CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0080
AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2015-0027 (NPDES PERMIT NO. CA0078948)

CITY OF TURLOCK
REGIONAL WATER QUALITY CONTROL FACILTY
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 17 April 2015, the Central Valley Water Board adopted Waste Discharge Requirements Order (WDR) R5-2015-0027, NPDES Permit CA0085146, which prescribes waste discharge requirements for the City of Turlock Regional Water Quality Control Facility, Stanislaus County. For the purposes of this Order, the City of Turlock is hereafter referred to as "Discharger" and the Regional Water Quality Control Facility is hereafter referred to as "Facility."

2. The Discharger owns and operates the Facility. The treatment system consists of screening, grit removal, primary flotation, secondary treatment (activated sludge) for biochemical oxygen demand (BOD) reduction and nitrification, secondary clarification, high rate clarification with chemical addition, tertiary treatment via cloth disk filters, chlorine disinfection, and sodium bisulfite dechlorination. The Facility also includes a 37.2 million-gallon earthen emergency storage basin, which allows for the diversion and storage of primary effluent if necessary. The Facility has a design treatment capacity of 20 million gallons per day (MGD).

3. Order R5-2015-0027 (NPDES Permit) authorizes the surface water discharge of up to 20 MGD of disinfected tertiary treated wastewater to the San Joaquin River, a water of the United States. The Discharger is also authorized by WDR Order R5-2015-0010, NPDES Permit CA0085346, to discharge up to 14.2 MGD of disinfected tertiary treated wastewater to the Delta Mendota Canal.

5. The NPDES Permit contains average monthly and maximum daily effluent limitations and for chlorodibromomethane of 7.6 µg/L and 12 µg/L, respectively, and average monthly and maximum daily effluent limitations dichlorobromomethane of 11 µg/L and 17 µg/L, respectively. Effluent limitations for chlorodibromomethane and dichlorobromomethane in the NPDES Permit were developed using a dilution factor of 19.9:1.

6. Time Schedule Order R5-2014-0901 provides until 31 December 2019 to achieve full compliance with the effluent limitations for chlorodibromomethane and dichlorobromomethane contained in Order R5-2015-0027.

7. By letter dated 15 April 2019, the Discharger requested to adjust the dilution factor used in calculating effluent limitations for chlorodibromomethane and dichlorobromomethane by using the updated harmonic mean flow for the San Joaquin River, updated long-term arithmetic discharge flow to the San Joaquin River to calculate available dilution, and considering volatilization of chlorodibromomethane and dichlorobromomethane that occurs after effluent leaves the Facility.

9. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) ("CEQA") pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to modify a NPDES permit (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).

10. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend WDR Order R5-2015-0027 for this discharge and has provided them with an opportunity to submit written comments.

IT IS HEREBY ORDERED THAT:

Waste Discharge Requirements Order R5-2015-0027 (NPDES Permit CA0078948) is amended to modify effluent limitations for chlorodibromomethane and dichlorobromomethane, and revise the mixing zone discussion for the human health and human carcinogen mixing zones.

Effective immediately upon adoption, Order R5-2015-0027 is amended as shown in underline/strikeout format in items 1 through 17 below.

1. **Title Page**. Update information found in the title page of the NPDES Permit to reflect the new order number (changing from R5-2015-0027 to R5-2015-0027-01) and new Executive Officer (changing from Pamela Creedon to Patrick Pulupa).

2. **Order Number**. Change the Order number throughout to R5-2015-0027-01.

3. **Section IV.A.1.a, Table 4. Effluent Limitations.** Change average monthly effluent limitation and maximum daily effluent limitation for chlorodibromomethane from 7.6 µg/L to 43 µg/L and 12 µg/L to 72 µg/L, respectively. Change average monthly effluent limitation and maximum daily effluent limitation for dichlorobromomethane from 11 µg/L to 46 µg/L and 17 µg/L to 74 µg/L, respectively.

Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	1,668	2,502	3,336	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	1,668	2,502	3,336	--	--
Priority Pollutants						
Bis (2-ethylhexyl) phthalate	µg/L	30	--	86	--	--
Carbon Tetrachloride	µg/L	4.2	--	8.5	--	--
Chlorodibromomethane	µg/L	437.6	--	7212	--	--
Dichlorobromomethane	µg/L	4611	--	7417	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N) (16 April – 31 October)	mg/L	0.94	2.1	--	--	--
	lbs/day[1]	160	350	--	--	--
Ammonia Nitrogen, Total (as N) (1 November – 15 April)	mg/L	2.1	4.7	--	--	--
	lbs/day[1]	350	784	--	--	--
Aluminum (total recoverable)	µg/L	350	820	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	31	38	--	--	--

[1] Based on a design flow of 20 million gallons per day (MGD).

4. **Attachment F, Section I, Permit Information.** Add a statement summarizing the permit amendment.

> ~~D.~~**E.** This Order was amended by Order R5-2019-XXXX on XX December 2019 to adjust the dilution factor used in calculating effluent limitations for chlorodibromomethane and dichlorobromomethane by using the updated harmonic mean flow for the San Joaquin River and long-term arithmetic discharge flow to the San Joaquin River to calculate available dilution, and considering volatilization of chlorodibromomethane and dichlorobromomethane that occurs after effluent leaves the Facility.

