOD₅ and TSS samples shall be collected concurrently with influent samples. CBOD₅ and TSS percent removal shall be reported in accordance with section 4.2 of this Order.

^[4] If a TSS sample collected during a blending event exceeds 45 mg/L, the frequency shall be once per day.

^[5] If pH is monitored continuously, the minimum and maximum pH for each day shall be reported in self-monitoring reports.

^[6] Prior to U.S. EPA approval of Regional Water Board Resolution R2-2020-0031, effluent total residual chlorine concentrations shall be monitored continuously. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section 5.3.1.1. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

If a continuous chlorine residual monitor malfunctions or is offline for essential maintenance, the Discharger shall substitute grab samples at a frequency of no less than one sample every hour until the continuous chlorine residual monitor is back online. The Discharger shall report any substitution of grab sampling for continuous sampling in its monthly self-monitoring report.

^[7] On of the first day of the month following U.S. EPA approval of the chlorine water quality objectives set forth in Regional Water Board Resolution R2-2020-0031, total residual chlorine concentrations shall be monitored continuously and recorded at a frequency of not less than every 5 minutes. The minimum level for total residual chlorine analysis shall be no greater than 0.05 mg/L. To document compliance with the minimum level, the Discharger shall calibrate continuous total residual chlorine analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation.

If a continuous chlorine residual monitor malfunctions or is offline for essential maintenance lasting more than an hour, the Discharger shall substitute grab samples at a frequency of no less than one sample every hour until the continuous chlorine residual monitor is back online. The Discharger shall report any substitution of grab sampling for continuous sampling in its monthly self-monitoring report.

To evaluate compliance with the one-hour average effluent limit, the Discharger shall consider all readings recorded within each hour. The monitoring period shall begin every hour on the hour. All readings below the minimum level shall be treated as zeros for compliance evaluation. The Discharger shall calculate arithmetic means for each hour using all the readings for that hour. The Discharger shall report through data upload to CIWQS the maximum one-hour arithmetic mean for each calendar day and any other arithmetic mean values that exceed the effluent limit. The Discharger shall retain documentation of chlorine results for at least three years.

^[8] The Discharger may elect to use continuous on-line monitoring systems for measuring or determining that a residual dechlorinating agent (e.g., sodium bisulfite) is present. Such monitoring systems may be used to prove that anomalous residual chlorine exceedances measured by online chlorine analyzers are false positives and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of a dechlorinating agent. If the data from continuous total residual chlorine analyzers provide convincing evidence that chlorine residual exceedances are false positives, the exceedances shall not be violations of this Order's total residual chlorine effluent limits.

^[9] Results may be reported as either Most Probable Number (MPN)/100 mL if the laboratory method used provides results in MPN/100 mL or Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.

^[10] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. part 136, or an equivalent method in the latest Standard Method edition.

5. TOXICITY MONITORING REQUIREMENTS

5.1. Acute Toxicity (Prior to U.S. EPA Approval of Toxicity Provisions)

- 5.1.1. When required, compliance with the acute toxicity effluent limitations shall be evaluated at Monitoring Location EFF-001 or EFF-002 by measuring survival of test organisms exposed to 96-hour flow-through bioassays.
- 5.1.2. Test organisms shall be rainbow trout (*Onchorhynchus mykiss*). Alternatively, the Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.
- 5.1.3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification.
- 5.1.4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger is authorized to adjust the effluent pH to suppress the level of un-ionized (free) ammonia. This adjustment shall be achieved by continuously monitoring test tank pH and automatic addition of analytical grade acid as needed, using a combination of continuous pH-sensor/analyzer and pump.
- 5.1.5. Effluent used for fish bioassays must be dechlorinated prior to testing. If biological growth in the dechlorinated effluent sample line is a potential problem, chlorinated effluent that is dechlorinated separately from the plant dechlorination process may be used for the bioassay test. The sample may be taken from final secondary effluent prior to disinfection. Bioassay monitoring shall include daily pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity monitoring. 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).

5.2. Chronic Toxicity (Before U.S. EPA Approval of Toxicity Provisions)

5.2.1. Monitoring Requirements

- 5.2.1.1. **Sampling.** The Discharger shall collect 24-hour composite effluent samples at Monitoring Location EFF-001 or EFF-002 for critical life stage toxicity testing as indicated below. Effluent samples may be before disinfection for toxicity tests. For toxicity tests requiring renewals, the Discharger shall collect 24-hour composite samples on consecutive or alternating days.
- 5.2.1.2. **Test Species.** The test species shall be red abalone (*Haliotis rufescens*). The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1, following any significant change in the nature of the effluent. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test if required by an applicable State Water Board plan and submit the results with its application for permit reissuance. Upon completion of the chronic toxicity screening, the Discharger shall use the most sensitive species to conduct subsequent monitoring.
- 5.2.1.3. **Frequency.** Chronic toxicity monitoring shall be as specified in Table E-3 above.
- 5.2.1.3.1. The Discharger shall accelerate monitoring to monthly after exceeding a three-sample median value of 10 TUC or a single-sample maximum value of 20 TUC. Based on the TUC results, the Executive Officer may specify a different accelerated monitoring frequency to ensure that accelerated monitoring provides useful information.
- 5.2.1.3.2. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed the trigger in section 5.2.1.3.1, above.
- 5.2.1.3.3. If accelerated monitoring confirms consistent toxicity greater than the trigger in section 5.2.1.3.1, above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section 5.2.3, below.
- 5.2.1.3.4. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below the trigger in 5.2.1.3.1, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.
- 5.2.1.3.5. Monitoring conducted pursuant to a TRE shall satisfy the requirements for routine and accelerated monitoring while the TRE is underway.
- 5.2.1.4. **Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. Bioassays shall be conducted in

compliance with the most recently promulgated test methods, as shown in Appendix E-2. These are:

- *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently 1st edition (EPA/600/R-95-136),
- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014), and
- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth edition (EPA-821-R2-02-013).

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.

If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. The adjustment shall not remove the influence of other substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration must be obtained prior to any such adjustment.

The Discharger may filter chronic toxicity samples with zeolite to minimize ammonia toxicity interference prior to performing bioassays provided it also performs and reports the results of parallel bioassays using unfiltered samples and filtered samples with ammonia added back. The Regional Water Board will assess compliance based on the zeolite-filtered samples. The Regional Water board will use the other results to confirm that ammonia at concentrations less than or equal to effluent limits continues to constitute most of the observed toxicity and that zeolite-filtered samples continue to be representative of the discharge.

5.2.1.5. **Dilution Series.** The Discharger shall conduct tests at 50%, 25%, 10%, 5%, and 2.5%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received prior to being salted up.

5.2.2. **Reporting Requirements.** The Discharger shall provide toxicity test results with self-monitoring reports and shall include the following, at a minimum, for each test:

5.2.2.1. Sample date;

5.2.2.2. Test initiation date;

- 5.2.2.3. Test species;
- 5.2.2.4. End point values for each dilution (e.g., number of young, growth rate, percent survival);
- 5.2.2.5. No Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC25 or EC25 (see Attachment A). If the IC25 or EC25 cannot be statistically determined, the NOEL shall equal the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test;
- 5.2.2.6. IC15, IC25, IC40, and IC50 values (or EC15, EC25, EC40, and EC50) as percent effluent;
- 5.2.2.7. TUc values (100/NOEL and upper and lower confidence intervals, where NOEL = IC25, EC25, or NOEC);
- 5.2.2.8. Mean percent mortality (\pm standard deviation) after 96 hours in 100% effluent (if applicable);
- 5.2.2.9. IC50 or EC50 values for reference toxicant tests; and
- 5.2.2.10. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia.)

5.2.3. Toxicity Reduction Evaluation (TRE)

- 5.2.3.1. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.
- 5.2.3.2. Within 30 days of exceeding the chronic toxicity trigger in section 5.2.1.3.1, above, the Discharger shall submit a TRE work plan, which shall be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.
- 5.2.3.3. Within 30 days of completing an accelerated monitoring test observed to exceed the trigger in section 5.2.1.3.1, above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all Executive Officer comments.
- 5.2.3.4. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below:

- 5.2.3.4.1. Tier 1 shall consist of basic data collection (routine and accelerated monitoring).
- 5.2.3.4.2. Tier 2 shall consist of evaluation of treatment process, including operational practices and in-plant process chemicals.
- 5.2.3.4.3. Tier 3 shall consist of a toxicity identification evaluation (TIE).
- 5.2.3.4.4. Tier 4 shall consist of a toxicity source evaluation.
- 5.2.3.4.5. Tier 5 shall consist of a toxicity control evaluation, including options for modifications of in-plant treatment processes.
- 5.2.3.4.6. Tier 6 shall consist of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- 5.2.3.5. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., compliance with the trigger in § 5.2.1.3.1, above).
- 5.2.3.6. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies.
- 5.2.3.7. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the toxic substances from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to levels below the chronic toxicity trigger.
- 5.2.3.8. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.

5.3. Chronic Toxicity (After U.S. EPA Approval of Toxicity Provisions)

5.3.1. Compliance Monitoring

- 5.3.1.1. **Sampling.** The Discharger shall collect 24-hour composite effluent samples at Monitoring Location EFF-001 or EFF-002 for critical life stage toxicity testing as indicated below. Effluent samples may be collected before disinfection for toxicity tests. For toxicity tests requiring renewals, the

Discharger shall collect 24-hour composite samples on consecutive or alternating days.

5.3.1.2. **Test Species.** The test species shall be the red abalone (*Haliotis rufescens*) unless a more sensitive species is identified in accordance with MRP, Appendix E-1. The Discharger shall conduct chronic toxicity species sensitivity screening as required in Appendix E-1. Upon completion of the chronic toxicity screening, the Executive Officer may specify the most sensitive species or, if testing a particular species proves unworkable (e.g., the discharger encounters unresolvable test interference or cannot secure a reliable supply of test organisms), the most sensitive species available of those listed in MRP Tables AE-1 and AE-2. The Executive Officer will specify changes in test species in writing.

5.3.1.3. **Frequency.** The Discharger shall monitor chronic toxicity as specified below:

5.3.1.3.1. **Routine Monitoring.** The Discharger shall conduct routine monitoring twice per year at the Instream Waste Concentration (IWC) set forth in section 4.5 of the Order and continue routine monitoring during any Toxicity Reduction Evaluation (TRE) consistent with MRP section 5.3.3.7.

5.3.1.3.2. **Additional Routine Monitoring Tests for Compliance and TRE Determination.** If the Discharger violates the maximum daily effluent limit (MDEL) or median monthly effluent limit (MMEL) during a calendar month and is not already conducting a TRE, the Discharger shall conduct an additional routine monitoring test during the following calendar month. This additional routine monitoring test shall be used to determine if a TRE is necessary according to the process shown in Appendix E-3. If there is not enough effluent available to test in the following calendar month, the Discharger shall return to quarterly routine monitoring as soon as enough effluent is available. The Executive Officer may also require the Discharger to conduct a TRE.

5.3.1.3.3. **MMEL Compliance Tests and TRE Determination.** If any routine monitoring test result is “fail,” the Discharger shall conduct at least one and at most two MMEL compliance tests. The results of these tests shall be used to determine if a TRE is necessary according to the process shown in Appendix E-3. The Discharger shall initiate these tests within the same calendar month as the failed routine monitoring test. (For the purposes of MMEL compliance tests, the “calendar month” shall begin on the calendar day that the failed routine monitoring test was initiated. The “calendar month” shall end on the day before the corresponding day of the following month, or on the last day of the following month if it has no corresponding day [e.g., January 31 through February 28]).

5.3.1.3.3.1. If the first MMEL compliance test result is “pass,” then the Discharger shall conduct a second MMEL compliance test. If the first MMEL

compliance test result is “fail,” that result constitutes an MMEL violation and a second MMEL compliance test is not required. If any of the failed tests were also an MDEL violation, the discharger shall conduct a TRE (see MRP § 5.3.3).

5.3.1.3.3.2. If the second MMEL compliance test result is “pass,” then the Discharger shall return to routine monitoring as described in MRP section 5.3.1.3.1.¹ If the second MMEL compliance Test result is “fail,” that result constitutes an MMEL violation. If any of the failed tests were also an MDEL violation, the discharger shall conduct a TRE (see MRP § 5.3.3).

5.3.1.3.3.3. If the Discharger cannot conduct an MMEL compliance test because not enough effluent is available to test, the Discharger shall return to routine monitoring as soon as enough effluent is available.

5.3.1.4. **Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. Bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-2. These are:

- *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently 1st edition (EPA/600/R-95-136),
- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014), and
- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth edition (EPA-821-R2-02-013).

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.

Chronic toxicity shall be evaluated using the Test of Significant Toxicity (TST) as described in the State Water Board’s *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions), section III.B.3. The selected test concentrations shall include the IWC. The TST shall be conducted using the IWC sample and a control as described in Toxicity Provisions section III.B.3. Test sample pH may be controlled to the level of the effluent

¹ See Appendix E-5, Toxicity Reduction Evaluation Process Flowchart.

sample as received by the laboratory prior to being salted up. A result of “fail” indicates toxicity at the IWC.

If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. The adjustment shall not remove the influence of other substances. Written acknowledgement that the Executive Officer concurs with the Discharger’s demonstration must be obtained prior to any such adjustment.

5.3.2. **Reporting.** The Discharger shall provide toxicity test results with self-monitoring reports and shall include the following, at a minimum, for each test:

5.3.2.1. Sample date

5.3.2.2. Test initiation date

5.3.2.3. Test species

5.3.2.4. End point values for the control and IWC sample (e.g., number of young, growth rate, percent survival). For routine monitoring and MMEL compliance tests, the Discharger shall report the results as either “pass” or “fail,” and the percent effect at the IWC for each endpoint.

5.3.2.5. End point values for each replicate of the control and IWC sample (e.g., number of young, growth rate, percent survival).

5.3.2.6. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia).

5.3.3. **Toxicity Reduction Evaluation (TRE)**

5.3.3.1. The Discharger shall prepare a generic TRE work plan within 90 days of U.S. EPA approval of Toxicity Provisions to be ready to respond to toxicity events. The Discharger shall review and update the generic work plan as necessary so it remains current and applicable to the discharge and discharge facilities.

5.3.3.2. Within 30 days of the following circumstances, the Discharger shall submit a TRE work plan that shall be the generic work plan revised as appropriate for the particular toxicity observed. The circumstances triggering a TRE are as follows:

5.3.3.2.1. The Discharger has any combination of two or more MDEL or MMEL violations within a single calendar month or two successive calendar months; or

- 5.3.3.2.2. The Discharger violates the MDEL or MMEL during a calendar month, there is no effluent available to test in the following calendar month, and the Executive Officer requires a TRE.
- 5.3.3.3. Within 30 days of submitting the TRE work plan, the Discharger shall initiate a TRE in accordance with the TRE work plan. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below:
 - 5.3.3.3.1. Tier 1 shall consist of basic data collection (routine monitoring, additional routine monitoring, and MMEL compliance tests);
 - 5.3.3.3.2. Tier 2 shall consist of evaluating treatment processes, including operational practices and process chemicals;
 - 5.3.3.3.3. Tier 3 shall consist of a toxicity identification evaluation (TIE) to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies;
 - 5.3.3.3.4. Tier 4 shall consist of a toxicity source evaluation;
 - 5.3.3.3.5. Tier 5 shall consist of a toxicity control evaluation that considers alternative strategies, including treatment process modifications, to reduce or eliminate the toxic substances from the discharge; and
 - 5.3.3.3.6. Tier 6 shall consist of implementing all reasonable toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- 5.3.3.4. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., two consecutive test results of “pass”).
- 5.3.3.5. The Executive Officer may authorize the Discharger to end a TRE if the Discharger documents that it has exhausted all reasonable efforts to identify the cause of the toxicity.
- 5.3.3.6. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.
- 5.3.3.7. The routine monitoring frequency shall be a minimum of two tests per calendar year at the IWC when the Discharger is conducting toxicity testing as part of a TRE during that calendar year. The Discharger must return to the

routine monitoring frequency specified in MRP section 5.3.1.3.1 at the conclusion of the TRE or one year after the initiation of the TRE, whichever occurs sooner.

TRE triggers are set forth below.

Table E-5. Toxicity Reduction Evaluation (TRE) Triggers

Monitoring Type and Frequency	Triggers	TRE Required?
Routine and MMEL compliance monitoring, less than monthly frequency	1. Violation of MDEL or MMEL in a calendar month, AND 2. No discharge during the following calendar month	EO may require TRE
Routine and MMEL compliance monitoring	Any combination of two or more MDEL or MMEL violations in a single calendar month or successive calendar months	TRE is required
Surveillance monitoring	"Fail" result in two consecutive samples	TRE is required

5.3.4. **Surveillance Monitoring.** The Discharger shall conduct surveillance monitoring and reporting as described below:

5.3.4.1. **Sampling.** The Discharger shall collect 24-hour composite effluent samples for surveillance monitoring at Monitoring Location SUR-001 as otherwise described in MRP section 5.3.1.1.

5.3.4.2. **Test Species.** The test species shall be the most sensitive species determined as required by MRP section 5.3.1.2.

