**Technical Memorandum**

**A Review of Receiving Water Limitations in Six National Pollutant Discharge Elimination System (NPDES) Tentative Permits**

Central Valley Regional Water Quality Control Board (Central Valley Water Board)

6 May 2025

## A. Introduction

On 4 March 2025, the U.S. Supreme Court issued a decision holding that the Clean Water Act does not authorize the inclusion of "end result" provisions (such as receiving water limitations) in NPDES Permits (*City and County of San Francisco vs. U.S. Environmental Protection Agency (2025) 145 U.S. 704*). This ruling impacts a number of pending NPDES permitting actions within the Central Valley Region. This technical memorandum is intended to describe the information and process used by the Central Valley Water Board to determine whether additional water quality protections are needed with the removal of receiving water limitations from the following six tentative NPDES permits scheduled for the 19/20 June 2025 Board Meeting:

1. Cold Water Concentrated Aquatic Animal Production Facility Discharges to Surface Waters (CAAP) General Order Renewal, NPDES No. CAG135001 (https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/caap_go/caap_go_to.pdf)
2. City of Davis Wastewater Treatment Plant (WWTP) Permit Renewal, Yolo County, NPDES No. CA0079049 (https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/davis_wwtp/davis_wwtp_npdes.pdf)
3. City of Stockton Wastewater Recovery Center (WWRC) Permit Renewal, San Joaquin County, NPDES No. CA0079138 (https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/cityofstockton/stockton_wwrc_npdes_tent.pdf)
4. City of Vacaville Easterly WWTP Permit Renewal, Solano County, NPDES No. CA0077691 (https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/cityofvacaville/vacaville_ewwtp_tent_npdes.pdf)
5. Shasta-Sustainable Resource Management, Inc. Permit Renewal, Shasta County, NPDES No. CA0081957 (https://waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/ssrm/ssrm_npdes.pdf)
6. United States Department of the Interior (USDI) National Park Service, Yosemite National Park, El Portal Wastewater Treatment Facility (WWTF)

Permit Renewal, Mariposa County, NPDES No. CA0081759 (https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/elportal/nps_elportalwwtf_npdes.pdf)

The Clean Water Act and implementing regulations specify that effluent limitations are required when there is reasonable potential for a discharge to cause or contribute to an exceedance of any applicable water quality standard. A Reasonable Potential Analysis (RPA) is a key step taken by permit writers to determine if a discharge has the potential to violate water quality standards. An RPA includes characterization of the effluent and receiving waters and an assessment of the water quality standards to see if projected concentrations in the receiving water after mixing with the effluent have the "reasonable potential" (RP) to exceed the water quality criteria. Effluent limitations and other permit conditions are prescribed based on an evaluation of this information. RPAs and effluent limitation calculations follow established NPDES program procedures and requirements (State Water Resources Control Board, 2005 and U.S. Environmental Protection Agency, 1991).

The six tentative NPDES permits at issue here also require regular effluent and receiving water sampling to document any potential effects to the receiving water. In addition, these permits require characterization monitoring of priority pollutants in the upstream receiving water and effluent during the permit term. All Central Valley NPDES permits contain a general re-opener provision that allow the Central Valley Water Board to amend the permit and include conditions, effluent limitations, provisions, or prohibitions. This would include scenarios where monitoring data indicate the need for new effluent limitations to ensure receiving water quality objectives are met. As an additional assurance, all six tentative NPDES permits at issue here prohibit operational changes that would significantly impact the character of the waste discharge.

Nonetheless, the question remains as to whether an NPDES permit is adequately protective of water quality when the receiving water limitations are removed; or alternatively, whether additional conditions should be considered when removing receiving water limitations. Sections B and C below summarize the information reviewed by Central Valley Water Board staff to answer this question for the six tentative NPDES permits listed above. Section D discusses the overall findings and proposed permit updates. Attachment A provides a more detailed analysis of each tentative permit.

## B. Review of Existing Receiving Water Limitations (Surface Water)

Below is a summary of the standard receiving water limitations found in most Central Valley NPDES permits and specific considerations for their removal from the six tentative NPDES permits listed above. These considerations include associated effluent limitations, best management practices (BMPs) and/or water quality

monitoring requirements.

1. ***Biostimulatory Substances and Dissolved Oxygen requirements.*** The Basin Plans (Central Valley Water Board, 2019 and Central Valley Water Board, 2018) contain a biostimulatory narrative water quality objective (WQO) and dissolved oxygen numeric water quality objectives that have been incorporated into NPDES permits as receiving water limitations. Biostimulatory substances and low dissolved oxygen can cause eutrophication and excessive algal growth in the receiving water along with other water quality issues related to taste, odor, color and toxicity. Discharges with high Biological Oxygen Demand (BOD) and/or Chemical Oxygen Demand (COD) may contribute to dissolved oxygen problems downstream.