5. **Attachment F, Section IV.C.2.c.ii.(a), Human Carcinogen (Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride) and Human Health (Nitrate Nitrogen, Total (as N)).** Update to include new San Joaquin River harmonic mean flow and long-term arithmetic mean flow from the Facility to the San Joaquin River used to calculate chlorodibromomethane and diclorobromomethane mixing zone and dilution.

ii. **Dilution/Mixing Zone Study Results**.

~~ii.~~(a)**Human Carcinogen (Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride) and Human Health (Nitrate Nitrogen, Total (as N)).** The Discharger provided a 16 June 2009 City of Turlock Water Quality Control Facility – San Joaquin River Discharge Mixing Zone Study ~~*and Requested Amendment to Tentative Order, NPDES No. CA0078948*~~ (Larry Walker Associates) providing the results of a dilution/mixing zone study. Using the Cornell Mixing Zone Expert System (CORMIX) model, the point of complete mixing downstream of the Discharger's ~~proposed~~ discharge to the San Joaquin River was estimated. A summary of the primary data inputs to the CORMIX model are provided below:

~~(a)~~(1) A value of 100 feet (30.5 meters) was estimated for river width; the cross-section geometry was estimated using aerial photo width measurements.

~~(b)~~(2) River depths were estimated under a number of selected design/critical flows using Manning's equation.

~~(c)~~(3) The effluent concentration was arbitrarily specified equal to 100 mg/L. In CORMIX, this value (or any other reference value) can be used in the absence of actual effluent concentration data. This means that some of the CORMIX-calculated concentrations along the longitudinal dimension of the plume (i.e., along the stream reach) are lower than the arbitrarily selected effluent concentration and are simply used to calculate the CORMIX dilution ratio.

~~(d)~~(4) The proposed outfall cross-section was estimated to be 2 meters wide by 0.2 meters deep, which corresponds to the maximum permitted flow rate.

Two primary model scenarios were run: 1) one corresponding to a harmonic mean flow of the San Joaquin River (617 cubic feet per second[1]) for use in evaluating potential dilution for human carcinogens consistent with the SIP, and 2) one corresponding to the 30Q10 critical low flow of the San Joaquin River (180 cubic feet per second) for use in evaluating potential dilution for human health criteria for nitrate (Use of the 30Q10 low flow is consistent with the USEPA TSD recommendations for noncarcinogens)[2]. For each scenario, the model estimated the distance downstream to achieve complete mix and the dilution available at the first downstream monitoring location, 400 meters from the discharge point into the San Joaquin River.

According to the report, initial mixing at the point of discharge is momentum and buoyancy based; complete mixing is then achieved more slowly through dispersion as the narrow plume hugs the eastern bank of the San Joaquin River. For human carcinogens the results of the study indicate~~indicates~~ that the edge of the mixing zone where complete mixing occurs in the San Joaquin River is 3,048 meters (just under 2 miles) downstream of the discharge point to the San Joaquin River. The width and depth of the mixing zone is approximately 30.48 meters and 0.93 meters, respectively. For nitrate, the results of the study indicate~~indicates~~ that the edge of the mixing zone where complete mixing occurs is 3,007 meters (almost 1.9 miles) downstream of the discharge point to the San Joaquin River. The width and depth of the mixing zone is approximately 30.48 meters and 0.57 meters, respectively.

For human carcinogen criteria the SIP recommends using the harmonic mean receiving water flow and the long-term arithmetic mean effluent flow[3] to calculate a dilution credit (SIP at Section 1.4.2.1). Based on the harmonic mean flow of 617 cubic feet per second (cfs) or 398 MGD of the San Joaquin River, and the design discharge flow of 20 MGD as a conservative estimate of the long-term arithmetic mean flow, a dilution credit of 19.9 may be allowed for the calculation of WQBEL's for human carcinogen criteria. An updated harmonic mean flow of 439 cfs (284 MGD) for the San Joaquin River was presented by the Discharger in the Technical Memorandum entitled *Revised Dilution Credit for Trihalomethane Compounds, Turlock Water Quality Control Facility, NPDES No. CA 0078948* (Robertson – Bryan, Inc.), submitted on 12 April 2019.

Furthermore, to account for future Facility discharge operations, which result in a change in the primary discharge location to the Delta Mendota Canal, the long-term arithmetic flow to the San Joaquin River was estimated to be reduced to 7 MGD. This results in a maximum allowed dilution credit of 40. While the updated dilution evaluation could allow for greater dilution credits for bis (2-ethylhexyl) phthalate and carbon tetrachloride, the existing dilution credits result in effluent limitations for these constituents with which the Discharger can readily comply. Therefore, a dilution credit of 19.9 is maintained.

For nitrate, using the 30Q10 (180 cfs or 116 MGD) and the design discharge flow of 20 MGD, a dilution ratio of up to 5.8:1 may be allowed for the calculation of WQBEL's. However, the size of the mixing zone can be reduced to be consistent with Facility performance, resulting in a dilution factor of 2.4. Thus reflecting a mixing zone at which a performance-based effluent limitation can be achieved. The edge of the mixing zone representing the dilution factor of 2.4 is 29.7 meters (just under 100 feet) downstream of the outfall to the San Joaquin River. The width and depth of the mixing zone is approximately 7.3 meters and 0.57 meters, respectively.