5.3.4.3. **Surveillance Monitoring Frequency.** Surveillance monitoring shall be conducted twice per year. Surveillance monitoring tests may be conducted concurrently with routine monitoring. If a surveillance monitoring result is "fail," the Discharger shall conduct an additional surveillance monitoring test no later than the next calendar month in which there is sufficient effluent flow. If the result of the second test is "fail," the Discharger shall conduct a TRE.

Surveillance monitoring is not required during a TRE. The Discharger must return to surveillance monitoring at the conclusion of the TRE.

5.3.4.4. **Methodology.** Sample collection, handling, and preservation shall be as required by MRP section 5.3.1.4. Chronic toxicity shall be evaluated using the TST, also as required by MRP section 5.3.1.4. The selected test concentrations shall include 10 percent effluent and a control. The TST shall be conducted using the 10 percent effluent sample and the control.

5.3.4.5. **Reporting.** The Discharger shall provide toxicity test results as required by MRP section 5.3.2.

6. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall continue to participate in the Regional Monitoring Program (RMP), which collects data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. The Discharger shall also provide supplemental funding to the RMP to support additional studies for constituents of emerging concern. The Discharger shall, either individually or in collaboration with other dischargers, submit or cause to submit a report each year that indicates the status of its RMP payment. The report shall be due on the same day as the letters certifying the Discharger’s annual payment in support of RMP receiving water monitoring (currently February 1 each year).

7. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Discharger shall comply with the following pretreatment monitoring requirements for influent at Monitoring Location INF-001, effluent at Monitoring Location EFF-001 or EFF-002, and biosolids at Monitoring Location BIO-003. The Discharger shall report summaries of analytical results in annual and semi-annual pretreatment reports in accordance with Attachment H. At its option, the Discharger may also report biosolids analytical results in its electronic self-monitoring reports by manual entry, by Electronic Data Format or CIWQS Data Format (EDF/CDF), or as an attached file.

Table E-6. Pretreatment and Biosolids Monitoring

Parameters	Influent (INF-001) Sampling Frequency ^[1]	Effluent (EFF-001 or EFF-002) Sampling Frequency ^[1]	Biosolids (BIO-001) Sampling Frequency	Influent and Effluent Sample Type	Biosolids Sample Type ^[2]
VOC ^[3]	1/Year	Once	1/Year ^[2]	Grab	Grab
BNA ^[4]	1/Year	Once	1/Year ^[2]	Grab	Grab
Metals and other Elements ^[5]	1/Month	1/Month	Once ^[2]	C-24 ^[6]	Grab
Hexavalent Chromium ^[7]	1/Month	1/Month	Once ^[2]	Grab	Grab
Mercury	1/Quarter	1/Quarter ^[8]	Once ^[2]	Grab	Grab
Cyanide, Total ^[9]	1/Month	1/Month	Once ^[2]	Grab	Grab

Footnotes:

- ^[1] Influent and effluent monitoring conducted in accordance with MRP Tables E-2 and E-3 may be used to satisfy these pretreatment monitoring requirements.
- ^[2] The biosolids sample shall be a composite of the biosolids. Biosolids collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-4.
- ^[3] VOC: volatile organic compounds.
- ^[4] BNA: base/neutrals and acid extractable organic compounds.
- ^[5] Metals and other elements are arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc.
- ^[6] If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted.
- ^[7] The Discharger may choose to monitor and report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements may be 24-hour composites.

^[8] 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 at EFF-001 or EFF-002.

^[9] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. part 136 or an equivalent method in the latest Standard Method edition.

8 RECYCLED WATER POLICY ANNUAL REPORTS

In accordance with Section 3 of the *Water Quality Control Policy for Recycled Water* (Recycled Water Policy), the Discharger shall electronically submit an annual report of monthly data to the State Water Board by April 30 annually covering the previous calendar year using the State Water Board's [GeoTracker website](https://geotracker.waterboards.ca.gov/) (<https://geotracker.waterboards.ca.gov/>). Information for setting up and using the GeoTracker system can be found in the ESI Guide for Responsible Parties document on the State Water Board's website for [Electronic Submittal of Information](https://waterboards.ca.gov/ust/electronic_submittal/index.html) (https://waterboards.ca.gov/ust/electronic_submittal/index.html).

The annual report to GeoTracker must include the volumetric reporting of the items listed in [section 3.2 of the Recycled Water Policy](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf).

9. REPORTING REQUIREMENTS

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

9.2. Self-Monitoring Reports (SMRs)

9.2.1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's [California Integrated Water Quality System \(CIWQS\) Program website](https://waterboards.ca.gov/water_issues/programs/ciwqs/) (waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.

9.2.2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:

9.2.2.1. **Monthly SMRs** — Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. Each SMR shall contain the applicable items described in Provision 6.3.2 (Effluent Characterization Study and Report) of the Order, Attachment D section 5.2, and Attachment G section 5.3. Each SMR shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

9.2.2.2. **Annual SMR** — Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the applicable

items described in Provisions 6.3.2 (Effluent Characterization Study and Report) and 6.3.4.4 (Anaerobically-Digestible Material) of the Order and Attachment G section 5.3.1.6.

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

Table E-7. CIWQS Reporting

Parameter	Method of Reporting: EDF/CDF data upload	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	—

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.

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

Table E-8. Monitoring Periods

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

Footnote:

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

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

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

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

For purposes of data collection, the Discharger shall require the laboratory to write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

- 9.2.5.3. Sample results less than the laboratory's MDL shall be reported as "Not Detected", or ND.
- 9.2.5.4. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 9.2.6. **Compliance Determination.** Compliance with effluent limitations shall be determined using sample reporting protocols defined above, in the Fact Sheet, and in Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and, if applicable, greater than or equal to the RL.
- 9.3. Discharge Monitoring Reports (DMRs).** DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or the latest upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the [DMR website](https://waterboards.ca.gov/water_issues/programs/discharge_monitoring) (waterboards.ca.gov/water_issues/programs/discharge_monitoring).

**APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND
SPECIES SENSITIVITY SCREENING REQUIREMENTS**

1. Definition of Terms

- 1.1. Continuous Discharger.** Discharger that discharges without interruption throughout its operating hours, except for infrequent shutdowns for maintenance, process changes, or other similar activities, and that discharges throughout the calendar year.
- 1.2. Non-Continuous Discharger.** Discharger that does not discharge in a continuous manner or does not discharge throughout the calendar year (e.g., intermittent and seasonal dischargers).

2. Chronic Toxicity Species Sensitivity Screening

- 2.1.** The Discharger shall perform species sensitivity screening as specified in Toxicity Provisions section III.C.2:
- 2.1.1. The Discharger shall conduct species sensitivity screening and submit a technical report that identifies the most sensitive test species within 18 months of the effective date of this Order or U.S. EPA approval of the Toxicity Provisions, whichever is latest, if the Discharger has not previously conducted a species sensitivity screening as specified in Toxicity Provisions section III.C.2.
- 2.1.2. The Discharger shall conduct species sensitivity screening and submit a technical report that identifies the most sensitive test species with the application for permit reissuance. Alternatively, the Discharger may provide species sensitivity screening results from a previous sensitive species screening conducted within the 10 years before the expiration date of this Order if that sensitive species screening was conducted as specified in Toxicity Provisions section III.C.2.
- 2.1.3. The Discharger shall conduct species sensitivity screening and submit a technical report that identifies the most sensitive test species no later than 18 months after any significant change in the nature of the effluent discharged due to changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts.
- 2.2.** Species sensitivity screening shall, at a minimum, reflect the following elements:
- 2.2.1. Test species specified in Appendix E-2, attached, and protocols referenced in those tables. Test species shall be Tier I unless those species are unavailable. In such cases, the Executive Officer may approve a Tier II test species.

- 2.2.2. Continuous Dischargers: four sets of tests, one in each calendar quarter of a calendar year.

Non-continuous Dischargers: at least two sets of tests, one in each calendar quarter with at least 15 days of discharge, unless the Discharger discharges in only one quarter of a calendar year; in that case, both sets of testing shall occur during the same calendar quarter. Testing in a specific species sensitivity screening can be conducted using effluent that is not discharged into surface waters (e.g., effluent discharged onto land because of a summer prohibition on discharges into surface waters) as long as the effluent tested is representative of the effluent that will be discharged to surface waters.

- 2.2.3. Appropriate controls as required by the applicable U.S. EPA test method for the selected test species.
- 2.2.4. Tests conducted at a waste concentration of 10 percent or the IWC, whichever represents a higher concentration of effluent. Alternatively, the Executive Officer may specify a higher waste concentration if needed to increase the likelihood that potential effects might be observed.
- 2.3. The Discharger shall submit a species sensitivity screening proposal at least 30 days prior to initiating any species sensitivity screening. The proposal shall address each of the elements listed above.
- 2.4. Unless the Executive Officer specifies otherwise, the most sensitive species shall be the species exhibiting the highest percent effect.

APPENDIX E-2: SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. West Coast Marine Chronic Toxicity Test Species and Methods

Species	Scientific Name	Tier	Effect	Test Duration	Reference
Giant kelp	<i>Macrocystis pyrifera</i>	I	Percent germination; germ tube length	48 hours	1
Red Abalone	<i>Haliotis rufescens</i>	I	Larval development	48 hours	1
Oyster Mussel	<i>Crassostrea gigas</i> <i>Mytilus sp.</i>	I	Larval development	48 hours	1
Purple Urchin Sand dollar	<i>Strongylocentrotus purpuratus</i> <i>Dendraster excentricus</i>	I	Percent fertilization or larval development	1 hour or 72 hours	1
Shrimp	<i>Americamysis bahia</i>	II	Percent survival; growth	7 days	2
Topsmelt	<i>Atherinops affinis</i>	I	Percent survival; growth	7 days	2
Silverside	<i>Menidia beryllina</i>	II	Larval growth rate; percent survival	7 days	2

Toxicity Test References:

1. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/821/R-02/014. October 2002.

Table AE-2. Freshwater Chronic Toxicity Test Species and Method

Species	Scientific Name	Tier	Effect	Test Duration	Reference
Fathead minnow	<i>Pimephales promelas</i>	I	Survival; growth rate	7 days	1
Water flea	<i>Ceriodaphnia dubia</i>	I	Survival; number of young	7 days	1
Green Alga	<i>Selenastrum capricornutum</i>	I	Final cell density	4 days	1

Toxicity Test Reference:

1. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, fourth Edition Chronic manual (EPA-821-R-02-013, October 2002).

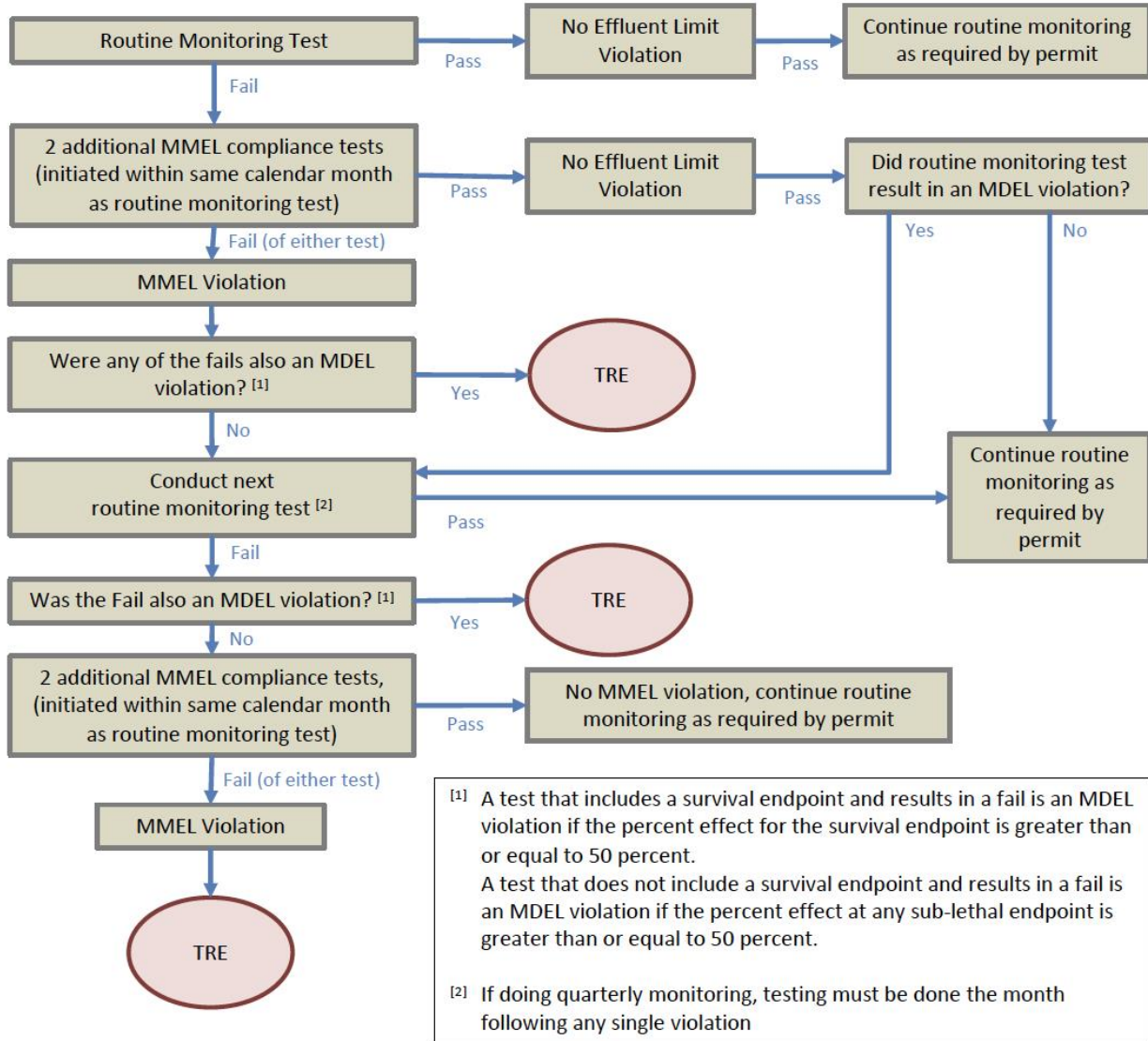
Table AE-3. Toxicity Test Requirements for Species Sensitivity Screening

Requirements	Discharges to Marine or Estuarine Water (San Francisco Bay) ^[1]	Discharges to Freshwater ^[1]
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Screening Requirement	A total of 3 Marine and/or Freshwater species from Table AE-1 and Table AE-2	3 Freshwater species from Table AE-2 ^[2]

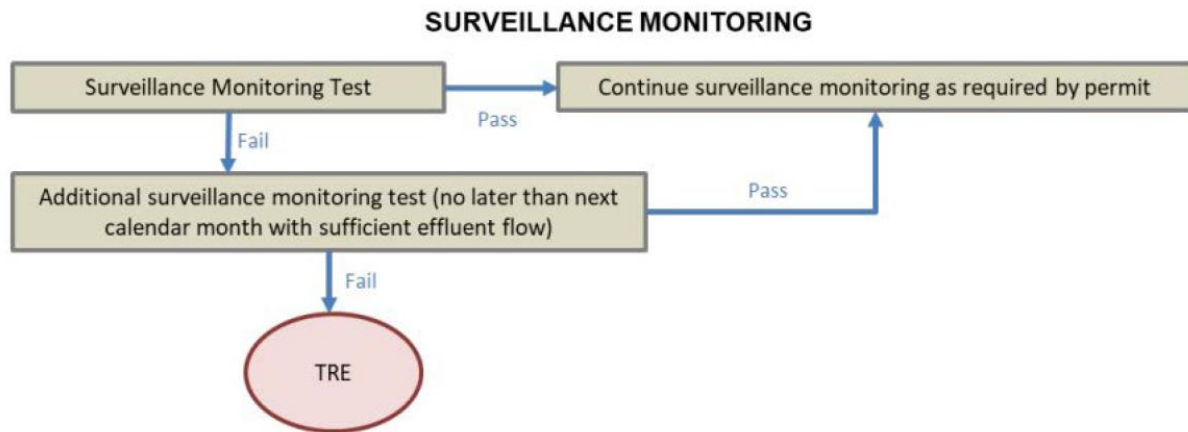
Footnotes:

- ^[1] (a) "Marine" refers to receiving water salinities greater than 1.0 parts per thousand (ppt) at least 95 percent of the time during a normal water year.
- (b) "Freshwater" refers to receiving water with salinities less than 1.0 ppt at least 95 percent of the time during a normal water year.
- (c) "Estuarine" refers to all other cases (i.e., when receiving water salinity is above 1.0 less than 95 percent of the time and below 1.0 less than 95% of the time).
- ^[2] The freshwater species may be substituted with a marine species if:
- (a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or
- (b) The ionic strength (TDS or conductivity) of the effluent at the IWC is documented to be toxic to the test species.