   None of the six tentative NPDES permits at issue here have RP for dissolved oxygen. However, the City of Stockton WWRC has an effluent limitation based on a site-specific water quality objective for dissolved oxygen in the San Joaquin River from Turner Cut to Stockton.All six permits require frequent monitoring of dissolved oxygen in the receiving water as well as visual monitoring of the receiving water for fungi, slimes or objectionable growths. Four of the six permits are for publicly owned treatment works (POTWs) and these permits also include effluent limitations for BOD and percent removal of $BOD_5$ and TSS along with regular monitoring of Dissolved Organic Carbon (DOC) in the receiving water.

2. ***Chemicals, Pesticides and Radioactivity requirements.*** The Basin Plans have narrative and numeric water quality objectives for chemicals, pesticides, and radionuclides that are used as receiving water limitations in NPDES permits. As with other water quality constituents, NPDES regulations require effluent limitations where existing data indicate reasonable potential to cause or contribute to an exceedance in the receiving water. Attachment A Tables A-1 through A-6 provide details regarding the specific chemical constituents with RP and associated effluent limitations for these six tentative NPDES permits. Facilities using chlorine disinfection also have total residual chlorine effluent limitations. These effluent limitations ensure the protection of beneficial uses in the receiving water.

   Three of the six tentative permits at issue here do not have effluent limitations for pesticides based on RPAs of existing data. The CAAP General Order has effluent limitations for formaldehyde and copper based on their use in pesticide products to control parasites and bacterial infections in fish. The permits for the cities of Davis and Stockton have effluent limitations in place for diazinon and chlorpyrifos consistent with the San Joaquin River and Sacramento River Basin Plan's Total Maximum Daily Load (TMDL) for diazinon and chlorpyrifos.

3. ***Color, Taste and Odors requirements***. The Basin Plans have a narrative water quality objective for color as well as one for taste and odors. These have been incorporated into permits as receiving water limitations. Color, taste and odors are rarely concerns for surface water NPDES discharges in the Central Valley and no effluent limitations are included in these six tentative permits. However, frequent visual monitoring of the receiving water for discoloration and other potential nuisance conditions is required in all six tentative permits.

4. ***pH requirements.*** The Basin Plans have narrative water quality objectives for pH that have been used as receiving water limitations. A pH that is too high or too low can influence the solubility of metals and nutrients in the receiving water and impact the overall health of aquatic life. None of the six tentative NPDES permits have RP for pH based on existing data. However, the four POTWs and Shasta-Sustainable Resource Management Inc. tentative permits have pH effluent limitations and all six tentative permits require frequent monitoring of pH in the receiving waters.

5. ***Temperature requirements***. Most receiving water objectives for temperature are based on the existing temperature in the receiving water. This includes Basin Plan and Thermal Plan requirements. For this reason, many NPDES permits include receiving water limitations for temperature that limit the increase of temperature exhibited in the mixed downstream receiving water. As described above, if the RPA process determines there is RP, an effluent limitation will already have been included in the permit based on conditions exhibited by the effluent and receiving waters. Even when there is no temperature effluent limitation, NPDES permits usually require frequent temperature monitoring in the receiving waters to ensure the protection of beneficial uses. For five out of the six tentative permits at issue here (based on many years of data collection), there is no RP for the discharge to cause or contribute to an exceedance of temperature objectives.

   There are a select number of facilities in the Central Valley that may need revised effluent limitations with the removal of the temperature receiving water limitation. These facilities are generally subject to the Thermal Plan (State Water Resources Control Board, 1975) or are in waterways with sensitive fish populations and limited fish passage. The permit for the City of Stockton WWRC includes temperature effluent limitations. The City of Vacaville Easterly WWTP has site-specific receiving water temperature considerations and additional permit requirements that are required to ensure beneficial use protection. Proposed permit updates are discussed in Section D.

6. ***Toxicity requirements***. The Basin Plans contain a narrative water quality objective for toxicity that has been incorporated into NPDES permits as a receiving water limitation. However, with the adoption of the Statewide Toxicity Provisions

(State Water Resources Control Board, 2021) in 2023, numeric aquatic toxicity water quality objectives were established along with required effluent limitations and/or targets for non-stormwater NPDES permits to ensure the protection of aquatic life beneficial uses in receiving waters.

Five out of the six tentative permits at issue here have either toxicity effluent limitations or effluent targets and require frequent monitoring of chronic whole effluent toxicity. The four POTW tentative permits also have an effluent limitation for Ammonia Nitrogen, Total (as N). Elevated levels of ammonia are known to be toxic to aquatic organisms, so effluent limitations ensure that the aquatic life beneficial use is protected in the receiving water body.