The previous Order required the Discharger to conduct a mixing zone confirmation study after initiation of the discharge to the San Joaquin River. The Discharger submitted a mixing zone work plan on 18 August 2014 and has begun the study. This Order requires the Discharger to complete the study and submit the mixing zone confirmation study results by 1 April 2016. This Order may be reopened based on the results of the study.

6. **Attachment F, Section IV.C.2.c.ii.(b), Human Carcinogens Considering Volatilization (Chlorodibromomethane and Dichlorobromomethane).** Insert section detailing the development and application of a new human carcinogen mixing zone for chlorodibromomethane and diclorobromomethane that considers volatilization of these constituents in the San Joaquin River when calculating the applicable dilution credits.

> (b) **Human Carcinogens Considering Volatilization (Chlorodibromomethane and Dichlorobromomethane).**
> On 12 April 2019, the Discharger provided a Technical Memorandum entitled *Revised Dilution Credit for Trihalomethane Compounds, Turlock Water Quality Control Facility, NPDES No. CA 0078948* (Robertson – Bryan, Inc.) which provides the results of an updated dilution/mixing zone study for chlorodibromomethane and dichlorobromomethane that considers hydraulic mixing and volatilization of the volatile organic compounds.
>
> The Technical Memorandum presents revised dilution credits for chlorodibromomethane and dichlorobromomethane, which were derived in a stepwise manner. First, the dilution ratio resulting only from effluent mixing with San Joaquin River water was calculated, utilizing historical and planned effluent discharge rates and historical river flow rate data. Second, the dilution credit accounting for both mixing with river water and volatilization was determined, utilizing data collected from the river at multiple locations downstream of the Facility outfall to quantify the amount of volatilization of chlorodibromomethane and dichlorobromomethane occurring.

The SIP does not specifically address the fate and transport of non-conservative pollutants in the mixing zone provisions. However, the SIP advises that mixing zone studies can include "…monitoring upstream and downstream of the discharge that characterize the extent of actual dilution."[1] This type of mixing zone study would account for the fate and transport of the volatile organic compounds. Furthermore, the USEPA's Technical Support Document for Water Quality-Based Toxics Control (TSD) provides water quality modelling recommendations for the development of waste load allocations that account for constituent loss and transformation processes (e.g., volatilization).[2] Based on the findings of the updated dilution/mixing zone study, there is available dilution for chlorodibromomethane and dichlorobromomethane, as described below.

The nearest flow gage in the San Joaquin River upstream of the Facility's treated effluent outfall is near Crows Landing and is operated by the U.S. Geological Survey (USGS gage 11274550). The harmonic mean flow rate was re-evaluated based on more recent flow data from1 October 1995 through 21 March 2019, and resulted in a harmonic mean flow of 439 cfs, which as stated above is lower than the 617 cfs harmonic mean flow rate cited in the previous mixing zone study performed by the Discharger for human carcinogens.

Upon completion of the North Valley Regional Recycled Water Project effluent conveyance pipeline to provide recycled water to growers along the Delta-Mendota Canal (DMC), the DMC will be the primary discharge location for the Facility, and effluent will be discharged to the San Joaquin River only on a temporary, emergency basis (e.g., when discharges to the DMC are not available due to maintenance). Considering the future discharge operations, the long-term average discharge rate to the San Joaquin River was estimated to be 7 MGD (10.85 cfs), which corresponds to a harmonic mean dilution ratio of 40.5:1.

The chlorodibromomethane and dichlorobromomethane data collected from the San Joaquin River show that these compounds continue to degrade for miles following the point of complete mixing (~2 miles) through degradation of the volatile organic compounds (i.e., volatilization).

[1] SIP, section 1.4.2.1, pg. 17
[2] United States Environmental Protection Agency's Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2 90 001), pgs. 83-84

The amount of chlorodibromomethane and dichlorobromomethane dilution occurring in the San Joaquin River due to volatilization was calculated from comparison of measured river concentrations to calculated river concentrations that assumed conservative mixing (i.e., no loss) of the chlorodibromomethane and dichlorobromomethane. Considering the hydraulic mixing and volatilization a dilution credit for chlorodibromomethane of 110 and a dilution credit for dichlorobromomethane of 83 were calculated. The mixing zone for chlorodibromomethane and dichlorobromomethane extends 14,484 meters (almost nine miles) downstream of the Facility's outfall.

7. **Attachment F, Section IV.C.2.c.iii, Evaluation of Available Dilution for Human Carcinogens (Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride) and Human Health (Nitrate Nitrogen, Total (as N)).** Edit to differentiate between human carcinogen mixing zone for bis (2-ethylhexyl) pthalate and carbon tetrachloride and human health mixing zone for total nitrogen.

iii. **Evaluation of Available Dilution for Human** Carcinogens (Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride)~~Carcinogen Criteria~~ **and Human Health** ~~Criteria~~ **(Nitrate** Nitrogen, Total (as N))~~.plus Nitrite)~~. Section 1.4.2.2 of the SIP, provides that mixing zones should not be allowed at or near drinking water intakes. Furthermore, regarding the application of a mixing zone for protection of human health, the TSD states that, "*...the presence of mixing zones should not result in significant health risks, when evaluated using reasonable assumptions about exposure pathways. Thus, where drinking water contaminants are a concern, mixing zones should not encroach on drinking water intakes.*" There are no drinking water intakes within~~in~~ the human carcinogen mixing zone or the human health criteria mixing zone. ~~-~~The human carcinogen and human health criteria mixing zones meet~~zone meets~~ the requirements of the SIP as follows:

(a) *Shall not compromise the integrity of the entire waterbody* - The TSD states that, "*If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a waterbody (such as a river segment), then mixing zones are likely to have little effect on the integrity of the waterbody as a whole, provided that the mixing zone does not impinge on unique or critical habitats.*" The proposed human carcinogen and ~~The~~ human health mixing zones are~~zone is not applicable to aquatic life criteria. The proposed human health mixing zone is~~ approximately 2 miles and 30 meters long, respectively, constituting a small fraction of the total river reach. The human carcinogen and human health mixing zone do~~does~~ not compromise the integrity of the entire waterbody.

(b) *Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone* – The human carcinogen and human health mixing zones are~~zone is~~ not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zones~~zone~~.

(c) *Shall not restrict the passage of aquatic life* – The human carcinogen and human health mixing zones are~~zone is~~ not applicable to aquatic life criteria, and the narrow plume hugs the eastern bank of the San Joaquin River. Therefore, the mixing zones~~zone~~ will not restrict the passage of aquatic life.

(d) *Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws* – The human carcinogen and human health mixing zones are~~zone is~~ not applicable to aquatic life criteria. The mixing zones~~zone~~ will not impact biologically sensitive or critical habitats.

(e) *Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance* – The allowance of human carcinogen and ~~a~~ human health mixing zones~~zone~~ will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance. This Order requires end-of-pipe effluent limitations (e.g., for BOD_5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

(f) *Shall not dominate the receiving water body or overlap a mixing zone from different outfalls* – The human carcinogen and human health mixing zones arezone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zones dozone does not overlap mixing zones as there are no other outfalls or mixing zones in the vicinity of the discharge. The City of Modesto Water Quality Control Facility's discharge is located approximately 5.5 miles downstream from Discharge Point 001. The downstream edge of the mixing zone for bis (2-ethylhexyl) phthalate and carbon tetrachloride is approximately 3.5 miles upstream from the City of Modesto discharge location; therefore, an overlap of mixing zones does not occur.

(g) *Shall not be allowed at or near any drinking water intake* – There are no drinking water intakes within the human carcinogen or human health mixing zone. The dischargedischarges enters the San Joaquin River just over 28 miles upstream of the nearest drinking water supply (in the Delta downstream of Vernalis). The human carcinogen and human health criteria mixing zones extend approximately 2 miles and 30zone extends just over 3,000 meters, respectively, downstream of the discharge. There is significant dilution, much more than allowed in this Order, prior to any drinking water intake within the Delta.

The human carcinogen and human health mixing zone therefore complycomplies with the SIP. The mixing zoneszone also complycomplies with the Basin Plan, which requires that the mixing zoneszone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zoneszone, the Central Valley Water Board considered the procedures and guidelines in the EPA's *Water Quality Standards Handbook, 2d Edition* (updated July 2007), Section 5.1, and Section 2.2.2 of the TSD. The SIP incorporates the same guidelines.

8. **Attachment F, Section IV.C.2.c.iv, Evaluation of Available Dilution for Human Carcinogens (Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride) and Human Health (Nitrate Nitrogen, Total (as N)).** Insert section evaluating the dilution available for chlorodibromomethane and diclorobromomethane in the San Joaquin River when volatilization is taken into consideration.

iv. **Evaluation of Available Dilution for Human Carcinogens Considering Volatilization (Chlorodibromomethane and Diclorobromomethane).** Section 1.4.2.2 of the SIP provides that mixing zones should not be allowed at or near drinking water intakes. Furthermore, regarding the application of a mixing zone for the protection of human health, the TSD states that, "*…the presence of mixing zones should not result in significant health risks, when evaluated using reasonable assumptions about exposure pathways. Thus, where drinking water contaminants are a concern, mixing zones should not encroach on drinking water intakes.*" There are no drinking water intakes within the human carcinogen mixing zone.

The Discharger has requested a human carcinogen mixing zone for compliance with water quality criteria for chlorodibromomethane and dichlorobromomethane. Based on the Discharger's Dilution Study, a dilution credit of 110 for chlorodibromomethane and a dilution credit of 83 for dichlorobromomethane are justified. The human carcinogen mixing zone meets the requirements of the SIP as follows:

(a) *Shall not compromise the integrity of the entire waterbody* - The TSD states that, "*If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a waterbody (such as a river segment), then mixing zones are likely to have little effect on the integrity of the waterbody as a whole, provided that the mixing zone does not impinge on unique or critical habitats.*" The receiving water, the San Joaquin River, is about 300 miles long, beginning in the Sierra Mountains to the east and terminating in the Delta. The Delta consists of many hundreds of miles of natural and constructed channels. By comparison the mixing zone size is 9 miles long. Therefore, the mixing zone would not compromise the integrity of the entire waterbody.

(b) *Shall not cause acutely toxic conditions to aquatic life passing through the mixing zone* – The human carcinogen mixing zone is not applicable to aquatic life criteria. Therefore, acutely toxic conditions will not occur in the mixing zone.

(c) *Shall not restrict the passage of aquatic life* – The human carcinogen mixing zone is not applicable to aquatic life criteria. Therefore, the mixing zone will not restrict the passage of aquatic life.