APPENDIX E-3: TOXICITY REDUCTION EVALUATION PROCESS FLOWCHART ROUTINE MONITORING



APPENDIX E-4: TOXICITY REDUCTION EVALUATION PROCESS FLOWCHART SURVEILLANCE MONITORING



ATTACHMENT F – FACT SHEET

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THE TOXICITY PROVISIONS REQUIRE ROUTINE MONITORING AND MMEL COMPLIANCE TESTS FOR CHRONIC TOXICITY AT THE IWC TO ENSURE COMPLIANCE WITH TOXICITY EFFLUENT LIMITATIONS. THIS ORDER GRANTS A MIXING ZONE FOR CHRONIC TOXICITY CORRESPONDING TO A DILUTION RATIO OF AT LEAST 26:1 (D=25), EQUIVALENT TO AN IWC OF 3.8 PERCENT. THE DISCHARGER MUST EVALUATE THE MDEL AND MMEL BASED ON THE IWC. F-43

BECAUSE THE DISCHARGER’S IWC IS LESS THAN 5 PERCENT EFFLUENT, THIS ORDER REQUIRES SURVEILLANCE MONITORING AT AN EFFLUENT CONCENTRATION OF 10 PERCENT. THE DISCHARGER IS REQUIRED TO REPORT RESULTS FOR SURVEILLANCE MONITORING AT MONITORING LOCATION SUR-001 INSTEAD OF EFF-001 TO DISTINGUISH SURVEILLANCE MONITORING RESULTS FROM MONITORING USED TO EVALUATE COMPLIANCE WITH EFFLUENT LIMITS..... F-43

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ATTACHMENT F – FACT SHEET

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

1. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 482012001
CIWQS Place ID	270006
Discharger	Vallejo Flood and Wastewater District
Facility Name	Vallejo Flood and Wastewater District Wastewater Treatment Plant and its collection system
Facility Address	450 Ryder Street Vallejo, CA 94590 Solano County
Facility Contact, Title, Phone	Johnson Ho, Director of Operations and Maintenance, (707) 644-8949
Authorized Person to Sign and Submit Reports	Melissa Morton, District Manager, (707) 644-8949
Mailing Address	Same as facility address
Billing Address	Same as facility address
Facility Type	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Mercury and PCBs Requirements	NPDES Permit No. CA0038849
Nutrients Requirements	NPDES Permit No. CA0038873
Facility Permitted Flow	15.5 million gallons per day (MGD) (average dry weather flow)
Facility Design Flow	15.5 MGD - maximum dry weather design flow 35.0 MGD - peak wet weather secondary treatment design flow 60.0 MGD - peak wet weather primary treatment design flow
Watershed	San Pablo Basin
Receiving Water	Carquinez and Mare Island Straits
Receiving Water Type	Estuarine
Date of Last Inspection	June 28, 2022

- 1.1. The Vallejo Flood and Wastewater District (Discharger) owns and operates the Vallejo Flood and Wastewater District Wastewater Treatment Plant and its wastewater collection system (collectively, the Facility). The Facility provides secondary treatment of wastewater collected from its service area and discharges

to Carquinez Strait (Discharge Point 001) and Mare Island Strait (Discharge Point 002), a tributary to Carquinez Strait.

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

- 1.2.** The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit CA0037699. The Discharger is authorized to discharge subject to WDRs in this Order at the discharge locations described in Table 1 of this Order.
 - 1.3** The Discharger was previously subject to Order R2-2017-0035 (previous order) as amended by R2-2021-0019 and R2-2021-0028.
 - Order R2-2021-0028 amended Order R2-2016-0008 and the previous order to provide updated monitoring requirements and require supplemental funding for the Regional Monitoring Program (RMP).
 - Order R2-2021-0019 amended the previous order to update effluent limits and monitoring requirements for total residual chlorine and remove effluent limits and monitoring requirements for oil and grease.
- Provisions of these orders have been incorporated into this Order as appropriate and applicable.
- 1.4** The Discharger filed a Report of Waste Discharge and applied for reissuance of its WDRs and NPDES permit, on January 31, 2022. The previous order expired on October 31, 2022. The terms and conditions of the previous order have been automatically continued and remain in effect until this Order takes effect.
 - 1.5.** Regulations in 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, this Order limits the effective period for the discharge authorization. Pursuant to 40 C.F.R. section 122.6(d) and California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all requirements for continuation of expired permits.
 - 1.6.** The Discharger is also regulated under NPDES Permits CA0038849 and CA0038873, which establish requirements on mercury and polychlorinated biphenyls (PCBs) and nutrients from wastewater discharges to San Francisco Bay. This Order does not affect those permits.
 - 1.7.** When applicable, State law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to

enforce such requirements under Water Code section 1211. This is not an NPDES permit requirement.

2. FACILITY DESCRIPTION

2.1. Wastewater Collection and Treatment

2.1.1. **Service Area and Collection System.** The plant provides secondary treatment of domestic and commercial wastewater from the City of Vallejo, the former Mare Island Naval Facility, and an adjacent unincorporated area. It serves a population of about 120,000 people. The wastewater collection system consists of approximately 395 miles of sanitary sewer main lines, 38 pump stations, and about 78 miles of lower laterals. Attachment B shows a map of the area around the Facility.

In 2005 and 2006, the Discharger completed significant capital improvement projects to the collection system to eliminate sanitary sewer overflows from two constructed wet weather overflow structures, the Sears Point Pump Station Overflow and the Ryder Street Overflow. The improvements included a 3.0 million gallon (MG) underground storage tank to eliminate sanitary sewer overflows from the Sears Point Pump Station and an 8.6 MG storage basin adjacent to the treatment plant to eliminate sanitary sewer overflows from the Ryder Street Pump Station. When possible, the Discharger operates the storage basin like an equalization basin to reduce discharges of blended effluent from the Facility; however, its primary purpose is to reduce and eliminate sanitary sewer overflows.

During the term of the previous order, the Discharger rehabilitated or replaced sewer mains, lower laterals, and manholes to reduce infiltration and inflow, including more than 24,000 feet of sewer mains and 16,000 feet of lower laterals. The Discharger also financially assisted homeowners to replace 790 upper laterals. The Discharger also intends to complete a Collection System Master Plan documenting its collection system facilities and their condition, and recommending actions to further reduce inflow and infiltration, in March 2023.

2.1.2. **Wastewater Treatment.** The treatment plant's average dry weather design capacity for secondary treatment is 15.5 million gallons per day (MGD), and its peak wet weather capacity for secondary treatment is 35 MGD. The plant has an additional 25 MGD primary treatment capacity. The plant's peak wet weather discharge capacity is 60 MGD (through Discharge Points 001 and 002 combined). Average dry weather flow from 2018 through 2020 was 7.9 MGD. The daily wet weather flow from November 2017 through April 2021 ranged from 3.9 to 60 MGD.

Treatment consists of screening, aerated grit removal, primary sedimentation by circular and rectangular clarifiers, biological treatment by trickling filters followed

by activated sludge aeration basins, secondary clarification, disinfection by chlorination, and dechlorination by sodium bisulfite.

Under normal conditions, the plant discharges secondary-treated effluent to Discharge Points 001 and 002, deepwater outfalls located in Carquinez Strait and Mare Island Strait; Discharge Point 002 is the primary outfall. During wet weather, the plant provides full secondary treatment of flows up to 35 MGD and primary treatment of flows from 35 MGD to 60 MGD. The plant blends primary-treated effluent with secondary-treated effluent before discharging the blended effluent to Carquinez Strait via Discharge Point 001. By means of automated flow splitting, the plant discharges only secondary-treated effluent to Mare Island Strait via Discharge Point 002 to minimize potential receiving water impacts. Attachment C provides plant flow schematics.

- 2.1.3. **Biosolids Management.** The Discharger treats its biosolids by gravity thickening or co-settling, lime stabilization, and dewatering by belt-filter presses. The Discharger's stabilized, dewatered biosolids are hauled offsite for land application at the Discharger's Biosolids Utilization Project on Tubbs Island, Sonoma County. Biosolids are temporarily stockpiled at the Tubbs Island site and subsequently spread and incorporated into the soil as a soil amendment on land used for agricultural crop production. Beginning in November 2019, the Discharger began sending a small portion of its biosolids to the Lystek Organic Material Recovery Center located at the Fairfield Suisun Sewer District wastewater treatment plant in Fairfield, California, in Sonoma County for incorporation into Lystek's biosolids-derived liquid fertilizer.
- 2.1.4. **Stormwater Management.** The Discharger is not required to be covered under the statewide NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit CAS000001) because all stormwater at the plant and pump stations is collected and directed to the plant's headworks for treatment.

2.2. Discharge Points and Receiving Waters

- 2.2.1. **Discharge Point 001 – Carquinez Strait.** Discharge Point 001 is an ancillary outfall. It is a submerged diffuser 400 feet from the north shore of Carquinez Strait near the north end of the Carquinez Bridge at a depth of about 75 feet below the water surface. It consists of eight 16-inch diameter duckbill discharge ports elevated 10 feet from the Strait bottom (i.e., a depth of about 65 feet). The ports are spaced seven feet apart on center on alternating sides of the diffuser. The ports are at a vertical angle of 0 degrees (i.e., horizontal) and an horizontal angle of 20 degrees. The discharge receives an initial dilution of approximately 41:1 (see Fact Sheet § 4.3.4.2).

The plant is allowed to discharge blended effluent to Discharge Point 001 when:

- (1) peak wet-weather influent flows exceed the 35-MGD capacity of the secondary treatment units,

- (2) the discharge complies with the effluent and receiving water limitations of this Order, and
- (3) the Discharger complies with Provision 6.3.5.1 of this Order.

In addition, the Discharger must operate the Facility as designed and in accordance with the Facility's Operation and Maintenance Manual. Specifically, the Discharger must:

- optimize storage and use of its equalization units;
- fully use its biological treatment units; and
- fully use its Facility's capacity to maximize treatment and to minimize sanitary sewer overflows from its collection system.

The plant may also discharge secondary-treated effluent at Discharge Point 001 for testing purposes and to conduct maintenance on Discharge Point 002.

From November 2017 through April 2021, the plant discharged at a maximum rate of 29.9 MGD at Discharge Point 001. Discharge at this point occurred in approximately 16 separate events, lasting from less than one day to approximately 8 days.

2.2.2 Discharge Point 002 – Mare Island Strait. Discharge Point 002 is the primary outfall. It is a submerged diffuser about 250 feet from the eastern shore of Mare Island Strait, submerged 10 to 11 feet below the water surface and parallel to the ambient current direction (i.e., approximately north-south). It consists of fourteen 8-inch-diameter duckbill discharge ports elevated 3 feet from the Strait bottom (i.e., a depth of about 7 to 8 feet). The ports are spaced 8 feet apart on center on the west side of the diffuser (seven on each side of a 20-foot north-south tee). Each port is at a vertical angle of 0 degrees (i.e., horizontal) and a horizontal angle of 90 degrees (perpendicular to the current direction). The discharge receives an initial dilution of approximately 26:1 (see Fact Sheet § 4.3.4.2).

From November 2017 through April 2021, the plant discharged at an average rate of 8.9 MGD and a maximum rate of 30 MGD at Discharge Point 002. Discharge at this point occurred almost continuously.

2.3. Previous Requirements and Monitoring Data. The table below presents the previous order's effluent limitations and representative monitoring data from the previous order term:

Table F-2. Previous Effluent Limitations and Monitoring Data

Parameter	Unit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Other Limit	Long-Term Average ^[1]	Highest Daily Value
Carbonaceous Biochemical Oxygen Demand (5 day @ 20°C) (CBOD)	mg/L	25	40	—	—	12	44 ^[2]
Total Suspended Solids (TSS)	mg/L	30	45	—	—	15	58 ^[2]
CBOD ₅ percent removal	%	85 (minimum)	—	—	—	94	88 ^[3]
TSS percent removal	%	85 (minimum)	—	—	—	94	89 ^[3]
Oil and Grease	mg/L	10	—	20	—	ND<1.5	2.8
pH	s.u.	—	—	—	6.0 – 9.0	7.2	6.0 – 8.3 ^[4]
Chlorine, Total Residual	mg/L	—	—	—	0.0 ^[5]	0.0	0.34
Ammonia, Total	mg/L	44	—	86	—	24	42
Enterococcus	CFU/100 mL	—	—	—	35 (monthly geometric mean)	4.2	90 ^[6]
Copper, Total Recoverable	µg/L	84	—	120	—	8.1	13
Cyanide, Total	µg/L	19	—	40	—	1.6	2.7
Dioxin-TEQ	µg/L	1.4 × 10 ⁻⁸	—	2.8 × 10 ⁻⁸	—	0.0 ^[7]	0.0 ^[7]
Acute Toxicity	% Survival	—	—	—	Not less than 90% (11-sample median) Not less than 70% (11-Sample 90th Percentile)	98	90 ^[8]
Chronic Toxicity	TUc	—	—	—	—	2.7	5.2 ^[9]

Footnotes:

- ^[1] Median instead of average used when data includes non-detect (ND) values.
- ^[2] The Discharger did not violate the monthly or weekly average effluent limitation in this instance because the maximum reported concentration is a daily maximum.
- ^[3] Lowest reported percent removal
- ^[4] The range of reported pH values.
- ^[5] Applied as an instantaneous maximum.

- [6] The Discharger did not violate the monthly geometric mean effluent limitation in this instance because the maximum reported concentration is a daily maximum.
- [7] All detected congeners were estimated (i.e., DNQ) values; thus the calculated dioxin-TEQ results were zero. The highest estimated result was 1.9×10^{-11} µg/L.
- [8] Lowest percent survival. The lowest 11-sample median was 90 percent survival.
- [9] Based on bioassays of zeolite-filtered samples from January 2018 through January 2021, in accordance with *Conditional Approval of Ammonia Removal before Chronic Toxicity Bioassays* (Regional Water Board, October 12, 2016). The maximum 3-sample median was 5.2 TUc, less than the previous order's chronic toxicity triggers.

2.4. Compliance Summary

2.4.1. **Treatment Plant.** The Discharger violated its instantaneous maximum total residual chlorine effluent limitation of 0.0 mg/L once during the previous order term. The violation occurred at Monitoring Location EFF-002 (Discharge Point 002) on May 18, 2022. The violation was caused by an increase in discharge flow and consequently in sodium hypochlorite (i.e., chlorine) dosage while the sodium bisulfite analyzer controlling the sodium bisulfite dosage had been taken offline to clean its probe. The sodium bisulfite dosage therefore remained constant instead of increasing and was insufficient to neutralize the residual chlorine. When the chlorine residual was detected by the effluent chlorine analyzer, plant staff manually increased the sodium bisulfite dosage, which ended the chlorine residual discharge. The violation lasted about nine minutes and the maximum effluent residual chlorine concentration was 0.34 mg/L.

To prevent a recurrence of this violation, the Discharger added a high flow alarm to alert plant staff when an increased discharge flow necessitates an increased sodium bisulfite dosage rate. The Discharger also established standard operating procedures directing plant staff to operate the sodium hypochlorite and sodium bisulfite pumps manually when their analyzers are offline and, as a precaution, to increase the sodium bisulfite dosage above the current level needed. There have been no further exceedances of the chlorine residual effluent limitation.

2.4.2. **Collection System.** The table below summarizes the Discharger's Category 1 sanitary sewer overflow (SSO) rates per 100 miles of collection system for the last five years, along with the primary causes of these discharges. Category 1 SSOs are those that reach waters of the United States and thus may violate Prohibition 3.5 of this Order.

Table F-3. Collection System and Category 1 SSO Rates (SSOs/100 miles)

(Values based on CIWQS August 2022 data) ^[1]

	Length (miles)	Average Pipe Age (years)	2017	2018	2019	2020	2021
Discharger	473	43	0.63	0.42	1.3	0.21	0.63
San Francisco Bay Region	19,600	48 ^[2]	1.5	0.64	1.2	0.61	1.0
State of California	113,000	46 ^[2]	0.67	0.38	0.56	0.33	0.46

Footnotes:

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

^[2] The average pipe age for the State of California is estimated based on the percentage of piping constructed during each decade as reported by enrollees under State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order WQ 2013-0058-EXEC.

2.5. Sea Level Rise. The Facility (i.e., both the plant and collection system) is vulnerable to sea level rise. In 2018, the Discharger completed a 100 percent design plan for a flood wall around the perimeter of the plant that would protect it against two feet (24 inches) of sea level rise. The Discharger based this design on an analysis completed in 2016 that projected a mid-to-high range of two feet of sea level rise by 2050.

The Discharger has not established plans to mitigate sea level rise with regard to its collection system or its discharge. The Discharger states that its Wastewater Treatment Master Plan, scheduled for completion in 2024, will address sea level rise and plant hydraulics. The Discharger also states it is coordinating with the City of Vallejo to develop a standardized approach to sea level rise for new infrastructure associated with development.

2.6. Recycling. The Discharger uses about 600,000 gallons per year of its treated effluent onsite for Facility operations but does not currently produce or distribute recycled water. The Discharger stated during the Regional Water Board's 2002 Compliance Evaluation Inspection of the Facility that there are few opportunities for recycling water off-site because the City of Vallejo has strong water rights from several sources and demand for recycled water is therefore relatively low. In addition, the Discharger would need to add filtration and additional disinfection to its treatment system to produce recycled water that would meet California Code of Regulations Title 22 requirements for unrestricted non-potable reuse (*Vallejo Flood and Wastewater District Recycled Water Facilities Plan*, HydroScience, March 2018).

2.7. Planned Changes. The Discharger plans a \$1.02 million rehabilitation project for the Ryder Street Basin (8.6 MG storage basin), with planning and design scheduled for 2023 and construction scheduled for 2024-2025. This project would

include foundation and liner replacement to ensure continued reliable operation of the basin. This change is mentioned here for informational purposes only and is not a requirement of this Order, except to the extent that it pertains to ensuring Facility reliability. Its inclusion here does not imply Regional Water Board authorization. The Discharger may need to obtain necessary permits or permit modifications to implement this change.

3. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

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

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

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

3.3.1. Water Quality Control Plan. The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on San Francisco Bay, total dissolved solids levels exceed 3,000 mg/L; therefore, San Francisco Bay meets an exception to State Water Board Resolution 88-63. Therefore, the beneficial uses applicable to Carquinez Strait and Mare Island Strait are as follows:

Table F-4. Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001	Carquinez Strait	Industrial Service Supply (IND) Commercial and Sport Fishing (COMM) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
002	Mare Island Strait	Commercial and Sport Fishing (COMM) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

3.3.2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** The NTR and CTR contain federal water quality criteria for priority pollutants. U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 NTR criteria apply in California. U.S. EPA adopted the CTR on May 18, 2000. The CTR promulgated new toxics criteria for California and incorporated the NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001.

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

3.3.4. **Bacteria Objectives.** The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* on August 7, 2018, and it became effective on March 22, 2019. This plan establishes enterococcus bacteria water quality objectives and related

implementation provisions for discharges to marine and estuarine waters that support the water contact recreation (REC1) beneficial use.

- 3.3.5. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* (Sediment Quality Plan) on September 16, 2008, and it became effective on August 25, 2009. The State Water Board adopted amendments to the plan on June 5, 2018, that became effective on March 11, 2019. This plan establishes sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.
- 3.3.6. **Toxicity Provisions.** The State Water Board adopted the *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions) on October 5, 2021. Following U.S. EPA approval, Toxicity Provisions sections II.C.1 and II.C.2 will establish numeric chronic and acute toxicity objectives that apply to all inland surface waters, enclosed bays, and estuaries in the State with aquatic life beneficial uses. The Toxicity Provisions include related implementation provisions and require that compliance with the chronic toxicity water quality objectives be assessed using U.S. EPA’s Test of Significant Toxicity (TST) (U.S. EPA, *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* [EPA/833-R-10-003], June 2010). This Order will implement the Toxicity Provisions on the first day of the month following U.S. EPA approval.
- 3.3.7. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy through State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
- 3.3.8. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
- 3.3.9. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or

Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.

3.3.10. Sewage Sludge and Biosolids. U.S. EPA administers 40 C.F.R. part 503, Standards for the Use or Disposal of Sewage Sludge, which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting applicable requirements of 40 C.F.R. part 503.

3.4. Impaired Water Bodies on CWA section 303(d) List. On May 11, 2022, 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 wastewater allocations for point sources and load allocations for nonpoint sources and are established to achieve water quality standards.

Carquinez Strait is 303(d) listed as impaired due to chlordane, DDT, dieldrin, dioxin compounds (including 2,3,7,8-TCDD), furan compounds, invasive species, mercury, PCBs, dioxin-like PCBs, and selenium. Similarly, Mare Island Strait (named “Napa River, Mare Island Strait” in the May 11, 2022 303[d] list) is 303(d) listed as impaired by chlordane, dieldrin, total DDT, mercury, and PCBs. The SIP requires effluent limitations for 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 and are implemented under NPDES Permit CA0038849. On August 23, 2016, U.S. EPA approved a TMDL for selenium in North San Francisco Bay, which includes Carquinez Strait and Mare Island Strait. The selenium TMDL applies to this discharge but does not require effluent limits because municipal wastewater dischargers have an insignificant impact on North Bay water quality.

As shown in Fact Sheet section 4.3.3, the discharge is not a significant source of chlordane, DDT, or dieldrin because these pollutants have not been detected in the discharge. The discharge is also not a source of invasive species because it is disinfected. It is not a significant source of dioxins and furans because discharge concentrations are consistently below water quality objectives.

4. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

4.1. Discharge Prohibitions

4.1.1. Prohibitions in this Order

4.1.1.1. **Discharge Prohibition 3.1 (No discharge other than as described):** This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

4.1.1.2. **Discharge Prohibition 3.2 (No bypass to waters of the United States):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D § 1.7). It allows bypass of peak wet weather flows above 35 MGD around secondary treatment units that are then blended with secondary treatment flows prior to discharge at Discharge Point 001. Such bypasses meet the conditions of 40 C.F.R. section 122.41(m)(4)(i)(A)-(C) as explained below.

During significant storms, high flows can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system. Operators of wastewater treatment plants must manage these high flows to both ensure the continued operation of the treatment process and to prevent backups and overflows of raw wastewater into basements or onto city streets. U.S. EPA recognizes that peak wet weather flow diversions around secondary treatment units may be necessary in some circumstances.

In December 2005, U.S. EPA invited public comment on its proposed peak wet weather policy (*National Pollutant Discharge Elimination System Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems*, Fed. Reg. Vol. 70, No. 245, pages 76013 - 76018, December 22, 2005). This draft policy provides interpretation of 40 C.F.R. 122.41(m) and guidance by which the Regional Water Board may approve wet weather bypasses. Based on this guidance, the Regional Water Board requires that discharges of blended effluent meet all the requirements of

NPDES permits and encourages municipalities to make investments in ongoing maintenance and capital improvements to improve the long-term performance of their systems.

U.S. EPA's proposed peak wet weather policy states, "If the criteria of 40 C.F.R. section 122.41(m)(4)(i)(A)-(C) are met, NPDES authorities can approve peak wet weather diversions around secondary treatment units in a NPDES permit for discharges from a POTW treatment plants [sic] as an anticipated bypass under 40 CFR 122.41(m)(4)(ii)." Based upon the following information, the Discharger's anticipated blending bypasses meet the criteria in 40 C.F.R. section 122.41(m)(4)(i)(A)-(C); therefore, this Order conditionally approves blending bypasses.

- 4.1.1.2.1. **Bypass unavoidable to prevent loss of life, personal injury, or severe property damage.** The Discharger evaluated all feasible alternatives to bypasses and determined that, with peak wet weather flows above 35 MGD, bypasses are unavoidable to prevent backups and overflow of raw sewage into basements or onto city streets, which could result in substantial physical damage to property or personal injury. Thus, such bypasses meet the requirements of 40 C.F.R. section 122.41(m)(4)(i)(A).
- 4.1.1.2.2. **No feasible alternatives to bypass.** As part of the Discharger's Report of Waste Discharge, the Discharger submitted a *No Feasible Alternatives Analysis*, dated February 2022. The *No Feasible Alternatives Analysis* is consistent with the requirements of 40 C.F.R. section 122.41(m)(4)(i)(B). The Discharger evaluated the following alternatives to reduce or eliminate bypasses:
- increase treatment capacity,
 - continue improving collection system to reduce inflow and infiltration,
 - operate existing storage basins to reduce and eliminate blending,
 - limit extension of collection system,
 - continue upper lateral repair incentive program (Upper Lateral Program) and expand it to commercial users,
 - adopt ordinance requiring private sewer lateral repair upon change of property ownership (private sewer lateral ordinance),
 - develop 10-year Capital Improvement Plan to identify major collection system improvement projects,
 - develop Asset Management Plan to support Capital Improvement Plan, and
 - update Sewer System Management Plan (SSMP).

The Discharger found the following alternatives feasible:

- continue improving collection system,

- continue operating Ryder Street storage basin to reduce or eliminate blending,
- continue and expand Upper Lateral Program,
- complete the 10-Year Capital Improvement Plan,
- complete and implement Asset Management Plan, and
- update SSMP.

The Discharger also found developing a Collection System Master Plan feasible and states one will be completed in March 2023 (see Fact Sheet § 2.1.1). Separately from the No Feasible Alternatives Analysis, the Discharger has also found updating its Storm Drain Master Plan feasible. (The Discharger believes ponded stormwater contributes to inflow and infiltration into its collection system.)

The Discharger found increasing treatment capacity infeasible due to cost and space constraints and found operating additional existing storage basins to reduce blending infeasible because it conflicts with those basins' main purpose of preventing SSOs. The Discharger also found that limiting collection system extensions would not reduce blending because little population growth is expected.

Provision 6.3.5.1 of this Order requires all the actions the Discharger has found feasible. It also requires the Discharger to pursue a private sewer lateral ordinance and update its Sanitary Sewer Overflow Elimination Plan to document current conditions and update evaluations, findings, and recommendations for reducing inflow and infiltration.

- 4.1.1.2.3. **Notice provided at least ten days before bypass.** With its Report of Waste Discharge, the Discharger notified the Regional Water Board of its need to blend as required under 40 C.F.R. section 122.41(m)(4)(i)(C).
- 4.1.1.3. **Discharge Prohibition 3.3 (No discharge without minimum initial dilution of at least 26:1):** This prohibition ensures that this Order's effluent limitations remain protective of water quality. The total ammonia and chronic toxicity effluent limitations established in this Order are based on the Discharger's modeled minimum initial dilution and subsequent dilution credits as described in Fact Sheet section 4.3.4.2.
- 4.1.1.4. **Discharge Prohibition 3.4 (No average dry weather flow above 15.5 MGD):** This prohibition ensures that the average dry weather influent flow does not exceed the plant's designed average dry weather treatment capacity (i.e., the historic and tested reliability of the treatment plant) of 15.5 MGD. Exceeding this flow could result in lower treatment reliability and greater potential to violate effluent limitations.

4.1.1.5. **Discharge Prohibition 3.5 (No sanitary sewer overflows to waters of the United States):** This prohibition is based on Discharge Prohibition 15 of Basin Plan Table 4-1 and the CWA, which prohibits the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly-owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards. A sanitary sewer overflow that results in the discharge to waters of the United States of raw sewage or wastewater not meeting this Order’s effluent limitations is therefore prohibited under the Basin Plan and CWA.

4.2. Technology-Based Effluent Limitations

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

Table F-5. Secondary Treatment Standards

Parameter	Monthly Average	Weekly Average
Biochemical Oxygen Demand (BOD) ^{[1],[2]}	30 mg/L	45 mg/L
Carbonaceous Biochemical Oxygen Demand (CBOD) ^{[1],[2]}	25 mg/L	40 mg/L
Total Suspended Solids (TSS) ^[2]	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

Footnotes:

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

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

4.2.2. Technology-Based Effluent Limitations

4.2.2.1. **CBOD and TSS.** The CBOD and TSS effluent limitations, including the 85 percent removal requirements, are based on the secondary treatment standards and Basin Plan Table 4-2.

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

4.2.2.3. **Total Residual Chlorine.** Basin Plan Table 4-2 requires a technology-based total residual chlorine effluent limitation of 0.0 mg/L. This technology-based effluent limitation will be replaced by a water quality-based effluent limitation (see Fact Sheet § 4.3.4.4) on the first day of the month following U.S. EPA approval of the chlorine water quality objectives set forth in Regional Water Board Resolution R2-2020-0031.

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

4.3. Water Quality-Based Effluent Limitations

- 4.3.1. **Scope and Authority.** CWA section 301(b) and 40 C.F.R. section 122.44(d) require permits to include limitations more stringent than federal technology-based requirements where necessary to achieve water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective, water quality-based effluent limitations (WQBELs) must be established using (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information (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 thereby protect designated beneficial uses of receiving waters.
- 4.3.2. **Beneficial Uses and Water Quality Criteria and Objectives.** Discharge Point 001 discharges to Carquinez Strait, while Discharge Point 002 discharges to Mare Island Strait. Fact Sheet section 3.3.1 identifies the beneficial uses of Carquinez Strait and Mare Island Strait. Water quality criteria and objectives to protect these beneficial uses are described below.
- 4.3.2.1. **Basin Plan Objectives.** The Basin Plan specifies numerous water quality objectives, including numeric objectives for 10 priority pollutants, un-ionized ammonia, and total residual chlorine, and narrative water objectives for toxicity and bioaccumulation.
- 4.3.2.1.1. **Ammonia.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L (as nitrogen) as an annual median and 0.16 mg/L (as nitrogen) as a maximum for Carquinez Strait and Mare Island Strait and upstream waters (including Carquinez Strait and Mare Island Strait). Effluent and receiving water data are available for total ammonia, but not un-ionized ammonia, because (1) sampling and laboratory methods are unavailable to analyze for un-ionized ammonia,

and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on pH, salinity, and temperature of the receiving water.

To translate the un-ionized ammonia objectives into total ammonia criteria, pH, salinity, and temperature data were obtained from the Regional Monitoring Program (RMP) station nearest the outfall (Napa River, BD50). The un-ionized fraction of the total ammonia was calculated using the following equations (*Ambient Water Quality Criteria for Ammonia (Saltwater)*—1989, EPA Publication 440/5-88-004, 1989):

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

Where, for salinity less than 1 ppt:

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

T = temperature in Kelvin

Where, for salinity greater than 10 ppt:

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

$$I = \text{molal ionic strength of saltwater} = 19.9273*(S)/(1000 - 1.005109*S)$$

S = salinity (parts per thousand)

T = temperature in Kelvin

P = pressure (one atmosphere)

The 90th percentile and median un-ionized ammonia fractions were then used to express the maximum and annual average un-ionized objectives as acute and chronic total ammonia criteria. This approach is consistent with U.S. EPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality criteria (U.S. EPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication 823-B96-007). The equivalent acute and chronic total ammonia criteria are 4.9 mg/L and 1.7 mg/L (as nitrogen).

- 4.3.2.1.2. **Total Residual Chlorine.** On November 18, 2020, the Regional Water Board adopted Resolution R2-2020-0031, which amended the Basin Plan to eliminate the technology-based effluent limit for total residual chlorine of 0.0 mg/L and established new water quality objectives for chlorine. U.S. EPA must approve the new objectives before they become effective. The Discharger's receiving waters, Mare Island Strait and Carquinez Strait, are estuarine based on salinity monitoring data (see Fact Sheet § 4.3.2.6); therefore, the marine and estuarine chlorine objectives apply. For estuarine waters, the new chlorine water quality objectives will be 0.0075 mg/L as a four-day average and 0.013 mg/L as a one-hour average (see Basin Plan § 3.3.23).

4.3.2.1.3. **Chronic Toxicity**

4.3.2.1.3.1. **Prior to U.S. EPA Approval of the Toxicity Provisions.** Basin Plan section 3.3.18 contains the following chronic toxicity water quality objective:

All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.... There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community. Attainment of this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, or toxicity tests..., or other methods selected by the Water Board.

For this Order, prior to U.S. EPA approval of the Toxicity Provisions, this narrative objective is translated into a numeric criterion of 1.0 TUc. At 1.0 TUc, there is no observable detrimental effect when the indicator organism is exposed to 100 percent effluent; therefore, 1.0 TUc is a direct translation of the narrative objective into a number. Moreover, in *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document. March 1991, second printing, EPA/505/2-90-001) section 3.3.3 ("Step 3: Decision Criteria for Permit Limit Development"), U.S. EPA recommends that 1.0 TUc be used as a criterion continuous concentration (typically a four-day average). It further states that reasonable potential is shown where an effluent is projected to cause an excursion above the criterion continuous concentration. The Technical Support Document applies here as guidance because it directly addresses effluent characterization for whole effluent toxicity.

4.3.2.1.3.2. **After U.S. EPA Approval of the Toxicity Provisions.** After U.S. EPA approves the Toxicity Provisions, the following additional chronic toxicity water quality objective will apply:

H_o: Mean Response (ambient water) ≤ 0.75 x Mean Response (control water)

H_a: Mean Response (ambient water) > 0.75 x Mean Response (control water).

Where:

H_o = Null Hypothesis

H_a = Alternative Hypothesis,

0.75 = Regulatory Management Decision criterion (i.e., 75 percent)

H_0 means the ambient water is toxic when the test organism response in a bioassay is less than or equal to 75 percent of the control response; H_a means the ambient water is not toxic when the test organism response is greater than 75 percent of the control response. For example, if an average of 75 percent of bioassay test organisms or fewer survive when exposed to ambient water relative to the average number that survive when exposed to control water, the ambient water is toxic (i.e., the test result is “fail”). Conversely, if an average of more than 75 percent of bioassay test organisms survive relative to those exposed to control water, the ambient water is not toxic (i.e., the test result is “pass”).

4.3.2.1.4. **Bioaccumulation and Dioxin-TEQ.** The Basin Plan narrative bioaccumulation objective (Basin Plan § 3.3.2) states, “Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan’s narrative bioaccumulation water quality objective applies to these pollutants. Elevated levels of dioxins and furans in San Francisco Bay fish tissue demonstrate that the narrative bioaccumulation water quality objective is not being met. U.S. EPA has therefore placed Carquinez Strait, to which Mare Island Strait is tributary, on its 303(d) list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

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

CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

The CTR establishes a numeric water quality objective for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L for the protection of human health when aquatic organisms are consumed. This CTR criterion is used as a criterion for dioxin-TEQ because dioxin-TEQ represents a toxicity-weighted concentration equivalent to 2,3,7,8-TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion.

- 4.3.2.2. **CTR Criteria.** The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of “water and organisms” and others are for consumption of “organisms only.” The criteria applicable to “organisms only” apply to Carquinez Strait and Mare Island Strait because it is not a source of drinking water.
- 4.3.2.3. **NTR Criteria.** The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to Carquinez Strait and Mare Island Strait.
- 4.3.2.4. **Bacteria Objectives.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* establishes enterococcus bacteria water quality objectives to limit cases of gastrointestinal illness from water contact recreation. The enterococcus bacteria objectives apply to marine and estuarine waters.
- 4.3.2.5. **Sediment Quality Objectives.** The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains the following narrative water quality objectives:
 - 4.3.2.5.1. “Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California.” This objective is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this objective, it is to impose the objective as a receiving water limit.
 - 4.3.2.5.2. “Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health in bays and estuaries of California.” This objective is to be implemented by a

three-tiered procedure based on pollutant concentrations in sediment and fish tissue.