The CAAP General Order is the one permit that does not have toxicity limitations or targets because CAAP discharges meet the Statewide Toxicity Provisions' exemption for insignificant discharges. The CAAP General Order presents findings in Attachment D (Fact Sheet) Section V.C.5 that CAAP discharges have no reasonable potential to cause or contribute to an exceedance of the numeric aquatic toxicity water quality objectives.

7. ***Turbidity requirements***. Similar to temperature, Basin Plans include numeric turbidity water quality objectives that are based on existing turbidity in the receiving waters. These have been incorporated into permits as receiving water limitations. None of the six tentative permits have RP or effluent limitations for turbidity, however all six of the permits require frequent monitoring of turbidity in the receiving waters. Four of the six tentative permits are for POTWs that treat their water to tertiary standards. These four permits include filtration system operating specifications with strict turbidity requirements to ensure disinfection systems are effective. These limitations are low enough to ensure protection of beneficial uses in the receiving water.

8. ***Floating Material, Oil and Grease, Suspended Sediments, Suspended Material and Settleable Substances requirements.*** The six tentative NPDES permits at issue here contain receiving water limitations relative to narrative water quality objectives in the Basin Plans for Floating Material, Oil and Grease, Suspended Sediments, Suspended Material and Settleable Substances. These constituents can affect water quality by reducing water clarity and light penetration which can ultimately lead to increased water temperatures, decreased dissolved oxygen levels and eutrophication. Contamination from these substances can impact both aquatic and human health.

   All six tentative permits require frequent visual monitoring in the receiving waters for floating material, visible films, sheens or coating, suspended matter, and bottom deposits. The four POTW permits include numeric effluent limitations for

Total Suspended Solids. The CAAP General Order includes narrative effluent limitations for these constituents that are based on the implementation of BMPs to minimize discharge of Total Suspended Solids. The permit for Shasta-Sustainable Resource Management Inc. contains an effluent limitation for settleable solids.

9. ***Other requirements.*** Two of the six tentative NPDES permits at issue here (CAAP General Order and Shasta-Sustainable Resource Management Inc.) have receiving water limitations based on the Statewide Bacteria Provisions (State Water Resources Control Board, 2019) but do not have effluent limitations or require receiving water monitoring. The other four tentative permits are POTWs that treat their water to tertiary standards and have strict total coliform limitations that meet Title 22 disinfection or equivalent standards.

   The CAAP General Order also includes receiving water limitations specific to the numeric water quality objectives in the Basin Plans for electrical conductivity (EC), total dissolved solids (TDS) and un-ionized ammonia (for water bodies in the Tulare Lake Basin). For salinity constituents, the CAAP General Order includes provisions consistent with the Central Valley's Salt Control Program, adopted in 2018. Currently, all enrollees in the CAAP General Order have chosen the Conservative Pathway of the Salt Control Program which requires conservative EC effluent limitations. There are currently no effluent limitations or monitoring for un-ionized ammonia for facilities in the Tulare Lake Basin.

## C. Review of Other Relevant Factors

In addition to the considerations listed in Section B above, Central Valley Water Board staff also considered the other relevant factors below in the review of the six tentative NPDES permits at issue here. Attachment A Tables A-1 through A-6 provide more detail for each permit.

1. ***Synergistic effects*.** Is there a known concern that the discharge will combine with the receiving water and produce adverse synergistic effects? For example, surface water discharges may be fully compliant with dissolved oxygen and narrative objectives, but may combine with poor conditions in the receiving water to cause harmful algal blooms (HABs), eutrophication, dissolved oxygen sag, toxic effects, taste and odor, and other harmful conditions. Is there the concern that the discharge when combined with the receiving water would have color concerns (e.g., mine discharge, floc due to pH change, etc.)?

   The Sacramento – San Joaquin Delta (Delta) exhibits synergistic and unknown toxicity conditions. The City of Stockton's Wastewater Recovery Center is the only Delta facility discharger out of the six tentative permits at issue here. The City of Stockton participates in the Delta Regional Monitoring Program which is conducting studies to better understand nutrient, pesticide, and constituents of

emerging concern (CEC) impacts on Delta waterways. Additional permit conditions for Delta facilities may be needed in the future based on the results of these studies.

2. ***Limitations enforced within the receiving water.*** Are there specific chemicals or pesticides that have Basin Plan objectives that are not enforced through effluent limitations? For example, certain organochlorine pesticides effluent limitations are based on numeric water quality objectives consistent with applicable regulations. However, more stringent Basin Plan objectives require the receiving water to be "non-detect" for these materials. In these circumstances, removing the receiving water limitation would result in reduced protections that are required under federal and state regulations.