(d) *Shall not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws* – The human carcinogen mixing zone is not applicable to aquatic life criteria. The mixing zone will not impact biologically sensitive or critical habitats.

(e) *Shall not produce undesirable or nuisance aquatic life; result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; cause nuisance* – The allowance of the human carcinogen mixing zone will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum; produce objectionable color, odor, taste, or turbidity; cause objectionable bottom deposits; or cause nuisance. This Order requires end-of-pipe effluent limitations (e.g., for BOD_5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

(f) *Shall not dominate the receiving water body or overlap a mixing zone from different outfalls* – As discussed in Section IV.C.2.c.iv.(a) above, the human carcinogen mixing zone is small relative to the water body, so it will not dominate the water body. Furthermore, the mixing zone does not overlap mixing zones as there are no other mixing zones in the vicinity of the discharge. The City of Modesto Water Quality Control Facility's discharge is located approximately 5.5 miles downstream of the discharge. The mixing zone for chlorodibromomethane and dichlorobromomethane extends approximately 9 miles downstream of the Facility's outfall, this extends beyond the outfall from the City of Modesto Water Quality Control Facility, however, the City of Modesto Water Quality Control Facility does not have any existing mixing zones. Furthermore, the City of Modesto Water Quality Control Facility primarily discharges to the Delta Mendota Canal under Order R5-2016-0010 (NPDES No. CA0085316), uses ultraviolet light disinfection that does not produce disinfection byproducts such as chlorodibromomethane and dichlorobromomethane, and only discharges to the San Joaquin River when unable to discharge to the Delta Mendota Canal. Therefore, the mixing zone for chlorodibromomethane and dichlorobromomethane does not overlap any other mixing zone.

(g) *Shall not be allowed at or near any drinking water intake* – There are no drinking water intakes within the human carcinogen mixing zone. The discharge enters the San Joaquin River just over 28 miles upstream of the nearest drinking water supply (in the Delta downstream of Vernalis). The human carcinogen mixing zone extends approximately 9 miles downstream of the discharge. There is significant dilution, much more than allowed in this Order, prior to any drinking water intake within the Delta.

9. **Attachment F, Section IV.C.2.c.v, Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation).** Insert section detailing the evaluation of available dilution for each specific constituent with a mixing zone.

~~iv.~~v. **Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation).** The allowance of a mixing zone and~~**Final Dilution Credits. The final**~~ dilution credits is a discretionary act by the Central Valley Water Board. When determining the appropriate dilution credits for a specific~~and associated mixing zones lengths for each~~ pollutant, several factors must be considered, such as available assimilative capacity, Facility performance, and best practicable treatment or control (BPTC). ~~receiving dilution credit(s) are summarized in the table below.~~ The dilution credits allowed in this Order are in accordance with Section 1.4.2.2 of the SIP, ~~and are~~ a summary of dilution credits is provided in Table F-7. The ~~discretionary act by the~~ Central Valley Water Board has determined the allowable dilution credits on a constituent-by-constituent basis:~~.~~

Table F-7. ~~Final~~ Dilution Credits

Parameter	Units	Available ~~Human Health~~ Dilution Credit	Allowed Dilution Credit	Maximum~~Human Health~~ Mixing Zone/Distance Downstream (meters)
Bis (2-ethylhexyl) Phthalate	mg/L	40.6	19.9	3,048
Carbon Tetrachloride	mg/L	40.6	19.9	3,048
Chlorodibromomethane	mg/L	~~19.9~~110	110~~3,048~~	14,484
Dichlorobromomethane	mg/L	83~~19.9~~	83~~3,048~~	14,484
Nitrate Nitrogen, Total (as N)	mg/L	5.8	2.4	29.7

(a) **Bis (2-ethylhexyl) Phthalate and Carbon Tetrachloride.** The receiving water contains assimilative capacity for bis (2-ethylhexyl) phthalate and carbon tetrachloride, and the human carcinogen mixing zone for these constituents meets the mixing zone requirements of the SIP. Section 1.4.2.2 of the SIP requires that, "*A mixing zone shall be as small as practicable.*", and Section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.*" The Central Valley Water Board considered Facility performance and the receiving water's assimilative capacity for each individual pollutant in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water's assimilative capacity for each pollutant and possibly violating the Antidegradation Policy. Based on Facility performance, the full dilution credits are not needed for bis (2-ethylhexyl) phthalate and carbon tetrachloride and have been reduced to ensure compliance with the mixing zone provisions of the SIP. The Facility can meet more stringent WQBELs for these constituents than with the full allowance of dilution resulting in a mixing zone for bis (2-ethylhexyl) phthalate and carbon tetrachloride that is considered as small as practicable for this Facility and fully complies with the SIP.

(b) **Nitrate Nitrogen, Total (as N).** The receiving water contains assimilative capacity for nitrate and a human health mixing zone for this constituent meets the mixing zone requirements of the SIP. Section 1.4.2.2 of the SIP requires that, "*A mixing zone shall be as small as practicable.*", and Section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.*" The Central Valley Water Board considered Facility performance and the receiving water's assimilative capacity for nitrate in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water's assimilative capacity for nitrate and possibly violating the Antidegradation Policy. Based on Facility performance, the full dilution credits are not needed for nitrate and has been reduced to ensure compliance with the mixing zone provisions of the SIP. The Facility can meet more stringent WQBELs for this constituent than with the full allowance of dilution resulting in a mixing zone for nitrate that is considered as small as practicable for this Facility and fully complies with the SIP.