- 4.3.2.5.3. “Pollutants shall not be present in sediment at levels that alone or in combination are toxic to wildlife and resident finfish by direct exposure or bioaccumulate in aquatic life at levels that are harmful to wildlife or resident finfish by indirect exposure in bays and estuaries of California.” This objective is to be implemented on a case-by-case basis, based upon an ecological risk assessment.
- 4.3.2.6. **Receiving Water Salinity.** Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.
- Salinity data generated through the RMP at the Napa River sampling station (BD50) between 1993 and 2001 indicate that the salinity was less than 1 ppt in 24 percent of the samples and greater than 10 ppt in 45 percent of the samples. Carquinez Strait and Mare Island Strait are therefore estuarine in the vicinity of the discharge, and the reasonable potential analysis and effluent limitations in this Order are based on the lower of the fresh and saltwater objectives.
- 4.3.2.7. **Receiving Water Hardness.** The Discharger sampled receiving water near Discharge Point Nos. 001 and 002 from March 2003 through November 2005. The minimum hardness observed during this period was 470 mg/L as calcium carbonate (CaCO₃). These findings are consistent with hardness values collected by the RMP at the Napa River sampling station (BD50) from April 1999 through August 2001. To calculate water quality objectives for hardness dependent metals, this Order uses a geometric mean of the RMP hardness data of 400 mg/L as CaCO₃.
- 4.3.2.8. **Metals Translators.** Regulations at 40 C.F.R. section 122.45(c), require effluent limitations for metals to be expressed as total recoverable metal. Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, total suspended solids, and organic carbon may affect the form of metal

(dissolved, non-filterable, or otherwise) present and therefore available to cause toxicity. In general, dissolved metals are more available and more toxic to aquatic life than other forms. Site-specific translators can account for site-specific conditions, thereby preventing overly stringent or under-protective water quality objectives.

CTR default translators were used for all metals other than copper and nickel. Basin Plan Table 7.2.1-2 sets forth site-specific copper translators. The Clean Estuary Partnership’s *North of the Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (March 2005) contains site-specific nickel translators. These site-specific translators are listed in the table below:

Table F-6. Site-Specific Translators

Parameter	Acute Translator	Chronic Translator
Copper	0.66	0.38
Nickel	0.57	0.27

4.3.3. Reasonable Potential Analysis

4.3.3.1. **Available Information.** The reasonable potential analysis for this Order is based on effluent data the Discharger collected from November 2017 through April 2021 and ambient background data from two sources:

- The RMP’s *San Francisco Bay California Toxics Rule Priority Pollutant Ambient Water Monitoring Report* (2017), which includes data collected through the RMP at the Yerba Buena RMP station (BC10) from 1993 through 2015 and Napa River monitoring station (BD50) from 1993 through 2001.
- Bay Area Clean Water Agencies (BACWA) data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003), *Ambient Water Monitoring: Final CTR Sampling Update* (2004), *San Francisco Bay Ambient Water Monitoring Interim Report* (2003), and *Ambient Water Monitoring: Final CTR Sampling Update* (2004).

SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Accordingly, this Order uses far-field RMP monitoring station BC10 (Yerba Buena Island) to establish background conditions for most pollutants and nearby RMP monitoring station BD50 (Napa River) to establish background conditions for ammonia. The ammonia WQBELs are based on actual dilution at the edge of the initial mixing zone. Data from monitoring station BD50 best represent water quality at the edge of the initial mixing zone.

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, the MRP still requires monitoring for those pollutants. If effluent concentrations are found to have increased

significantly, Provision 6.3.2 of this Order requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases pose a threat to receiving water quality.

4.3.3.2. **Priority Pollutants, Ammonia, and Dioxin-TEQ.** SIP section 1.3 sets forth the methodology used to assess whether a priority pollutant has reasonable potential to exceed a water quality objective. SIP section 1.3 applies to priority pollutants and is used here as guidance for ammonia and dioxin-TEQ. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentrations (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:

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

The following table presents the maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the reasonable potential analysis, along with the results (yes, no, or unknown) for each pollutant. The pollutants that exhibit reasonable potential are dioxin-TEQ and ammonia. Additionally, Basin Plan sections 7.2.1.2 and 4.7.2.2 require copper and cyanide WQBELs for all individual NPDES permits for municipal wastewater treatment facilities.

Table F-7. 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 Result ^[3]
1	Antimony	4,300	0.50	1.8	No
2	Arsenic	36	1.5	2.5	No
3	Beryllium	No Criteria	<0.090	0.22	U
4	Cadmium	7.3	<0.050	0.13	No
5a	Chromium (III) ^[4]	644	0.53	4.4	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 Result ^[3]
5b	Chromium (VI) ^[4]	11	0.53	4.4	No
6	Copper	14	13	2.5	Yes
7	Lead	8.5	0.32	0.80	No
8	Mercury (303d listed)	—	—	—	^[5]
9	Nickel	30	3.1	3.7	No
10	Selenium	—	—	—	^[5]
11	Silver	2.2	0.12	0.052	No
12	Thallium	6.3	<0.050	0.023	No
13	Zinc	86	38	5.1	No
14	Cyanide	2.9	2.7	0.52	Yes
15	Asbestos ^[6]	No Criteria	Unavailable	Unavailable	U
16	2,3,7,8-TCDD	1.4E-08	<1.0E-06	1.7E-08	U
	Dioxin TEQ (303 d listed)	1.4E-08	1.9E-11	4.1E-08	Yes ^[7]
17	Acrolein	780	<1.7	<0.50	No
18	Acrylonitrile	0.66	<1.8	0.030	No
19	Benzene	71	<0.18	<0.050	No
20	Bromoform	360	<0.15	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.060	No
22	Chlorobenzene	21,000	<0.18	<0.18	No
23	Chlorodibromomethane	34	<0.17	<0.050	No
24	Chloroethane	No Criteria	<0.38	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	1.6	<0.19	U
27	Dichlorobromomethane	46	<0.16	<0.050	No
28	1,1-Dichloroethane	No Criteria	<0.19	<0.050	U
29	1,2-Dichloroethane	99	<0.18	0.040	No
30	1,1-Dichloroethylene	3.2	<0.21	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.050	No
32	1,3-Dichloropropylene	1,700	<0.16	<0.16	No
33	Ethylbenzene	29,000	<0.26	<0.26	No
34	Methyl Bromide	4,000	<0.30	<0.30	No
35	Methyl Chloride	No Criteria	<0.30	<0.30	U
36	Methylene Chloride	1,600	<0.40	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.15	<0.050	No
38	Tetrachloroethylene	8.9	<0.19	<0.050	No
39	Toluene	200,000	1.1	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.22	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U
42	1,1,2-Trichloroethane	42	<0.16	<0.050	No
43	Trichloroethylene	81	<0.20	<0.20	No
44	Vinyl Chloride	525	<0.25	<0.25	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 Result ^[3]
45	2-Chlorophenol	400	<0.40	<0.70	No
46	2,4-Dichlorophenol	790	<0.40	<0.90	No
47	2,4-Dimethylphenol	2,300	<0.40	<0.80	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.30	<0.60	No
49	2,4-Dinitrophenol	14,000	<0.20	<0.70	No
50	2-Nitrophenol	No Criteria	<0.40	<0.80	U
51	4-Nitrophenol	No Criteria	<0.50	<0.50	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.50	<0.80	U
53	Pentachlorophenol	7.9	<0.40	<0.60	No
54	Phenol	4,600,000	<0.30	<0.50	No
55	2,4,6-Trichlorophenol	6.5	<0.50	<0.97	No
56	Acenaphthene	2,700	<0.020	0.0020	No
57	Acenaphthylene	No Criteria	<0.020	0.0010	U
58	Anthracene	110,000	<0.010	0.0010	No
59	Benzidine	0.00054	<4.0	<0.00030	No
60	Benzo(a)Anthracene	0.049	<0.020	0.0050	No
61	Benzo(a)Pyrene	0.049	<0.020	0.0020	No
62	Benzo(b)Fluoranthene	0.049	<0.020	0.0050	No
63	Benzo(ghi)Perylene	No Criteria	<0.020	0.0030	U
64	Benzo(k)Fluoranthene	0.049	<0.020	0.0020	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.50	<0.30	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.40	<0.30	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.40	<0.60	U
68	Bis(2-Ethylhexyl)Phthalate	5.9	2.8	<0.50	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.50	<0.23	U
70	Butylbenzyl Phthalate	5,200	<0.50	<0.50	No
71	2-Chloronaphthalene	4,300	<0.40	<0.30	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.50	<0.30	U
73	Chrysene	0.049	<0.020	0.0020	No
74	Dibenzo(a,h)Anthracene	0.049	<0.020	0.0010	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3 Dichlorobenzidine	0.077	<5.0	<0.00020	No
79	Diethyl Phthalate	120,000	<0.50	<0.20	No
80	Dimethyl Phthalate	2,900,000	<0.50	<0.20	No
81	Di-n-Butyl Phthalate	12,000	<0.40	<0.50	No
82	2,4-Dinitrotoluene	9.1	<0.40	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.40	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.40	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.50	0.0040	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 Result ^[3]
86	Fluoranthene	370	<0.020	0.011	No
87	Fluorene	14,000	<0.010	0.0020	No
88	Hexachlorobenzene	0.00077	<0.40	0.000020	No
89	Hexachlorobutadiene	50	<0.40	<0.30	No
90	Hexachlorocyclopentadiene	17,000	<0.30	<0.30	No
91	Hexachloroethane	8.9	<0.40	<0.20	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.020	0.0040	No
93	Isophorone	600	<0.50	<0.30	No
94	Naphthalene	No Criteria	<0.020	0.0090	U
95	Nitrobenzene	1,900	<0.50	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.30	<0.30	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.50	<0.00020	No
98	N-Nitrosodiphenylamine	16	<0.30	<0.0010	No
99	Phenanthrene	No Criteria	<0.020	0.0060	U
100	Pyrene	11,000	<0.020	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.40	<0.30	U
102	Aldrin	0.00014	<0.0020	<0.0000085	No
103	Alpha-BHC	0.013	<0.0030	0.00050	No
104	Beta-BHC	0.046	<0.0030	0.00040	No
105	Gamma-BHC	0.063	<0.0030	0.0010	No
106	Delta-BHC	No Criteria	<0.0030	0.00010	U
107	Chlordane	0.00059	<0.020	0.00010	No
108	4,4'-DDT	0.00059	<0.0030	0.00020	No
109	4,4'-DDE	0.00059	<0.0040	0.0010	No
110	4,4'-DDD	0.00084	<0.0040	0.00030	No
111	Dieldrin	0.00014	<0.0040	0.00030	No
112	Alpha-Endosulfan	0.0087	<0.0030	0.00010	No
113	beta-Endosulfan	0.0087	<0.0030	0.00010	No
114	Endosulfan Sulfate	240	<0.0040	0.00010	No
115	Endrin	0.0023	<0.0040	0.000040	No
116	Endrin Aldehyde	0.81	<0.0040	<0.0050	No
117	Heptachlor	0.00021	<0.0030	0.000020	No
118	Heptachlor Epoxide	0.00011	<0.0030	0.00010	No
119-125	PCBs sum (303d listed)	—	—	—	^[5]
126	Toxaphene	0.00020	<0.30	<8.2E-7	No
	Ammonia, Total as N (mg/L)	1.7	42	0.19	Yes

Footnotes:

^[1] The MEC and ambient background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level (MDL).

^[2] The MEC or ambient background concentration is “Unavailable” when there are no monitoring data for the constituent.

- ^[3] RPA Results = Yes, if MEC \geq WQC, B > WQC and MEC is detected, or Trigger 3
= No, if MEC and B are < WQC or all effluent data are undetected
= Unknown (U) if no criteria have been promulgated or data are insufficient.
- ^[4] The maximum ambient background concentrations are the total chromium concentration. The chromium (III) and chromium (VI) concentrations are unknown but less than these values.
- ^[5] 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 CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs. A TMDL has also been developed for selenium in North San Francisco Bay, which includes Carquinez Strait and Mare Island Strait. Basin Plan section 7.2.4.5 finds that municipal wastewater dischargers have no reasonable potential to cause or contribute to the selenium impairment in San Francisco Bay segments and, therefore, are not required to have numeric effluent limitations.
- ^[6] Asbestos sampling is only required for discharges to waters with the municipal or domestic supply (MUN) beneficial use. Carquinez Strait and Mare Island Strait does not have the MUN beneficial use.
- ^[7] Reasonable potential is based on Triggers 2 and 3 because San Francisco Bay is 303(d)-listed for dioxin-TEQ and elevated levels of dioxin-TEQ are found in San Francisco Bay fish tissue. Dioxin-TEQ is also present in the discharge.

4.3.3.3. Acute Toxicity

4.3.3.3.1. **Prior to U.S. EPA Approval of the Toxicity Provisions.** Basin Plan section 4.5.5.3.1 requires acute toxicity monitoring and limitations, implying there is reasonable potential for the discharge to cause or contribute to exceedances of the acute toxicity water quality objective.

4.3.3.3.2. **After U.S. EPA Approval of the Toxicity Provisions.** When approved, the Toxicity Provisions will supersede Basin Plan section 4.5.5.3.1 and acute toxicity monitoring and limitations will not be required. During the previous order term, the Discharger monitored its effluent monthly for acute toxicity at 100 percent effluent. It did not detect toxicity violating its acute toxicity permit limits. Therefore, monitoring at the instream waste concentration (IWC) of 3.8 percent (see Fact Sheet § 4.3.4.2.2) would be very unlikely to find a percent effect or response causing a result of “fail” (i.e., exceeding the Toxicity Provisions’ acute toxicity water quality objective) using the TST. Thus, there is no reasonable potential for the discharge to cause or contribute to acute toxicity in the receiving water.

4.3.3.4. Chronic Toxicity

4.3.3.4.1. **Prior to U.S. EPA Approval of the Toxicity Provisions.** The Technical Support Document allows mixing zones and dilution credits to be considered when conducting a reasonable potential analysis. Basin Plan section 4.5.5.3.2 allows chronic toxicity dilution credits “comparable to those allowed for numeric chemical-specific objectives.” This Order uses a dilution ratio of 10:1 (D=9), the same as that used for most non-bioaccumulative pollutants (see Fact Sheet § 4.3.4.2).

This reasonable potential analysis considers bioassay results of zeolite-filtered effluent samples collected from January 2018 through January 2021. The Discharger conducted quarterly chronic toxicity tests during the previous order term using the Red Abalone (*Haliotis rufescens*). Regional Water Board staff conditionally approved zeolite filtration to

remove ammonia interference prior to testing during the previous order term (*Conditional Approval of Ammonia Removal before Chronic Toxicity Bioassays, NPDES Permit CA0037699*, Regional Water Board, October 12, 2016). The results of the zeolite-filtered effluent samples best represent the nature of the discharge without ammonia interference.

The maximum single-sample chronic toxicity result was 5.2 TUc in January 2018. Applying a dilution factor of D=9 (see Fact Sheet § 4.3.4.2), the maximum projected chronic toxicity concentration in the receiving water is calculated to be 0.58 TUc, below the translated water quality objective of 1.0 TUc (see Fact Sheet § 4.3.2.1.3.1). Thus, there is no reasonable potential for the discharge to cause or contribute to an exceedance of the water quality objective.

4.3.3.4.2. **After U.S. EPA Approval of the Toxicity Provisions.** Toxicity Provisions section III.C.5 requires a chronic toxicity effluent limit for publicly owned treatment works permitted to discharge 5.0 MGD or greater and required to have a pretreatment program under 40 C.F.R. section 403.8(a) as of January 1, 2020. The Discharger's Facility is a publicly owned treatment works permitted to discharge 5.0 MGD or more and is required to have a pretreatment program by the terms of 40 C.F.R. section 403.8(a); therefore, a chronic toxicity effluent limit is required.

4.3.3.5. **Total Residual Chlorine.** Basin Plan Table 4-2 requires a total residual chlorine effluent limitation for all treatment facilities with the potential to discharge chlorine. Following U.S. EPA approval of the chlorine water quality objectives set forth in Regional Water Board Resolution R2-2020-0031, a water quality-based effluent limitation for total residual chlorine will be required because the Facility disinfects its effluent with chlorine and, without sufficient dechlorination, the discharge could contain chlorine concentrations above the new water quality objective.

4.3.3.6. **Enterococcus Bacteria.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* requires *enterococcus* bacteria effluent limitations for discharges to marine and estuarine receiving waters that support the water contact recreation (REC1) beneficial use.

4.3.3.7. **Sediment Quality.** Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. The Sediment Quality Plan states that effluent limits to protect sediment quality are to be developed when:

- a direct relationship between the discharge and degraded sediment quality has been established;
- the pollutants causing degradation have been identified; and

- the reductions in pollutant loading needed to restore sediment quality have been estimated

However, to date there is no evidence directly linking compromised sediment conditions to the discharges subject to this Order; therefore, the Regional Water Board does not find reasonable potential for these discharges to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Discharger continues to participate in the Regional Monitoring Program, which routinely monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality.