   None of the data for the six tentative NPDES permits demonstrate exceedances of the Basin Plan's receiving water quality objectives for this category of chemicals and/or pesticides.

3. ***Other Site-specific Information.*** Are there any special studies that have been conducted in the receiving water body/watershed or impairments that relate to existing receiving water limitations?

   All Central Valley Water Board NPDES permits consider the Clean Water Act 303(d) List of Impaired Water Bodies when they are developed. Dischargers enrolling in the CAAP General Order must provide a wastewater analysis of the 303(d) listed constituents of concern as part of their application if their facility discharges into impaired surface waters. NPDES permits also incorporate Basin Plan Control Program and Total Maximum Daily Load (TMDL) requirements as appropriate. Monitoring and effluent limitations are established in accordance with these requirements.

   The Central Valley Water Board's Pyrethroid Control Program, adopted in 2017, requires larger POTWs (> 1 million gallons a day of discharge) to monitor for pyrethroids to determine if they have RP. One of the POTWs (City of Davis) completed that monitoring and the results did not show RP for pyrethroid pesticides. The other three POTWs will be conducting pyrethroid monitoring during the current permit term and additional requirements are stipulated in the permit if they are found to have RP.

   Salinity constituents are also a concern in Central Valley water bodies. All six tentative permits include the special study requirement of a Salinity Evaluation and Minimization Plan (SEMP) to identify salinity sources and reduce salinity in discharges, consistent with the requirements of the Salt Control Program.

   The City of Vacaville's NPDES permit contains receiving water limitations for temperature that are based on site-specific conditions for the protection of

salmon that were established based on a 2006 study on fall-run Chinook salmon that occasionally stray into New Alamo Creek.

4. ***Data Characterization.*** Have the effluent and receiving water been fully characterized?

   All six tentative permits require characterization monitoring in the effluent and receiving water every permit term. A full scan of priority pollutant and other constituents of concern is required for five out of the six permits. The exception is the CAAP General Order which requires a scan of only priority pollutant metals.

   Effluent and/or receiving water data is not available for bacteria for the CAAP facilities or the Shasta-Sustainable Resource Management, Inc. facility. No effluent and/or receiving water data is available for un-ionized ammonia for CAAP facilities in the Tulare Basin.

5. ***Compliance history****.* Has the facility had any compliance issues meeting receiving water limitations during the most recent permit term (e.g., received a Notice of Violation for exceeding a receiving water limitation)? Overall, does the facility have any ongoing compliance issues (e.g., frequent operational upsets).

   None of the six facilities regulated by their respective tentative NPDES permits have ongoing compliance issues. The City of Vacaville Easterly WWTP received two Notice of Violations between 2020-2024 for exceeding the receiving water temperature limitation, once by 1°F in January 2021 and once by 3°F in December 2024.

## D. Summary and Proposed Permit Updates

Based on Central Valley Water Board staff review of the considerations presented in Sections A through C and detailed in Attachment A, existing permit provisions are adequate to ensure the discharge quality of these six tentative NPDES permits consistently meet federal and state regulations for the protection of beneficial uses in the receiving water. The effluent limitations and receiving water monitoring in these six permits along with existing permit prohibitions and reopener provisions provide a multi-pronged approach to ensuring water quality standards are met. As such, receiving water limitations for all six tentative NPDES permits can be removed without the inclusion of additional conditions, with the exception of the three proposed permit updates below.

1. The City of Vacaville's NPDES permit contains receiving water limitations for temperature that are based on site-specific conditions for the protection of salmon. While the City has received two violations for exceeding the receiving water limitations for temperature during the most recent permit term, there is

not sufficient monitoring and environmental data to conclude RP. In addition, the receiving water limitations are based on a study that was conducted almost 20 years ago and conditions in the receiving water may have since changed. However, removing the site-specific receiving water limitations could allow the discharge to cause or contribute to temperature exceedances. For this reason, the permit should include a special study that would gather the information necessary to conduct an RPA and establish appropriate effluent limitations should RP be determined.

2. The CAAP General Order and the permit for Shasta-Sustainable Resource Management Inc. do not have adequate monitoring data on bacteria to conduct an RPA in consideration of the protection of beneficial uses in the receiving water. Consistent with the Statewide Bacteria Provisions, the permittees should collect *Escherichia coli* (E. coli) in the effluent and upstream receiving water bodies as part of their characterization monitoring.

3. The CAAP General Order does not have adequate monitoring data on un-ionized ammonia for the facilities in the Tulare Lake Basin to conduct an RPA in consideration of the protection of beneficial uses in the receiving water. While there are currently no CAAP facilities located in the Tulare Lake Basin, the permit should include an additional requirement that any future Tulare Lake Basin facilities collect un-ionized ammonia samples in the effluent and receiving water bodies as part of their characterization monitoring.