> (c) **Chlorodibromomethane and Dichlorobromomethane.** The receiving water contains assimilative capacity for chlorodibromomethane and dichlorobromomethane, and the human health mixing zone for these constituents meets the mixing zone requirements of the SIP. Section 1.4.2.2 of the SIP requires that, "*A mixing zone shall be as small as practicable.*", and Section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.*" The Central Valley Water Board considered Facility performance and the receiving water's assimilative capacity for each individual pollutant in determining the dilution needed. The consideration of these factors is necessary to avoid allocating an unnecessarily large portion of the receiving water's assimilative capacity for each pollutant and possibly violating the Antidegradation Policy. Based on Facility performance, the Discharger would be unable to comply with more stringent effluent limitations that utilize a smaller mixing zone. Therefore, mixing zones for chlorodibromomethane and dichlorobromomethane based on the full dilution credits are considered as small as practicable and fully comply with the SIP.

10. **Attachment F, Section IV.C.2.c.vi.h, Regulatory Compliance for Dilution Credits and Mixing Zones.** Edit language to include new available dilution ratios for bis (2-ethylhexyl) phthalate, carbon tetrachloride, and total nitrate based on the new river to effluent flow ratio provided by the Discharger, and provide rationale as to why the maximum available dilution credits for these constituents were not used to calculate final effluent limitations.

> (h) The mixing zone study indicates the maximum allowed dilution factor to be 40.6~~19.9~~ for bis (2-ethylhexyl) phthalate and carbon tetrachloride and the maximum allowed dilution credit for nitrate to be 5.8 for nitrate.~~human health constituents.~~ Section 1.4.2.2B of the SIP, in part states, *"The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements."* As shown in Table F-7, the dilution credits have been reduced based on Facility performance for these constituents to ensure the mixing zones are as small as practicable.

11. Attachment F, Section IV.C.3.c.vi., Determining the Need for WQBEL's. Edit to include new dilution factor and to include new effluent limitations for chlorodibromomethane that have been calculated using the new dilution factor.

vi. **Chlorodibromomethane**

(a) **WQO.** The CTR includes a criterion of 0.41 µg/L for chlorodibromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) **RPA Results.** The MEC for chlorodibromomethane was 12.8 µg/L based on 46 samples collected between April 2010 and April 2014. Chlorodibromomethane was not detected in the upstream receiving water based on 12 samples collected between April 2010 and April 2014 (MDL 0.2 µg/L). Therefore, chlorodibromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) **WQBEL's.** The Discharger performed an upstream ambient disinfection byproduct low-level concentration study to quantify available assimilative capacity in the San Joaquin River for chlorodibromomethane. The Discharger collected upstream samples on 25 February 2009 and 15 April 2009. The analytical laboratory performed a modified U.S. EPA 524.2 method that uses a selected ion monitoring (SIM) procedure with gas chromatograph/mass spectrometry (GC/MS) analysis. The SIM method targets limited predetermined ion ranges allowing higher scanning rates for these ranges. The RL's using the SIM method are approximately three to five times lower than the MDL for the standard method. Based on the use of the SIM procedure, chlorodibromomethane concentrations in the upstream receiving water were reported as "not detected" at an RL of 0.05 µg/L. The ambient monitoring using the SIM procedure demonstrates that the San Joaquin River has assimilative capacity for chlorodibromomethane. Therefore, as discussed further in section IV.C.2.c of this Fact Sheet, a dilution credit for chlorodibromomethane of 110~~19.9~~ was allowed in the development of WQBEL's for chlorodibromomethane. This Order contains a final AMEL and MDEL for chlorodibromomethane of 43~~7.6~~ µg/L and 72~~12~~ µg/L, respectively, based on the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** ~~Analysis of the effluent data shows that the MEC of 12.8 µg/L is greater than applicable WQBEL's. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. TSO R5-2014-0901 provides a compliance schedule to achieve compliance with the final effluent limitations for chlorodibromomethane by 31 December 2019 in accordance with Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.~~ Based on 47 samples obtained between June 2010 and April 2014, chlorodibromomethane was detected in the effluent 47 times with a maximum concentration of 12.8 µg/L. Thus, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

12. Attachment F, Section IV.C.3.c.vii., Determining the Need for WQBEL's. Edit to include new dilution factor used and to include new effluent limitations for dichlorobromomethane that have been calculated using the new dilution factor.