- 4.3.4. **Water Quality-Based Effluent Limitations.** WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBEL calculations are based on the procedures in SIP section 1.4, except those for acute toxicity, chronic toxicity (after U.S. EPA approval of the Toxicity Provisions), total residual chlorine (after U.S. EPA approval of the new water quality objectives), and enterococcus bacteria.
- 4.3.4.1. **WQBEL Expression.** NPDES regulations at 40 C.F.R. section 122.45(d) require that permit limits for publicly-owned treatment works be expressed as average weekly and average monthly limits, unless impracticable. This Order contains daily limits instead of weekly limits because daily limits better protect against acute water quality effects and are necessary to prevent fish kills or mortality to aquatic organisms. Weekly limits could allow acute and chronic toxicity to occur over shorter periods (acute and chronic aquatic life criteria are typically expressed as one-hour and four-day averages).
- 4.3.4.2. **Dilution Credits.** SIP section 1.4.2 allows dilution credits under certain circumstances. The Carquinez Strait and Mare Island Strait outfalls (Discharge Points 001 and 002) were originally designed to achieve an initial dilution of at least 10:1. The Discharger's March 22, 2011, dilution study (*Mixing Zone Study Report, Vallejo Sanitation and Flood Control District, Limnotech*) estimated an initial dilution of 41:1 (41 parts total effluent mixed with receiving water to 1 part effluent) within approximately 56 feet of the Discharge Point 001 outfall. The Discharger's July 18, 2014, dilution study (*Mixing Zone Study Report for Mare Island Strait Diffuser, Vallejo Sanitation and Flood Control District, Limnotech*) estimated an initial dilution of 26:1 within 40 feet of the end of the new Discharge Point 002 diffuser at a discharge rate of 35 MGD. The estimated initial dilutions assume slack tide conditions (i.e., little or no current) and are based on high wet weather flows and therefore are likely conservative. The actual initial dilution is likely greater at the maximum permitted dry weather flow of 15.5 MGD.
- 4.3.4.2.1. **Bioaccumulative Pollutants.** For certain bioaccumulative pollutants, dilution credit is denied. Specifically, these pollutants include dioxin and furan compounds, which appear on the CWA section 303(d) list for San

Pablo Bay because, based on available data on the concentrations of these pollutants in aquatic organisms, sediment, and the water column, they impair San Pablo Bay beneficial uses. The following factors suggest insufficient assimilative capacity in San Francisco Bay for these pollutants.

Tissue samples taken from San Francisco Bay fish show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The results of a 1994 San Francisco Bay pilot study, presented in *Contaminated Levels in Fish Tissue from San Francisco Bay* (Regional Water Board, 1994) also show elevated levels of chemical contaminants in fish tissues. The Office of Environmental Health and Hazard Assessment completed a preliminary review of the data in the 1994 report and in December 1994 issued an interim consumption advisory covering certain fish species in San Francisco Bay due to the levels of some of these pollutants. The Office of Environmental Health and Hazard Assessment updated this advisory in a May 2011 report, *Health Advisory and Safe Eating Guidelines for San Francisco Bay Fish and Shellfish*, which still suggests insufficient assimilative capacity in San Francisco Bay for 303(d)-listed pollutants. Therefore, dilution credits are denied for bioaccumulative pollutants on the 303(d) list for which data are lacking on sources and significant uncertainty exists about how different sources contribute to bioaccumulation.

- 4.3.4.2.2. **Non-Bioaccumulative Pollutants (except for ammonia, total residual chlorine, and chronic toxicity).** For copper, cyanide, and enterococcus, mixing zones corresponding to a conservative dilution credit of 10:1 (D=9) have been established. The 10:1 dilution credit is based, in part, on Basin Plan Prohibition 1 (Table 4-1), which prohibits discharges with less than 10:1 dilution. SIP section 1.4.2 allows for limiting the dilution credit. The dilution credit is limited for the following reasons:
- 4.3.4.2.1.1. San Francisco Bay is a complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. SIP section 1.4.3 allows background conditions to be determined on a discharge-by-discharge or water body-by-water body basis. A water body-by-water body approach is taken here due to inherent uncertainties in characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.
- 4.3.4.2.1.2. Because of the complex hydrology of San Francisco Bay, there are uncertainties in accurately determining an appropriate mixing zone. The models used to predict dilution do not consider the three-dimensional nature of San Francisco Bay currents resulting from the interaction of tidal flushes and seasonal freshwater outflows. Being heavier and colder than freshwater, ocean saltwater enters San Francisco Bay on a twice-daily tidal cycle, generally beneath the warmer fresh water that

flows seaward. When these waters mix and interact, complex circulation patterns occur due to the varying densities of the fresh and ocean waters. The locations of this mixing and interaction change depending on the strength of each tide. Additionally, sediment loads from the Central Valley change on a long-term basis, affecting the depth of different parts of San Francisco Bay, resulting in alteration of flow patterns, mixing, and dilution at the outfalls.

4.3.4.2.2. **Ammonia, Total Residual Chlorine, and Chronic Toxicity.** For ammonia and total residual chlorine, a mixing zone corresponding to a conservative estimate of actual initial dilution of 26:1 (D=25) is established to calculate the effluent limitations. This is justified because ammonia and chlorine are both non-persistent pollutants that quickly disperse and degrade to a non-toxic state. As such, cumulative toxicity associated with ammonia or chlorine from other unrelated discharges is unlikely. For chronic toxicity, this Order establishes the same likely conservative estimate of actual initial dilution, which corresponds to an IWC of 3.8 percent assuming there is no ambient chronic toxicity.

4.3.4.3. **WQBEL Calculations.** The following table shows the WQBEL calculations for copper, cyanide, dioxin-TEQ and total ammonia. The copper and cyanide WQBELs are calculated as required by SIP section 1.4. This same methodology is used as guidance to calculate the total ammonia and dioxin-TEQ WQBELs.

Table F-8. WQBEL Calculations

POLLUTANTS	Cyanide	Copper	Dioxin-TEQ	Ammonia (Acute)	Ammonia (Chronic)
Units	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
Basis and Criteria type	Basin Plan Site Specific Objective	Basin Plan Site Specific Objective	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	—	—	—	4.9	—
Criteria -Chronic	—	—	—	—	1.7
Site Specific Objective Criteria -Acute	9.4	9.4	—	—	—
Site Specific Objective Criteria -Chronic	2.9	6.0	—	—	—
Water Effects Ratio (WER)	1	1	1	1	1
Lowest WQO	2.9	6.0	1.4E-08	4.9	1.7
Site Specific Translator - MDEL	—	0.66	—	—	—
Site Specific Translator - AMEL	—	0.38	—	—	—
Dilution Factor (D) (if applicable)	9	9	0	25	25
No. of samples per month	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	Y	Y
HH criteria analysis required? (Y/N)	Y	N	Y	N	N

POLLUTANTS	Cyanide	Copper	Dioxin-TEQ	Ammonia (Acute)	Ammonia (Chronic)
Units	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
Basis and Criteria type	Basin Plan Site Specific Objective	Basin Plan Site Specific Objective	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Applicable Acute WQO	9.4	14	—	4.9	—
Applicable Chronic WQO	2.9	16	—	—	1.7
HH criteria	2.2E+05	—	1.4E-08	—	—
Background (Maximum Conc for Aquatic Life calc)	0.52	2.5	5.3E-08	0.19	0.12
Background (Average Conc for Human Health calc)	0.44	—	2.0E-08	—	—
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	Y	N	N
ECA acute	89	119	—	123	—
ECA chronic	24	135	—	—	41
ECA HH	2.2E+06	—	1.4E-08	—	—
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	Y	N	N
Avg of effluent data points	1.5	8.1	N/A	24	24
Std Dev of effluent data points	0.63	1.4	N/A	6.4	6.4
CV calculated	0.41	0.17	N/A	0.27	0.27
CV (Selected) - Final	0.41	0.17	0.60	0.27	0.27
ECA acute mult99	0.43	0.69	—	0.56	0.56
ECA chronic mult99	0.64	0.82	—	0.74	0.97
LTA acute	39	82	—	69	—
LTA chronic	15	111	—	—	40
minimum of LTAs	15	82	—	69	40
AMEL mult95	1.4	1.1	1.6	1.2	1.1
MDEL mult99	2.3	1.5	3.1	1.8	1.8
AMEL (aq life)	21	94	—	85	43
MDEL (aq life)	36	119	—	123	71
MDEL/AMEL Multiplier	1.7	1.3	2.0	1.4	1.6
AMEL (human hlth)	2.2E+06	—	1.4.E-08	—	—
MDEL (human hlth)	3.7E+06	—	2.8.E-08	—	—
minimum of AMEL for Aq. life vs HH	21	94	1.4E-08	88	43
minimum of MDEL for Aq. Life vs HH	36	119	2.8E-08	123	71
Previous order limit - AMEL	19	84	1.4.E-08	44	44

POLLUTANTS	Cyanide	Copper	Dioxin-TEQ	Ammonia (Acute)	Ammonia (Chronic)
Units	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
Basis and Criteria type	Basin Plan Site Specific Objective	Basin Plan Site Specific Objective	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Previous order limit - MDEL	40	120	2.8.E-08	86	86
Final limit - AMEL	19	84	1.4E-08	44	43
Final limit - MDEL	36	119	2.8E-08	86	71

4.3.4.4. **Total Residual Chlorine.** The total residual chlorine effluent limitation is based on Basin Plan Table 4-2. Following U.S. EPA approval of the chlorine water quality objectives set forth in Regional Water Board Resolution R2-2020-0031, this technology-based effluent limitation will be replaced by a water quality-based effluent limitation. To calculate the water quality-based total residual chlorine effluent limit, this Order establishes a mixing zone corresponding to an initial dilution of 26:1 (D=25) (see Fact Sheet § 4.3.4.2.2). This Order uses a simplified equation from SIP section 1.4 because background concentrations for total residual chlorine are assumed to be zero:

$$ECA = (D + 1) \times C$$

Where

ECA = Effluent Concentration Allowance (effluent limitation)

C = water quality objective (0.013 mg/L)

D = dilution factor (D = 25)

Therefore, the resulting WQBEL = ECA = 26 × 0.013 = 0.34 mg/L.

4.3.4.5. **Enterococcus Bacteria.** This Order imposes enterococcus effluent limitations based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*. This Order establishes a mixing zone associated with an initial dilution of 10:1 (D=9) to calculate the enterococcus effluent limitation (see Fact Sheet § 4.3.4.2.1). To establish background conditions, the Discharger collected two enterococcus receiving water samples near Discharge Point 002. The maximum sample result was 10 CFU/100 mL.

The enterococcus effluent limitation was calculated, as specified in SIP section 1.4, using the following equation:

$$ECA = C + D*(C - B)$$

Where:

ECA = Effluent Concentration Allowance (effluent limitation)

- C = Water quality objective (30 CFU/100 mL, 110 CFU/100mL)
- D = Dilution factor (D=9)
- B = Background concentration (10 CFU/100 mL)

This calculation results in a six-week rolling geometric mean enterococcus effluent limitation of 210 CFU/100 mL and a limitation of no more than 10 percent of enterococcus samples in a calendar month exceeding 1,010 CFU/100mL.

- 4.3.4.6. **Acute Toxicity.** Until the first day of the month following U.S. EPA approval of the Toxicity Provisions, this Order includes effluent limitations for acute toxicity based on Basin Plan Table 4-3.

4.4. Discharge Requirement Considerations

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

On the first day of the month following U.S. EPA approval of the Toxicity Provisions, the acute toxicity effluent limits in section 4.4 of this Order will no longer be in effect. This complies with anti-backsliding requirements because effluent data do not indicate reasonable potential for acute toxicity and degradation will not occur (see Fact Sheet § 4.4.2). These findings are consistent with State Water Board Order WQ 2001-16.

This Order contains new enterococcus effluent limits based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*. The new enterococcus effluent limits, based on a six-week rolling geometric mean concentration and monthly statistical threshold value, are not comparable to the pre-approval enterococcus effluent limits, which were based on a 30-day geometric mean and single sample maximum. The anti-backsliding rule does not apply to a limit that is not comparable to the prior limit (State Water Board Order WQ 2001-06).

- 4.4.2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with federal requirements. The State Water Board's *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Resolution 68-16) sets forth California's antidegradation policy. Where the federal antidegradation policy is applicable, the State Water Board has interpreted Resolution 68-16 to incorporate the federal antidegradation policy. A permitted discharge must be

consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

This Order does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for an increased flow or a reduced level of treatment relative to the previous order.

This Order imposes new aquatic toxicity requirements the first day of the month following U.S. EPA approval of the Toxicity Provisions. The previous order required acute and chronic toxicity monitoring, imposed effluent limits on acute toxicity, and imposed toxicity reduction evaluation (TRE) triggers on chronic toxicity. After U.S. EPA approval of the Toxicity Provisions, this Order instead requires chronic toxicity monitoring at the IWC (routine monitoring and MMEL compliance tests) and at a waste concentration of 10 percent (surveillance monitoring), which is greater than twice the IWC. It also imposes chronic toxicity effluent limits at the IWC and TRE triggers on chronic toxicity at 10 percent effluent. The surveillance monitoring and TRE triggers will ensure that a comparable level of treatment will be maintained; thus, these requirements will ensure that receiving water quality will not be degraded. As for the acute toxicity limits, chronic toxicity requirements are protective against acute toxicity, which is caused by higher levels of toxicants. For these reasons, water quality will not be degraded.

This Order includes new enterococcus limits established on a different basis from the previous ones; however, the new limits reflect the most up-to-date water quality objectives for protecting water contact recreation. The new limits will ensure that water quality will not be degraded as it relates to bacteria.

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

This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating these WQBELs are based on the CTR, as implemented in accordance with the SIP, which U.S. EPA approved on May 18, 2000. U.S. EPA approved most Basin Plan beneficial uses and water quality objectives prior to May 30, 2000. Beneficial uses and water quality objectives submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA

before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to 40 C.F.R. section 131.21(c)(1). U.S. EPA approved the remaining beneficial uses and water quality objectives, so they are also applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

5. RATIONALE FOR RECEIVING WATER LIMITATIONS

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

6. RATIONALE FOR PROVISIONS

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

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

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

6.3. Special Provisions

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

- 6.3.2. **Effluent Characterization Study and Report.** This Order does not include WQBELs for pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to evaluate monitoring data to verify that the reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to 40 C.F.R. section 122.41(h) and Water Code section 13383. It is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.
- 6.3.3. **Pollutant Minimization Program.** This provision is based on Basin Plan section 4.13.2 and SIP section 2.4.5.
- 6.3.4. **Special Provisions for Publicly-Owned Treatment Works**
- 6.3.4.1. **Pretreatment Program.** This provision is based on 40 C.F.R. part 403. The Discharger implements a pretreatment program due to the nature and volume of industrial influent to the treatment plant. This provision lists the Discharger’s responsibilities regarding its pretreatment program and requires compliance with the provisions in Attachment H, “Pretreatment Requirements.”
- 6.3.4.2. **Sludge and Biosolids Management.** This provision is based on Basin Plan section 4.17. “Sludge” refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. “Biosolids” refers to sludge that has been treated and may be beneficially reused.
- 6.3.4.3. **Collection System Management.** The Discharger’s collection system is part of the Facility regulated through this Order. This provision requires compliance with Attachments D and G and states that these requirements may be satisfied by separately complying with State Water Board Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, as amended by State Water Board Order WQ 2013-0058-EXEC and any subsequent order updating these requirements. These statewide WDRs require public agencies that own or operate sanitary sewer systems with one or more miles of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer overflows, among other provisions and prohibitions. The statewide WDRs contain requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G. Compliance with the statewide WDRs will satisfy the corresponding requirements in Attachments D and G.

6.3.5. Other Special Provisions

- 6.3.5.1. **Specific Tasks to Reduce Blending.** This provision is based on 40 C.F.R. section 122.41(m) and U.S. EPA's proposed peak wet weather policy (*National Pollutant Discharge Elimination System Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems*, Fed. Reg. Vol. 70, No. 245, pages 76013-76018, December 22, 2005). It relates to peak wet weather flow bypasses around secondary treatment units. These provisions require the Discharger to implement specific tasks to minimize wet weather diversions and reduce the occurrence of blending based on the Discharger's No Feasible Alternatives Analysis, dated February 2022 (see Fact Sheet § 4.1.1.2.2). This Order requires the Discharger to submit a new No Feasible Alternatives Analysis with its Report of Waste Discharge if it desires to continue blending and seeks Regional Water Board approval. The analysis must address the criteria for approval as set forth in 40 C.F.R. section 122.41(m)(4)(i)(A)-(C). The Regional Water Board will use the No Feasible Alternatives Analysis to determine whether all feasible alternatives to blending bypasses have been or will be implemented. If so, the Regional Water Board may approve the anticipated bypasses pursuant to 40 C.F.R. section 122.41(m)(4)(ii).
- 6.3.5.2. **Copper Action Plan.** This provision is based on Basin Plan section 7.2.1.2 and is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies. This Order requires the Discharger to implement source control and pollution prevention for identified sources. Additional actions may be necessary depending on the three-year rolling mean copper concentration in San Pablo Bay. Data compiled by the San Francisco Estuary Institute for 2015-2019 indicate no degradation of San Francisco Bay water quality with respect to copper (<https://www.sfei.org/pages/copper-site-specific-objective-3-year-rolling-averages-0>).
- 6.3.5.3. **Cyanide Action Plan.** This provision is based on Basin Plan section 4.7.2.2 and is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The threshold for considering influent cyanide concentrations to indicate a possible "significant cyanide discharge" in the Discharger's service area is set at 6.8 µg/L. This concentration is twice the maximum cyanide concentration (3.4 µg/L) found in the treatment plant influent during the previous order term. Because the Discharger has observed no influent cyanide concentrations greater than 3.4 µg/L during the previous permit term, influent concentrations twice this level could indicate a significant cyanide source.
- 6.3.5.4. **Resource Recovery from Anaerobically Digestible Material.** Standard Operating Procedures are required for publicly-owned treatment works (POTWs) that accept hauled waste food, fats, oil, and grease for injection

into anaerobic digesters. The development and implementation of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs.