## E. References


1. *City and County of San Francisco v. U.S. Environmental Protection Agency 145 U.S. 704* . March 2025. (https://www.supremecourt.gov/opinions/24pdf/23-753_f2bh.pdf)

2. *Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region.* 5th Edition. *The Sacramento River Basin, The San Joaquin River Basin.* 2019.

3. *Water Quality Control Plan for the Tulare Lake Basin.* California Regional Water Quality Control Board, Central Valley Region. 3rd Edition. 2018.

4. *Part 3 of the Water Quality Control Plan for Inland Surface Water, Enclosed Bays, and Estuaries of California, Bacteria Provisions and Water Quality Standards Variance Policy*. 2019. State Water Resources Control Board.

5. *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. 2005. State Water Resources

Control Board. California Environmental Protection Agency.

6. *State Policy for Water Quality Control: Toxicity Provisions.* 2021. State Water Resources Control Board

7. *Technical Support Document for Water Quality-based Toxics Control.* 1991. United States Environmental Protection Agency.

8. *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California.* 1975. State Water Resources Control Board.

## Attachment A

***Table A-1. Receiving Water (RW) Limitations Review for CAAP General Order***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Un-ionized Ammonia (for water bodies in the Tulare Lake Basin) (Numeric WQO) | | |
| Bacteria (Numeric WQO) | | |
| Biostimulatory Substances (Narrative WQO) | Visual monitoring of fungi, slimes or objectionable growths is required in RW. | |
| Chemical Constituents (Narrative WQO) | Formaldehyde effluent limitation | Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | Chlorine effluent limitation | |
| | Copper effluent limitation for specific water bodies | Priority pollutant metals characterization monitoring (effluent and upstream RW) required between 2027-2029. |
| | EC for permittees in the Conservative Permitting Approach | |
| Color (Narrative WQO) | Visual monitoring for discoloration is required in RW (monthly or quarterly depending on size of facility) | |
| Dissolved Oxygen (Numeric WQO) | Monitoring in the RW (monthly or quarterly depending on size of facility) | |
| Electrical Conductivity (EC) (Numeric WQOs) | EC Limitations and targets are established consistent with the Salt Control Program. EC monitoring is required in RW (monthly or quarterly depending on size of facility) | |
| Floating Material (Narrative WQO) | Visual monitoring of floating matter is required in RW (monthly or quarterly depending on size of facility) | |
| Oil and Grease (Narrative WQO) | Visual monitoring of visible films, sheens or coating is required in the RW (monthly or quarterly depending on size of facility) | |
| pH (Numeric WQO) | Receiving water sampling monthly or quarterly (depending on size of facility) | |
| Pesticides (Narrative/Numeric WQO) | Drugs and pesticides must be used in accordance with applicable label directions or as otherwise approved in NOA | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Radioactivity (Narrative/Numeric WQO) | Due to nature of discharge, radionuclides are not an expected constituent of concern. | |
| Suspended Sediments (Narrative WQO) | Narrative effluent limitation to implement BMPs to minimize discharge of TSS. Visual monitoring of suspended matter is required in the RW (monthly or quarterly depending on size of facility) | |
| Settleable Substances (Narrative WQO) | Narrative effluent limitation to implement BMPs to minimize discharge of TSS. Visual monitoring of bottom deposits is required in the RW (monthly or quarterly depending on size of facility) | |
| Suspended Material (Narrative WQO) | Narrative effluent limitation to implement BMPs to minimize discharge of TSS. Visual monitoring of suspended matter is required in the RW (monthly or quarterly depending on size of facility) | |
| Taste and Odors (Narrative WQO) | Monitoring of potential nuisance conditions is required in the RW (monthly or quarterly depending on size of facility) | |
| Temperature (Numeric WQO) | Receiving water sampling (monthly or quarterly depending on size of facility) | |
| Total Dissolved Solids (Numeric WQO) | EC Limitations and targets (in lieu of TDS) are established consistent with the Salt Control Program. EC monitoring is required in RW (monthly or quarterly depending on size of facility) | |
| Toxicity (Narrative WQO) | No RP - Attachment D (Fact Sheet) Section V.C.5 of the tentative permit provides justification for the application of the Statewide Toxicity Provisions' exception for insignificant discharges. | |
| Turbidity (Numeric WQO) | Receiving water sampling monthly or quarterly (monthly or quarterly depending on size of facility) | |