vii. **Dichlorobromomethane**

(a) **WQO.** The CTR includes a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) **RPA Results.** The MEC for dichlorobromomethane was 41.9 µg/L based on 46 samples collected between April 2010 and April 2014. Dichlorobromomethane was not detected in the upstream receiving water based on 12 samples collected between April 2010 and April 2014 (MDL 0.2 µg/L). Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) **WQBEL's.** The Discharger performed an upstream ambient disinfection byproduct low-level concentration study to quantify available assimilative capacity in the San Joaquin River for dichlorobromomethane. The Discharger collected upstream samples on 25 February 2009 and 15 April 2009. The analytical laboratory performed a modified U.S. EPA 524.2 method that uses a selected ion monitoring (SIM) procedure with gas chromatograph/mass spectrometry (GC/MS) analysis. The SIM method targets limited predetermined ion ranges allowing higher scanning rates for these ranges. The RL's using the SIM method are approximately three to five times lower than the MDL for the standard method. Based on the use of the SIM procedure, dichlorobromomethane concentrations in the upstream receiving water were reported as "not detected" at an RL of 0.05 µg/L. The ambient monitoring using the SIM procedure demonstrates that the San Joaquin River has assimilative capacity for dichlorobromomethane. Therefore, as discussed further in section IV.C.2.c of this Fact Sheet, a dilution credit for dichlorobromomethane of 83~~19.9~~ was allowed in the development of WQBEL's for dichlorobromomethane. This Order contains a final AMEL and MDEL for dichlorobromomethane of 46~~11~~ µg/L and 74~~17~~ µg/L, respectively, based on the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** ~~Analysis of the effluent data shows that the MEC of 41.9 µg/L is greater than applicable WQBEL's. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. TSO R5-2014-0901 provides a compliance schedule to achieve compliance with the final effluent limitations for dichlorobromomethane by 31 December 2019 in accordance with Water Code section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.~~ Based on 47 samples obtained between June 2010 and April 2014, dichlorobromomethane was detected in the effluent 47 times with a maximum concentration of 41.9 µg/L. Thus, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

13. Attachment F, Section IV.C.4.e, Table F-20. Summary of Water Quality-Based Effluent Limitations. Edit table to include new effluent limitations for chlorodibromomethane and dichlorobromomethane.

Table F-20. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	1,668	2,502	3,336	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	1,668	2,502	3,336	--	--
Priority Pollutants						
Bis (2-ethylhexyl) phthalate	µg/L	30	--	86	--	--
Carbon Tetrachloride	µg/L	4.2	--	8.5	--	--
Chlorodibromomethane	µg/L	437.6	--	7212	--	--
Dichlorobromomethane	µg/L	4611	--	7417	--	--
Mercury, Total Recoverable	lbs/year	0.82[2]	--	--	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	350	820	--	--	--
Ammonia Nitrogen, Total (as N) (16 April – 31 October)	mg/L	0.94	2.1	--	--	--
	lbs/day[1]	160	350	--	--	--
Ammonia Nitrogen, Total (as N) (1 November – 15 April)	mg/L	2.1	4.7	--	--	--
	lbs/day[1]	350	784	--	--	--
Chlorine, Total Residual	mg/L	--	0.011[3]	0.019[4]	--	--
Chlorpyrifos	µg/L	[5]	--	[6]	--	--
Diazinon	µg/L	[5]	--	[6]	--	--
Electrical Conductivity @25°C	µmhos/cm	1,250[7]	--	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	31	38	--	--	--
Total Coliform Organisms	MPN/ 100 mL	--	2.2[8]	23[9]	--	240

14. Attachment F, Section IV.D.3, Satisfaction of Anti-backsliding Requirements. Include language that explains why the relaxation of effluent limitations for chlorodibromomethane and dichlorobromomethane are consistent with anti-backsliding provisions.

> **3. Satisfaction of Anti-Backsliding Requirements**
>
> The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).
>
> The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2010-0002-01, with the exception of effluent limitations for ammonia, boron, chloride, copper, electrical conductivity, iron, lead, manganese, selenium, and silver. The effluent limitations for these pollutants are less stringent than those in Order R5-2010-0002-01. Furthermore, the effluent limitations for chlorodibromomethane and dichlorobromomethane in this Order are less stringent than those in Order R5-2015-0027. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
>
> a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.
>
> i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.
>
> ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.
>
> The San Joaquin River is considered an attainment water for ammonia, chlorodibromomethane, dichlorobromomethane, copper, iron, lead, manganese, selenium, and silver because the receiving water is not listed as impaired on the 303(d) list for these constituents[1]. As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, changes to the stringency of the effluent limitations for ammonia, copper, iron, lead, manganese, selenium, and silver from Order R5-2010-0002-01, and the changes to the stringency of the effluent limitations for chlorodibromomethane and dichlorobromomethane from Order R5-2015-0027 meets the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3.a of this Fact Sheet, updated information that was not available at the time Order R5-2010-0002-01 was issued indicates that boron, chloride, copper, electrical conductivity, iron, lead, manganese, selenium, and silver, do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Furthermore, a new mixing zone study was provided for chlorodibromomethane and dichlorobromomethane, which is new information that was not available at the time Order R5-2015-0027 was issued. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

x. **Chlorodibromomethane.** Order R5-2010-0002 includes effluent limitations for chlorodibromomethane based on CTR criterion for the protection of human health. Based on the *Technical Memorandum: Revised Dilution Credit for Trihalomethane Compounds, Turlock Water Quality Control Facility, NPDES No. CA 0078948* submitted to the Central Valley Water Board by the Discharger on 12 April 2019, a mixing zone and dilution credit of 110:1 is applicable and the receiving water contains assimilative capacity for chlorodibromomethane, as discussed in section IV.C.2.b of this Fact Sheet.

xi. **Dichlorobromomethane.** Order R5-2010-0002 includes effluent limitations for dichlorobromomethane based on CTR criterion for the protection of human health. Based on the *Technical Memorandum: Revised Dilution Credit for Trihalomethane Compounds, Turlock Water Quality Control Facility, NPDES No. CA 0078948* submitted to the Central Valley Water Board by the Discharger on 12 April 2019, a mixing zone and dilution credit of 83:1 is applicable and the receiving water contains assimilative capacity for dichlorobromomethane, as discussed in section IV.C.2.b of this Fact Sheet.