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

- 6.3.5.5. **Average Annual Selenium Load.** This provision is based on Basin Plan section 7.2.4.5. The information will be used to confirm that selenium loads are consistent with wasteload allocations established in the North San Francisco Bay Selenium TMDL. The requirements regarding treatment of estimated and non-detect values are consistent with the load calculations.

7. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

7.1. Monitoring Requirements Rationale

- 7.1.1. **Influent Monitoring.** Influent flow monitoring is necessary to understand Facility operations and to evaluate compliance with Prohibition 3.4, which prohibits average dry weather influent flow greater than 15.5 MGD. Influent CBOD and TSS monitoring are necessary to evaluate compliance with this Order's 85 percent removal requirement. Basin Plan section 4.7.2.2 requires influent cyanide monitoring because this Order is based on site-specific cyanide water quality objectives.
- 7.1.2. **Effluent Monitoring.** Effluent flow monitoring at Monitoring Locations EFF-001 and EFF-002 is necessary to understand Facility operations. Monitoring for the other parameters specified in this MRP is necessary to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses. Effluent monitoring at Monitoring Location EFF-001b is necessary to evaluate compliance during wet weather blending events and to differentiate these data from those collected when no bypass is taking place.

7.1.3. **Toxicity Testing.** Toxicity tests are necessary to evaluate compliance with this Order's effluent limitations. Chronic toxicity tests are also necessary to evaluate whether the Toxicity Provisions' chronic toxicity water quality objectives are met, conduct future reasonable potential analyses, and evaluate whether Toxicity Reduction Evaluations are needed (CWC § 13383).

The Toxicity Provisions require routine monitoring and MMEL compliance tests for chronic toxicity at the IWC to ensure compliance with toxicity effluent limitations. This Order grants a mixing zone for chronic toxicity corresponding to a dilution ratio of at least 26:1 (D=25), equivalent to an IWC of 3.8 percent. The Discharger must evaluate the MDEL and MMEL based on the IWC.

Because the discharger's IWC is less than 5 percent effluent, this Order requires surveillance monitoring at an effluent concentration of 10 percent. The Discharger is required to report results for surveillance monitoring at monitoring location SUR-001 instead of EFF-001 to distinguish surveillance monitoring results from monitoring used to evaluate compliance with effluent limits.

Toxicity Provisions section III.C.4.b.i(B) allow the permitting authority to reduce the routine monitoring frequency when the Discharger has an initial dilution of at least 10:1 and the Discharger undertakes surveillance monitoring at an effluent concentration of at least double the IWC. Because the Discharger's initial dilution is greater than 10:1 and this Order requires surveillance monitoring at more than double the IWC, this Order reduces the routine monitoring frequency for toxicity from quarterly to twice per year, in accordance with the Toxicity Provisions.

This Order retains the requirement to use the red abalone (*Haliotis rufescens*) for chronic toxicity tests prior to U.S. EPA approval of the Toxicity Provisions. The Discharger's 2010 chronic toxicity screening phase study (*Vallejo Sanitation and Flood Control District Wastewater Treatment Facility Effluent Chronic Toxicity Screening Study*, AQUA-Science, May 25, 2010) found that of the species screened only red abalone was sensitive to the Discharger's effluent. Bioassays using red abalone continue to detect low levels of chronic toxicity in the Discharger's effluent after it has been filtered with zeolite, showing that abalone remains sensitive to this discharge.

The MRP (Attachment E), Appendix E-1, section 2.1.2., requires a new chronic toxicity screening that satisfies the minimum screening requirements stated in Toxicity Provisions section III.C.2.a within 18 months of the effective date of this Order or of U.S. EPA approval of the Toxicity Provisions, whichever is later. The Toxicity Provisions require that data are analyzed using the TST, and the test species include one vertebrate, one invertebrate, and one aquatic plant/algae from Table 1 of Toxicity Provisions section III.B.2. The Toxicity Provisions species screening requirements are summarized in the MRP, Appendix E-2. If this species screening determines that a species other than red abalone is most sensitive, that species will replace red abalone.

- 7.1.4. **Receiving Water Monitoring.** The Discharger is required to continue participating in the Regional Monitoring Program, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. This monitoring is necessary to characterize the receiving water and the effects of the discharge this Order authorizes.
- 7.1.5. **Pretreatment and Biosolids Monitoring Requirements.** The pretreatment and biosolids monitoring requirements for influent, effluent, and biosolids are necessary to evaluate compliance with pretreatment requirements.
- 7.1.6 **Recycled Water Monitoring.** The recycled water monitoring and reporting requirements incorporate the existing requirements of State Water Board Order WQ 2019-0037-EXEC (*Amending Monitoring and Reporting Programs for Waste Discharge Requirements, National Pollutant Discharge Elimination System Permits, Water Reclamation Requirements, Master Recycling Permits, and General Waste Discharge Requirements*), issued on July 24, 2019, pursuant to Water Code section 13267 and 13383.
- 7.1.7 **Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires some dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program that evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories, and evaluates each laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES program. There are two options to comply: (1) the Discharger may obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, the Discharger may submit results from the most recent Water Pollution Performance Evaluation Study. MRP section 1.4 requires the Discharger to ensure that the results of the DMR-QA Study or most recent Water Pollution Performance Evaluation Study are submitted to the State Water Board, which forwards the results to U.S. EPA.
- 7.2. **Monitoring Requirements Summary.** The table below summarizes routine monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order. In addition to undertaking the monitoring below, the Discharger must conduct receiving water monitoring by continuing to participate in the Regional Monitoring Program.

Table F-9. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent EFF-001 and EFF-002 ^[1]	Effluent EFF-001b	Sludge and Biosolids	Receiving Water
Flow	Continuous/D	Continuous/D	1/Day	—	Support RMP
Volume of Partially-Treated Wastewater Discharged	—	—	1/Blending Event	—	—
Blending Duration	—	—	1/Blending Event	—	—
CBOD ₅	2/Week	2/Week	1/Year ^[2]	—	—
TSS	2/Week	2/Week	1/Day	—	—
Chlorine, Total Residual	—	Continuous/D	Continuous/D	—	—
Enterococcus	—	2/Week	1/Day	—	Support RMP
Acute Toxicity	—	1/Month	—	—	Support RMP
Chronic Toxicity	—	1/Quarter ^[3]	—	—	Support RMP
Copper, Total Recoverable	—	1/Month	1/Year ^[2]	—	Support RMP
Cyanide, Total	1/Quarter	1/Month	1/Year ^[2]	Once	Support RMP
Dioxin-TEQ	—	Once	—	—	Support RMP
Ammonia, Total	—	1/Month	1/Year ^[2]	—	Support RMP
Selenium	—	1/Month	—	Once	Support RMP
Remaining Priority Pollutants	—	Once	—	—	Support RMP
VOCs	1/Year	Once	—	1/Year	—
BNAs	1/Year	Once	—	1/Year	—
Metals	1/Month	1/Month	—	Once	—
Hexavalent Chromium	1/Month	1/Month	—	Once	—
Mercury	1/Quarter	1/Quarter	—	Once	—

Footnotes:

^[1] When discharging from Discharge Point 001 only, all parameters are to be monitored at Monitoring Location EFF-001; when discharging from Discharge Point 002 only, all parameters are to be monitored at Monitoring Location EFF-002. When discharging from Discharge Points 001 and 002, flow, total residual chlorine, enterococcus bacteria, and pH are to be monitored at both Monitoring Locations EFF-001 and EFF-002; all other parameters are to be monitored at Monitoring Location EFF-001 or EFF-002.

^[2] If a TSS sample collected during a blending event exceeds 45 mg/L, the frequency is to be once per day.

^[3] After U.S. EPA approves the Toxicity Provisions, this frequency will be twice per year (2/Year).

8. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, Regional Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process.

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

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

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 January 9, 2023.

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

Date: February 8, 2023
Time: 9:00 a.m.

Contact: John Madigan, (510) 622-2405, John.Madigan@waterboards.ca.gov

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

Dates and venues can change. The [Regional Water Board's website](https://waterboards.ca.gov/sanfranciscobay) is (waterboards.ca.gov/sanfranciscobay), where one can access the current agenda for changes.

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

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

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

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

- 8.5. Information and Copying.** The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the Regional Water Board address above at any time online or by making an appointment with the Regional Water Board's custodian of records. Document copying may be arranged by calling (510) 622-2300.
- 8.6. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.
- 8.7. Additional Information.** Requests for additional information or questions regarding this Order should be directed to John Madigan, (510) 622-2405, John.Madigan@waterboards.ca.gov

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

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

APPLICABILITY

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

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply – Not Supplemented

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

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

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

1.3.1.1. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;

1.3.1.2. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;

1.3.1.3. Emergency standby power;

1.3.1.4. Protection against vandalism;

1.3.1.5. Expedient action to repair failures of, or damage to, equipment, including any sewer lines;

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

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

1.5. Property Rights – Not Supplemented

1.6. Inspection and Entry – Not Supplemented

1.7. Bypass – Not Supplemented

1.8. Upset – Not Supplemented

1.9. Other – Addition to Attachment D

1.9.1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.

1.9.2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

1.9.3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

2. STANDARD PROVISIONS – PERMIT ACTION – NOT SUPPLEMENTED

3. STANDARD PROVISIONS – MONITORING

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

3.1.1. **Certified Laboratories.** Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code section 13176.

3.1.2. **Minimum Levels.** For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3.1.3. **Monitoring Frequency.** The MRP specifies the minimum sampling and analysis schedule.

3.1.3.1. Sample Collection Timing

3.1.3.1.1. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer

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

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

3.1.3.2. **Conditions Triggering Accelerated Monitoring**

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

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

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

3.2. Standard Observations – Addition to Attachment D

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

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

4. STANDARD PROVISIONS – RECORDS

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

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

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

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

Monitoring records shall include the following:

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

4.2.2.2. For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:

4.2.2.2.1. Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);

4.2.2.2.2. Chlorine dosage (kg/day); and

4.2.2.2.3. Dechlorination chemical dosage (kg/day).

4.2.3. **Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:

4.2.3.1. Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and

4.2.3.2. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

4.2.4. **Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:

4.2.4.1. Chronological log of treatment process bypasses;

4.2.4.2. Identification of treatment processes bypassed;

4.2.4.3. Beginning and ending dates and times of bypasses;

4.2.4.4. Bypass durations;

4.2.4.5. Estimated bypass volumes; and

4.2.4.6. Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.

4.2.5. **Treatment Plant Overflows.** The Discharger shall retain a chronological log of overflows at the treatment plant, including the headworks and all units and appurtenances downstream, and records supporting the information provided in accordance with Provision 5.5.2, below.

4.3. Claims of Confidentiality – Not Supplemented

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information – Not Supplemented

5.2. Signatory and Certification Requirements – Not Supplemented

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

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

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

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

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

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

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

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

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

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

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

5.3.1.5. **Results Not Yet Available.** The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses may require additional time to complete analytical processes and report results. In these cases, the Discharger shall describe the circumstances in the self-monitoring report and include the data for these parameters and relevant discussions of any violations in the next self-monitoring report due after the results are available.

5.3.1.6. **Annual Self-Monitoring Reports.** By the date specified in the MRP, the Discharger shall submit an annual self-monitoring report covering the previous calendar year. The report shall contain the following:

5.3.1.6.1. Comprehensive discussion of treatment plant performance, including documentation of any blending or other bypass events, and compliance with the permit. This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve the performance and reliability of wastewater collection, treatment, or disposal practices;

5.3.1.6.2. List of approved analyses, including the following:

5.3.1.6.2.1. List of analyses for which the Discharger is certified;

5.3.1.6.2.2. List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory need not be submitted but shall be retained onsite); and

5.3.1.6.2.3. List of “waived” analyses, as approved;

5.3.1.6.3. Plan view drawing or map showing the Discharger’s facility, flow routing, and sampling and observation station locations; and

5.3.1.6.4. Results of facility report reviews. The Discharger shall regularly review, revise, and update, as necessary, the Operation and Maintenance Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report so these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall describe or summarize its review and evaluation procedures, recommended or planned actions, and estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure that they remain up-to-date.

5.4. Compliance Schedules – Not supplemented

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

5.5.1. Oil or Other Hazardous Material Spills

5.5.1.1. Within 24 hours of becoming aware of a spill of oil or other hazardous material not contained onsite and completely cleaned up, the Discharger shall report as follows:

5.5.1.1.1. If the spill exceeds reportable quantities for hazardous materials listed in 40 C.F.R. part 302. The Discharger shall call the California Office of Emergency Services (800 852-7550).

5.5.1.1.2. If the spill does not exceed reportable quantities for hazardous materials listed in 40 C.F.R., part 302, the Discharger shall call the Regional Water Board (510-622-2369).

5.5.1.2. The Discharger shall submit a written report to the Regional Water Board within five working days following either of the above telephone notifications unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

5.5.1.2.1. Date and time of spill, and duration if known;

5.5.1.2.2. Location of spill (street address or description of location);

5.5.1.2.3. Nature of material spilled;

5.5.1.2.4. Quantity of material spilled;

5.5.1.2.5. Receiving water body affected, if any;

5.5.1.2.6. Cause of spill;

5.5.1.2.7. Estimated size of affected area;

5.5.1.2.8. Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

5.5.1.2.9. Corrective actions taken to contain, minimize, or clean up the spill;

5.5.1.2.10. Future corrective actions planned to prevent recurrence, and implementation schedule; and

5.5.1.2.11. Persons or agencies notified.

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

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

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

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

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

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

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

5.6. Planned Changes – Not supplemented

5.7. Anticipated Noncompliance – Not supplemented

5.8. Other Noncompliance – Not supplemented

5.9. Other Information – Not supplemented

6. STANDARD PROVISIONS – ENFORCEMENT – NOT SUPPLEMENTED

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – NOT SUPPLEMENTED

8. DEFINITIONS – ADDITION TO ATTACHMENT D

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

8.1. Arithmetic Calculations

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

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

or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1	Antimony	204.2	-	-	-	-	10	5	50	0.5	5	0.5	-	1000
2	Arsenic	206.3	-	-	-	20	-	2	10	2	2	1	-	1000
3	Beryllium	-	-	-	-	-	20	0.5	2	0.5	1	-	-	1000
4	Cadmium	200 or 213	-	-	-	-	10	0.5	10	0.25	0.5	-	-	1000
5a	Chromium (III)	SM 3500	-	-	-	-	-	-	-	-	-	-	-	-
5b	Chromium (VI)	SM 3500	-	-	-	10	5	-	-	-	-	-	-	1000
	Chromium (total) ^[3]	SM 3500	-	-	-	-	50	2	10	0.5	1	-	-	1000
6	Copper	200.9	-	-	-	-	25	5	10	0.5	2	-	-	1000
7	Lead	200.9	-	-	-	-	20	5	5	0.5	2	-	-	10,000
8	Mercury	1631 ^[4]	-	-	-	-	-	-	-	-	-	-	-	-
9	Nickel	249.2	-	-	-	-	50	5	20	1	5	-	-	1000
10	Selenium	200.8 or SM 3114B or C	-	-	-	-	-	5	10	2	5	1	-	1000
11	Silver	272.2	-	-	-	-	10	1	10	0.25	2	-	-	1000
12	Thallium	279.2	-	-	-	-	10	2	10	1	5	-	-	1000
13	Zinc	200 or 289	-	-	-	-	20	-	20	1	10	-	-	-
14	Cyanide	SM 4500 CN- C or I	-	-	-	5	-	-	-	-	-	-	-	-
15	Asbestos (only required for dischargers to MUN waters) ^[5]	100.2 ^[6]	-	-	-	-	-	-	-	-	-	-	-	-
16	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613	-	-	-	-	-	-	-	-	-	-	-	-
17	Acrolein	603	2.0	5	-	-	-	-	-	-	-	-	-	-
18	Acrylonitrile	603	2.0	2	-	-	-	-	-	-	-	-	-	-
19	Benzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
33	Ethylbenzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
39	Toluene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
20	Bromoform	601	0.5	2	-	-	-	-	-	-	-	-	-	-
21	Carbon Tetrachloride	601	0.5	2	-	-	-	-	-	-	-	-	-	-

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

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

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

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

Footnotes:

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

ATTACHMENT H – PRETREATMENT REQUIREMENTS

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ATTACHMENT H – PRETREATMENT REQUIREMENTS

- 1.** The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 C.F.R. 403, including any regulatory revisions to Part 403. Where a Part 403 revision is promulgated after the effective date of the Discharger's permit and places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the issuance date of this permit or six months from the effective date of the Part 403 revisions, whichever comes later.