***Table A-2. Receiving Water (RW) Limitations Review for the City of Davis WWTP Tentative Order***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Biostimulatory Substances (Narrative WQO) | No RP based on effluent data, but Biochemical Oxygen Demand and BOD5/TSS percent removal effluent limitations are included. Dissolved Organic Carbon monitoring (quarterly) is required in the RW. Visual monitoring (weekly) of fungi, slimes or objectionable growths is required in RW. | |
| Chemical Constituents (Narrative WQO) | No RP based on effluent data, but Total Residual Chlorine effluent limitation is included. | Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | Copper, Total effluent limitation | Quarterly priority pollutant characterization monitoring (effluent and upstream RW) June 2026-May 2027. |
| | Cyanide, Total effluent limitation | |
| | Mercury, Total effluent limitation | Permit conditions are consistent with the Delta Mercury Control Program. |
| Color (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (weekly) for discoloration is required in RW. | |
| Dissolved Oxygen (Numeric WQO) | No RP, tertiary treatment results in minimal DO impacts. Receiving Water Monitoring (weekly) is required. | |
| Floating Material (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (weekly) of floating matter is required in RW. | |
| Oil and Grease (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (weekly) of visible films, sheens or coating is required in the RW. | |
| pH (Numeric WQO) | No RP based on effluent data, but pH effluent limitations are included. Receiving Water Monitoring (weekly) is required. | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Pesticides (Narrative/Numeric WQO) | Diazinon and Chlorpyrifos effluent limitations | Permit conditions are consistent with the TMDL for diazinon and chlorpyrifos. |
| Radioactivity (Narrative/Numeric WQO) | No RP. With tertiary treatment standards, no adverse impacts to beneficial uses are expected in the RW. | |
| Suspended Sediments (Narrative WQO) | No RP, but Total Suspended Solids effluent limitation is included. Visual monitoring (weekly) of suspended matter is required in the RW. | |
| Settleable Substances (Narrative WQO) | No RP, but Total Suspended Solids effluent limitation is included. Visual monitoring (weekly) for bottom deposits is required in the RW. | |
| Suspended Material (Narrative WQO) | No RP, but Total Suspended Solids effluent limitation is included. Visual monitoring (weekly) of suspended matter is required in the RW. | |
| Taste and Odors (Narrative WQO) | No RP due to tertiary treatment standards. Monitoring (weekly) of potential nuisance conditions required in the RW. | |
| Temperature (Numeric WQO) | No RP. Receiving Water Monitoring (weekly) is required | |
| Toxicity (Narrative WQO) | Chronic WET effluent limitations | |
| | Ammonia Nitrogen, Total (as N) effluent limitation | |
| Turbidity (Numeric WQO) | No RP. Contains Filtration System Operating Specifications. Receiving Water monitoring (monthly) is required. | |

***Table A-3. Receiving Water (RW) Limitations Review for the City of Stockton WWRC Tentative Order***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Biostimulatory Substances (Narrative WQO) | No RP based on effluent data, but Biochemical Oxygen Demand and BOD5/TSS percent removal effluent limitations are included. Dissolved Organic Carbon monitoring (quarterly) is required in RW. Visual monitoring (monthly) of fungi, slimes or objectionable growths is required in RW. | This facility is located in the Sacramento – San Joaquin Delta (Delta). The Delta is known to exhibit synergistic and unknown toxicity conditions. The City of Stockton participates in the Delta Regional Monitoring Program which is conducting studies to better understand nutrient, pesticide, and constituents of emerging concern (CEC) impacts on Delta waterways. |
| Chemical Constituents (Narrative WQO) | Bromoform effluent limitation | Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | Dibromochloromethane effluent limitation | |
| | Dichlorobromomethane effluent limitation | |
| | Mercury, Total effluent limitation | Permit conditions are consistent with the Delta Mercury Control Program |
| | Nitrate Plus Nitrite, Total (as N) effluent limitation | Quarterly (effluent) and annual (upstream RW) priority pollutant characterization monitoring from June 2027 to May 2028. |
| | No RP based on effluent data, but Total Residual Chlorine effluent limitations are included. | |
| Color (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) for discoloration is required in RW. | |
| Dissolved Oxygen (Numeric WQO) | No RP based on effluent data from June 2021 through May 2024, but Dissolved Oxygen effluent limitations are included. Tertiary treatment results in minimal DO impacts. Receiving | Permit conditions are consistent with the Control Program for Factors Contributing to the Dissolved Oxygen |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| | Water Monitoring (monthly) is required. | Impairment in the Stockton Deep Water Ship Channel Portion of the San Joaquin River |
| Floating Material (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of floating matter is required in RW. | |
| Oil and Grease (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of visible films, sheens or coating is required in the RW. | |
| pH (Numeric WQO) | No RP, but pH effluent limitations are included. Receiving Water Monitoring (monthly) is required. | |
| Pesticides (Narrative/Numeric WQO) | Diazinon and Chlorpyrifos effluent limitations | Permit conditions are consistent with the TMDL for diazinon and chlorpyrifos. |
| | | Pyrethroid monitoring is required in the downstream RW for one year starting in 2027. |
| Radioactivity (Narrative/Numeric WQO) | No RP. With tertiary treatment standards, no adverse impacts to beneficial uses are expected in the RW. | |
| Suspended Sediments (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Settleable Substances (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent is limitation is included. Visual monitoring (monthly) for bottom deposits is required in the RW. | |
| Suspended Material (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Taste and Odors (Narrative WQO) | No RP due to tertiary treatment standards. Monitoring (monthly) of | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| | potential nuisance conditions required in the RW. | |
| Temperature (Numeric WQO) | No RP based on effluent data, but Temperature effluent limitations are included. Receiving Water Monitoring (monthly) is required | |
| Toxicity (Narrative WQO) | Chronic WET effluent limitations | |
| | Ammonia Nitrogen, Total (as N) - seasonal effluent limits | |
| Turbidity (Numeric WQO) | No RP. Contains Filtration System Operating Specifications. Receiving Water monitoring (monthly) is required. | |

***Table A-4. Receiving Water (RW) Limitations Review for the City of Vacaville Easterly WWTP Tentative Order***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Biostimulatory Substances (Narrative WQO) | No RP based on effluent data, but Biochemical Oxygen Demand (seasonal) and BOD5/TSS percent removal effluent limitations are included. DOC monitoring (quarterly) in RW. Visual monitoring (monthly) of fungi, slimes or objectionable growths is required in RW. | The City of Vacaville participates in the Delta Regional Monitoring Program which is conducting studies to better understand nutrient, pesticide, and constituents of emerging concern (CEC) impacts on Delta waterways. |
| Chemical Constituents (Narrative WQO) | Chlorodibromomethane limitation | Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | Dichlorobromomethane limitation | Bimonthly (effluent) and annual (upstream RW) priority pollutant characterization monitoring from June 2026 to May 2027. |
| | Cyanide limitation | |
| | Nitrate Plus Nitrite, Total (as N) limitation | |
| | No RP based on effluent data, but Total Chlorine Residual effluent limitation included. | |
| Color (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) for discoloration is required in RW. | |
| Dissolved Oxygen (Numeric WQO) | No RP, tertiary treatment results in minimal DO impacts. Receiving Water Monitoring (monthly) is required. | |
| Floating Material (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of floating matter is required in RW. | |
| Oil and Grease (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of visible films, sheens or coating is required in the RW. | |
| pH (Numeric WQO) | No RP, but pH effluent limitations are included. Receiving Water Monitoring (monthly) is required | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Pesticides (Narrative/Numeric WQO) | No RP for pesticides in the characterization monitoring list. | Pyrethroid monitoring is required in the downstream RW for one year in 2026. |
| Radioactivity (Narrative/Numeric WQO) | No RP. With tertiary treatment standards, no adverse impacts to beneficial uses are expected in the RW. | |
| Suspended Sediments (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids (seasonal) effluent limitations are included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Settleable Substances (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids (seasonal) effluent limitations are included. Visual monitoring (monthly) for bottom deposits is required in the RW. | |
| Suspended Material (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids (seasonal) effluent limitations are included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Taste and Odors (Narrative WQO) | No RP due to tertiary treatment standards. Monitoring (monthly) of potential nuisance conditions required in the RW. | |
| Temperature (site-specific objectives) | No effluent limitation. Receiving Water monitoring (monthly) is required. | Permit will require a special study that would gather the information necessary to conduct an RPA and establish appropriate effluent limitations should RP be determined |
| Toxicity (Narrative WQO) | Ammonia Nitrogen, Total (as N) effluent limitation | |
| | No RP but permit includes Chronic WET Toxicity Effluent Targets and monthly monitoring. | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Turbidity (Numeric WQO) | No effluent limitation due to Filtration System Operating Specifications. Receiving Water monitoring (monthly) is required. | |