(If the Discharger cannot complete the required actions within the above six-month period due to the need to process local adoption of sewer use ordinance modifications or other substantial pretreatment program modifications, the Discharger shall notify the Executive Officer in writing at least 60 days prior to the six-month deadline. The written notification shall include a summary of completed required actions, an explanation for why the six month deadline cannot be met, and a proposed timeframe to complete the rest of the required actions as soon as practical but not later than within twelve months of the issuance date of this permit or twelve months of the effective date of the Part 403 revisions, whichever comes later. The Executive Officer will notify the Discharger in writing within 30 days of receiving the request if the extension is not approved.)

The United States Environmental Protection Agency (U.S. EPA), the State and/or other appropriate parties may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Clean Water Act (Act).

- 2.** The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Discharger shall cause nondomestic users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.
- 3.** The Discharger shall perform the pretreatment functions as required in 40 C.F.R. 403 and amendments or modifications thereto including, but not limited to:
 - 3.1.** Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 C.F.R. 403.8(f)(1);
 - 3.2.** Implement the programmatic functions as provided in 40 C.F.R. 403.8(f)(2);
 - 3.3.** Publish an annual list of nondomestic users in significant noncompliance as provided per 40 C.F.R. 403.8(f)(2)(viii);
 - 3.4.** Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. 403.8(f)(3); and

- 3.5.** Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 C.F.R. 403.5 and 403.6, respectively.
- 4.** The Discharger shall submit annually a report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous calendar year. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix H-1 entitled, "Requirements for Pretreatment Annual Reports." The annual report is due each year on February 28.
- 5.** The Discharger shall submit a pretreatment semiannual report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, information specified in Appendix H-2 entitled, "Requirements for Pretreatment Semiannual Reports." The semiannual report is due July 31 for the period January through June. The information for the period July through December of each year shall be included in the Annual Report identified in Appendix H-1. The Executive Officer may exempt the Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and U.S. EPA's comment and approval.
- 6.** The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge (biosolids) as described in Appendix H-4 entitled, "Requirements for Influent, Effluent and Sludge (Biosolids) Monitoring." (The term "biosolids," as used in this Attachment, shall have the same meaning as wastewater treatment plant "sludge" and will be used from this point forward.) The Discharger shall evaluate the results of the sampling and analysis during the preparation of the semiannual and annual reports to identify any trends. Signing the certification statement used to transmit the reports shall be deemed to certify the Discharger has completed this data evaluation. A tabulation of the data shall be included in the pretreatment annual report as specified in Appendix H 4. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX H-1: REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on February 28 and shall contain activities conducted during the previous calendar year. The purpose of the Annual Report is to:

- Describe the status of the Discharger's pretreatment program; and
- Report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation.

The report shall contain, at a minimum, the following information:

1. Cover Sheet

The cover sheet shall include:

- 1.1. The name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of the Discharger(s) that is part of the Pretreatment Program;
- 1.2. The name, address and telephone number of a pretreatment contact person;
- 1.3. The period covered in the report;
- 1.4. A statement of truthfulness; and
- 1.5. The dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the publicly-owned treatment works (POTW) (40 C.F.R. 403.12(m)).

2. Introduction

This section shall include:

- 2.1. Any pertinent background information related to the Discharger and/or the nondomestic user base of the area;
- 2.2. List of applicable interagency agreements used to implement the Discharger's pretreatment program (e.g., Memoranda of Understanding (MOU) with satellite sanitary sewer collection systems); and
- 2.3. A status summary of the tasks required by a Pretreatment Compliance Inspection (PCI), Pretreatment Compliance Audit (PCA), Cleanup and Abatement Order (CAO), or other pretreatment-related enforcement actions required by the Regional Water Board or the U.S. EPA. A more detailed discussion can be referenced and included in the section entitled, "Program Changes," if needed.

3. Definitions

This section shall include a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program, or the Discharger may provide a reference to its website if the applicable definitions are available on-line.

4. Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the Discharger's treatment plant(s) that the Discharger knows of or suspects were caused by nondomestic user discharges. Each incident shall be described, at a minimum, consisting of the following information:

- 4.1. A description of what occurred;
- 4.2. A description of what was done to identify the source;
- 4.3. The name and address of the nondomestic user responsible;
- 4.4. The reason(s) why the incident occurred;
- 4.5. A description of the corrective actions taken; and
- 4.6. An examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5. Influent, Effluent and Biosolids Monitoring Results

The Discharger shall evaluate the influent, effluent and biosolids monitoring results as specified in Appendix H-4 in preparation of this report. The Discharger shall retain the analytical laboratory reports with the Quality Assurance and Quality Control (QA/QC) data validation and make these reports available upon request.

This section shall include:

- 5.1. Description of the sampling procedures and an analysis of the results (see Appendix H-4 for specific requirements);
- 5.2. Tabular summary of the compounds detected (compounds measured above the detection limit for the analytical method used) for the monitoring data generated during the reporting year as specified in Appendix H-4;
- 5.3. Discussion of the investigation findings into any contributing sources of the compounds that exceed NPDES limits; and

- 5.4. Graphical representation of the influent and effluent metal monitoring data for the past five years with a discussion of any trends.

6. Inspection, Sampling and Enforcement Programs

This section shall include at a minimum the following information:

- 6.1. Inspections: Summary of the inspection program (e.g., criteria for determining the frequency of inspections and inspection procedures);
- 6.2. Sampling Events: Summary of the sampling program (e.g., criteria for determining the frequency of sampling and chain of custody procedures); and
- 6.3. Enforcement: Summary of Enforcement Response Plan (ERP) implementation including dates for adoption, last revision and submission to the Regional Water Board.

7. Updated List of Regulated SIUs

This section shall contain a list of all of the federal categories that apply to SIUs regulated by the Discharger. The specific categories shall be listed including the applicable 40 C.F.R. subpart and section, and pretreatment standards (both maximum and average limits). Local limits developed by the Discharger shall be presented in a table including the applicability of the local limits to SIUs. If local limits do not apply uniformly to SIUs, specify the applicability in the tables listing the categorical industrial users (CIUs) and non-categorical SIUs. Tables developed in Sections 7A and 7B can be used to present or reference this information.

- 7.1. CIUs - Include a table that alphabetically lists the CIUs regulated by the Discharger as of the end of the reporting period. This list shall include:
 - 7.1.1. Name;
 - 7.1.2. Address;
 - 7.1.3. Applicable federal category(ies);
 - 7.1.4. Reference to the location where the applicable Federal Categorical Standards are presented in the report;
 - 7.1.5. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and
 - 7.1.6. Information, calculations and data used to determine the limits for those CIUs for which a combined waste stream formula is applied.

7.2. Non-categorical SIUs - Include a table that alphabetically lists the SIUs not subject to any federal categorical standards that were regulated by the Discharger as of the end of the reporting period. This list shall include:

- 7.2.1. Name;
- 7.2.2. Address;
- 7.2.3. A brief description of the type of business;
- 7.2.4. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and
- 7.2.5. Indicate the applicable discharge limits (e.g., different from local limits) to which the SIUs are subject and reference to the location where the applicable limits (e.g., local discharge limits) are presented in the report.

8. SIU (categorical and non-categorical) Compliance Activities

The information required in this section may be combined in the table developed in Section 7 above.

8.1. Inspection and Sampling Summary: This section shall contain a summary of all the SIU inspections and sampling activities conducted by the Discharger and sampling activities conducted by the SIU over the reporting year to gather information and data regarding SIU compliance. The summary shall include:

- 8.1.1. The number of inspections and sampling events conducted for each SIU by the Discharger;
- 8.1.2. The number of sampling events conducted by the SIU. Identify SIUs that are operating under an approved Total Toxic Organic Management Plan;
- 8.1.3. The quarters in which the above activities were conducted; and
- 8.1.4. The compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
 - 8.1.4.1. Consistent compliance;
 - 8.1.4.2. Inconsistent compliance;
 - 8.1.4.3. Significant noncompliance;
 - 8.1.4.4. On a compliance schedule to achieve compliance (include the date final compliance is required);
 - 8.1.4.5. Not in compliance and not on a compliance schedule; and

8.1.4.6. Compliance status unknown, and why not.

8.2. Enforcement Summary: This section shall contain a summary of SIU compliance and enforcement activities during the reporting year. The summary may be included in the summary table developed in section 8A and shall include the names and addresses of all SIUs affected by the actions identified below. For each notice specified in enforcement action 8.2.1 through 8.2.4, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

- 8.2.1. Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- 8.2.2. Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- 8.2.3. Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- 8.2.4. Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- 8.2.5. Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty;
- 8.2.6. Order to restrict/suspend discharge to the Discharger; and
- 8.2.7. Order to disconnect the discharge from entering the Discharger.

8.3. July-December Semiannual Data: For SIU violations/noncompliance during the semiannual reporting period from July 1 through December 31, provide the following information:

- 8.3.1. Name and facility address of the SIU;
- 8.3.2. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;
- 8.3.3. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;
- 8.3.4. Indicate the compliance status of the SIU for the two quarters of the reporting period; and
- 8.3.5. For violations/noncompliance identified in the reporting period, provide:

- 8.3.5.1. The date(s) of violation(s);
- 8.3.5.2. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and
- 8.3.5.3. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

9. Baseline Monitoring Report Update

This section shall provide a list of CIUs added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain the information specified in 40 C.F.R. 403.12(b). For each new CIU, the summary shall indicate when the BMR was due; when the CIU was notified by the Discharger of this requirement; when the CIU submitted the report; and/or when the report is due.

10. Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to:

- 10.1. Legal authority;
- 10.2. Local limits;
- 10.3. Monitoring/ inspection program and frequency;
- 10.4. Enforcement protocol;
- 10.5. Program's administrative structure;
- 10.6. Staffing level;
- 10.7. Resource requirements;
- 10.8. Funding mechanism;
- 10.9. If the manager of the Discharger's pretreatment program changed, a revised organizational chart shall be included; and
- 10.10. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

11. Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the total expenses required to implement the pretreatment program. A brief discussion of the source(s) of

funding shall be provided. In addition, the Discharger shall make available upon request specific details on its pretreatment program expense amounts such as for personnel, equipment, and chemical analyses.

12. Public Participation Summary

This section shall include a copy of the public notice as required in 40 C.F.R. 403.8(f)(2)(viii). If a notice was not published, the reason shall be stated.

13. Biosolids Storage and Disposal Practice

This section shall describe how treated biosolids are stored and ultimately disposed. If a biosolids storage area is used, it shall be described in detail including its location, containment features and biosolids handling procedures.

14. Other Pollutant Reduction Activities

This section shall include a brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs. If the Discharger submits any of this program information in an Annual Pollution Prevention Report, reference to this other report shall satisfy this reporting requirement.

15. Other Subjects

Other information related to the Pretreatment Program that does not fit into any of the above categories should be included in this section.

16. Permit Compliance System (PCS) Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information:

- 16.1. Discharger's name,
- 16.2. NPDES Permit number,
- 16.3. Period covered by the report,
- 16.4. Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule,
- 16.5. Number of notices of violation and administrative Orders issued against SIUs,
- 16.6. Number of civil and criminal judicial actions against SIUs,

- 16.7. Number of SIUs that have been published as a result of being in SNC, and
- 16.8. Number of SIUs from which penalties have been collected.

APPENDIX H-2: REQUIREMENTS FOR JANUARY-JUNE PRETREATMENT SEMIANNUAL REPORT

The pretreatment semiannual report is due on July 31 for pretreatment program activities conducted from January through June unless an exception has been granted by the Regional Water Board's Executive Officer (e.g., pretreatment programs without any SIUs may qualify for an exception to the pretreatment semiannual report). Pretreatment activities conducted from July through December of each year shall be included in the Pretreatment Annual Report as specified in Appendix H-1. The pretreatment semiannual report shall contain, at a minimum the following information:

1. Influent, Effluent and Biosolids Monitoring

The influent, effluent and biosolids monitoring results shall be evaluated in preparation of this report. The Discharger shall retain analytical laboratory reports with the QA/QC data validation and make these reports available upon request. The Discharger shall also make available upon request a description of its influent, effluent and biosolids sampling procedures. Violations of any parameter that exceed NPDES limits shall be identified and reported. The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed.

2. Significant Industrial User (SIU) Compliance Status

This section shall contain a list of all SIUs that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. For the reported SIUs, the compliance status for the previous semiannual reporting period shall be included. Once the SIU has determined to be out of compliance, the SIU shall be included in subsequent reports until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- 2.1.** Name and facility address of the SIU;
- 2.2.** Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;
- 2.3.** For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;
- 2.4.** Indicate the compliance status of the SIU for the two quarters of the reporting period; and
- 2.5.** For violations/noncompliance identified in the reporting period, provide:
 - 2.5.1.** The date(s) of violation(s);

- 2.5.2. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and
- 2.5.3. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3. Discharger's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report or Pretreatment Compliance Inspection (PCI) Report. It shall contain a summary of the following information:

- 3.1. Date of latest PCA or PCI report;
- 3.2. Date of the Discharger's response;
- 3.3. List of unresolved issues; and
- 3.4. Plan(s) and schedule for resolving the remaining issues.

**APPENDIX H-3:
SIGNATURE REQUIREMENTS
FOR PRETREATMENT ANNUAL AND SEMIANNUAL REPORTS**

The pretreatment annual and semiannual reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Discharger (POTW - 40 C.F.R. section 403.12[m]). Signed copies of the reports shall be submitted to the State Water Board and the Regional Water Board through the electronic self-monitoring report (eSMR) module of the California Integrated Water Quality System (CIWQS). Signed copies of the reports shall also be submitted electronically to U.S. EPA at R9Pretreatment@epa.gov or as instructed otherwise.

APPENDIX H-4: REQUIREMENTS FOR INFLUENT, EFFLUENT AND BIOSOLIDS MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and biosolids at the frequency shown in the pretreatment requirements table of the Monitoring and Reporting Program (MRP, Attachment E). When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both the influent and effluent monitoring requirements of the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports as required in Appendices H-1 and H-2 shall be transmitted to the Pretreatment Program Coordinator.

1. Reduction of Monitoring Frequency

The minimum frequency of Pretreatment Program influent, effluent, and biosolids monitoring shall be dependent on the number of SIUs identified in the Discharger's Pretreatment Program as indicated in Table H-1.

Table H-1. Minimum Frequency of Pretreatment Program Monitoring

Number of SIUs	Minimum Frequency
< 5	Once every five years
> 5 and < 50	Once every year
> 50	Twice per year

If the Discharger's required monitoring frequency is greater than the minimum specified in Table H-1, the Discharger may request a reduced monitoring frequency for that constituent(s) as part of its application for permit reissuance if it meets the following criteria:

The monitoring data for the constituent(s) consistently show non-detect (ND) levels for the effluent monitoring and very low (i.e., near ND) levels for influent and biosolids monitoring for a minimum of eight previous years' worth of data.

The Discharger's request shall include tabular summaries of the data and a description of the trends in the industrial, commercial, and residential customers in the Discharger's service area that demonstrate control over the sources of the constituent(s). The Regional Water Board may grant a reduced monitoring frequency in the reissued permit after considering the information provided by the Discharger and any other relevant information.

2. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required sampling and test methods listed in the pretreatment table of the MRP. Any test method substitutions must have received prior written Executive Officer approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent samples should be taken at staggered times to account for treatment plant detention time. Appropriately staggered sampling is considered consistent with the requirement for collection of effluent samples coincident with influent samples in Section 3.1.3.1.2 of Attachment G. All samples must be representative of daily operations. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated ML, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following report elements should be used to submit the influent and effluent monitoring results. A similarly structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- 2.1. Sampling Procedures, Sample Dechlorination, Sample Compositing, and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. The Discharger shall make available upon request its sampling procedures including methods of dechlorination, compositing, and data validation.
- 2.2. A tabulation of the test results for the detected parameters shall be provided.
- 2.3. Discussion of Results – The report shall include a complete discussion of the test results for the detected parameters. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

3. Biosolids Monitoring

Biosolids should be sampled in a manner that will be representative of the biosolids generated from the influent and effluent monitoring events except as noted in 3.3 below. The same parameters required for influent and effluent analysis shall be included in the biosolids analysis. The biosolids analyzed shall be a composite sample of the biosolids for final disposal consisting of:

- 3.1. Biosolids lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

- 3.2. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- 3.3. Dewatered biosolids - daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from (a) the dewatering units or (b) each truckload, and combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to biosolids is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to biosolids, is recommended as a guidance for analytical methods.

In determining if the biosolids are a hazardous waste, the Discharger shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, sections 66261.10 to 66261.24 and all amendments thereto.

The following report elements should be used to submit the biosolids monitoring results. A similarly structured form may be used but will be subject to Regional Water Board approval. The results shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- Sampling Procedures and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 C.F.R. 136 and amendments thereto. The Discharger shall make available upon request its biosolids sampling procedures and data validation methods.
- Test Results – Tabulate the test results for the detected parameters and include the percent solids.
- Discussion of Results – Include a complete discussion of test results for the detected parameters. If the detected pollutant(s) is reasonably deemed to have an adverse effect on biosolids disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide a summary table presenting any influent, effluent or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through or adversely impacting biosolids quality.