***Table A-5. Receiving Water (RW) Limitations Review for the Shasta-Sustainable Resource Management, Inc. Tentative Order***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Bacteria (Numeric WQO) | | |
| Biostimulatory Substances (Narrative WQO) | Visual monitoring (monthly) of fungi, slimes or objectionable growths is required in RW. | |
| Chemical Constituents (Narrative WQO) | Alpha-BHC effluent limitation | Compliance schedule for alpha-BHC and manganese |
| | Arsenic effluent limitation | |
| | No RP based on effluent data, but Total Residual Chlorine effluent limitation is included | Consistent with Conservative Pathway of the Salt Control Program, this permit has a limitation and requires a Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | Electrical Conductivity @ 25°C effluent limitation | |
| | Manganese effluent limitation | Winter and summer priority pollutant characterization monitoring (effluent and upstream RW) in 2027. |
| | Molybdenum effluent limitation | |
| Color (Narrative WQO) | Visual monitoring (monthly) for discoloration is required in RW. | |
| Dissolved Oxygen (Numeric WQO) | No RP. Receiving Water Monitoring (monthly) is required. | |
| Floating Material (Narrative WQO) | Visual monitoring (monthly) of floating matter is required in RW. | Bioswales to filter stormwater will be added during the next permit term and rock check dams will be installed to trap solids and slow water flow. |
| Oil and Grease (Narrative WQO) | No RP. Visual monitoring (monthly) of visible films, sheens or coating is required in the RW. | |
| pH (Numeric WQO) | No RP based on effluent data, but effluent limitations are included. Receiving Water Monitoring is required. | |
| Pesticides (Narrative/Numeric WQO) | No RP - not expected to be a constituent of concern in this type of discharge. | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Radioactivity (Narrative/Numeric WQO) | No RP - not expected to be a constituent of concern in this type of discharge | |
| Suspended Sediments (Narrative WQO) | Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Settleable Substances (Narrative WQO) | No RP based on effluent data, but Settleable Solids effluent limitation is included. Visual monitoring (monthly) for bottom deposits is required in the RW. | |
| Suspended Material (Narrative WQO) | Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Taste and Odors (Narrative WQO) | Monitoring (monthly) of potential nuisance conditions required in the RW. | |
| Temperature | No RP. Receiving Water Monitoring (monthly) is required | |
| Toxicity (Narrative WQO) | No RP but has Chronic WET Toxicity Effluent Targets with Monthly monitoring | |
| Turbidity (Numeric WQO) | No RP. Receiving Water Monitoring (monthly) is required | |

***Table A-6. Receiving Water (RW) Limitations Review for the El Portal WWTP***

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Bacteria (Numeric WQO) | No RP and Receiving Water limitation is not needed due to tertiary treatment standards. Total Coliform effluent limitations are included. | |
| Biostimulatory Substances (Narrative WQO) | No RP based on effluent data, but Biochemical Oxygen Demand and $BOD_5$/TSS percent removal effluent limitations are included. Dissolved Organic Carbon monitoring (quarterly) is required in RW. Visual monitoring (monthly) of fungi, slimes or objectionable growths is required in RW. | |
| Chemical Constituents (Narrative WQO) | Copper effluent limitation | Salinity Evaluation and Minimization Plan to address salinity sources and reduce discharges of salinity. |
| | No RP, but total Phosphorus effluent limitation is included | Quarterly priority pollutant characterization monitoring (effluent and upstream RW) from July 2028 to June 2029. |
| | Zinc effluent limitation | |
| Color (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) for discoloration is required in RW. | |
| Dissolved Oxygen (Numeric WQO) | No RP, tertiary treatment results in minimal DO impacts. Receiving Water Monitoring (monthly) is required. | |
| Floating Material (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of floating matter is required in RW. | |
| Oil and Grease (Narrative WQO) | No RP due to tertiary treatment standards. Visual monitoring (monthly) of visible films, sheens or coating is required in the RW. | |
| pH (Numeric WQO) | No RP based on effluent data, but pH effluent limitations are included. Receiving water monitoring (monthly) is required. | |

| Receiving Water Limitations to be Removed | Effluent Limitations and/or Monitoring | Other Relevant Factors |
|---|---|---|
| Pesticides (Narrative/Numeric WQO) | No RP for pesticides in the characterization monitoring list. | Pyrethroid monitoring is required in the downstream RW for one year starting in 3rd quarter of 2025. |
| Radioactivity (Narrative/Numeric WQO) | No RP. With tertiary treatment standards, no adverse impacts to beneficial uses are expected in the RW. | |
| Suspended Sediments (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Settleable Substances (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) for bottom deposits is required in the RW. | |
| Suspended Material (Narrative WQO) | No RP based on effluent data, but Total Suspended Solids effluent limitation is included. Visual monitoring (monthly) of suspended matter is required in the RW. | |
| Taste and Odors (Narrative WQO) | No RP due to tertiary treatment standards. Monitoring (monthly) of potential nuisance conditions required in the RW. | |
| Temperature (Numeric WQO) | No RP. Receiving Water Monitoring (monthly) is required. | |
| Toxicity (Narrative WQO) | Ammonia Nitrogen, Total (as N) effluent limitations (seasonal). | |
| | No RP but permit includes Chronic effluent WET Toxicity Targets with quarterly & semi-annual monitoring. | |
| Turbidity (Numeric WQO) | No effluent limitation due to Filtration System Operating Specifications. Receiving Water (quarterly) monitoring is required. | |