Thus, removal or relaxation of the effluent limitations for chloride, copper, iron, lead, manganese, selenium, and silver from Order R5-2010-0002-01 and the relaxation of the effluent limitations for chlorodibromomethane and dichlorobromomethane from Order R5-2015-0027 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the relaxation~~removal~~ of effluent limitations based on information that was not available at the time of permit issuance.

c. **Dichlorobromomethane.** For dichlorobromomethane, the MDEL has changed from the previous Order. However, the effluent limit is not less stringent. In this case, the WLA in this Order and the previous Order are identical. The WLA provides a definition of effluent quality that is necessary to meet the water quality standards of the receiving water and is used to derive WQBEL's that are used to enforce the WLA.

The TSD warns that, "*Direct use of a WLA as a permit limit creates a significant risk that the WLA will be enforced incorrectly, since effluent variability and the probability basis for the limit are not considered specifically.*" (TSD, p. 96) The SIP and TSD include identical procedures for calculating WQBEL's that use the statistical variability of the effluent to convert the WLA to AMEL's and MDEL's.

The new effluent data used to calculate WQBEL's for this Order has different statistical variability (i.e., coefficient of variation is different) than used in the previous Order. Changes in the coefficient of variation can result in small changes to the effluent limits. However, the slight changes in effluent limits do not allow for an increase in the pollutants discharged. The TSD states, "*Since effluents are variable and permit limits are developed based on a low probability of exceedence, the permit limits should consider effluent variability and ensure that the requisite loading from the WLA is not exceeded under normal conditions. In effect then, the limits must "force" treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings.*" (TSD, p. 97) Therefore, although there are slight differences in the effluent limit, the WLA is identical, so the level of treatment needed to maintain compliance with the effluent limit remains the same. Consequently, the effluent limit is not less stringent than the previous Order, and there is no backsliding.

WQBEL's for dichlorobromomethane were calculated based on monitoring data collected between April 2010 and April 2014, which is representative of current treatment plant performance. Therefore, Central Valley Water Board staff considers this effluent data to be the most representative and reliable dataset to use to determine current Facility performance and development of WQBEL's.

The MDEL for dichlorobromomethane in this Order was calculated as a higher value than in previous Order R5-2010-0002-01. However, the AMEL remains the same. The WQBEL's in both Orders are based on the same WLA (i.e., the WLA is based on the CTR human health criterion for dichlorobromomethane). The reason for the change in the AMEL and MDEL is due to a change in the variability of the effluent data for dichlorobromomethane. The WQBEL's, however, are equally protective of the beneficial uses. The level of treatment needed to maintain compliance with the effluent limits remains the same. Consequently, the effluent limits are not less stringent than the previous permit, and there is no backsliding.

15. Attachment F, Section IV.D.4.a, Antidegradation Policies. Edit to include language that provides detail as to how increasing the allowed dilution and effluent limitations for chlorodibromomethane and diclorobromomethane does not result in increased degradation of the receiving water.

4. Antidegradation Policies

a. **Surface Water.** This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order removes effluent limitations for boron, chloride, copper, iron, lead, manganese, selenium, and silver based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. This Order relaxes existing effluent limitations for ammonia during the winter season based on updated pH and temperature data used to calculate the applicable 1999 NAWQC criteria for the protection of aquatic life. The effluent limits for electrical conductivity are also relaxed because the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No; 34-2009-8000-392-CU-WM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers pending reconsideration of the South Delta salinity objectives and adoption of a proper program of implementation that includes municipal dischargers. A performance-based limit for EC of 1,250 µmhos/cm has been established until site-specific objectives are developed. The limit takes into consideration water conservation and drought effects, which accounts for lower influent wastewater flows and higher EC concentrations. Although the EC limit is slightly higher than current EC concentrations, the mass loading will be unchanged due to lower wastewater flows. Therefore, the performance-based limit ensures the mass of salinity does not increase. The removal and relaxation of WQBEL's for these parameters will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction of water quality. Therefore, the Central Valley Water Board finds that the relaxation of the effluent limitations does not result in an allowed increase in pollutants or any additional degradation of the receiving water.

This Order also relaxes effluent limitations for chlorodibromomethane and dichlorobromomethane from Order R5-2015-0027 based on a revised mixing zone. Since the relaxation is based on consideration of the degradation of the volatile organic compounds in the receiving water within the approved mixing zone, the increased effluent limitation concentrations will not result in additional use of assimilative capacity or an increase in pollutant loading downstream of the mixing zone.

16. Attachment F, Section IV.D.5, Stringency of Requirements for Individual Pollutants, Table F-22 Summary of Final Effluent Limitations. Edit table to include new effluent limitations for chlorodibromomethane and dichlorobromomethane.

Table F-22. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	MGD	20[2]	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[3]	1,668	2,502	3,336	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[3]	1,668	2,502	3,336	--	--	
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
Bis (2-ethylhexyl) phthalate	µg/L	30	--	86	--	--	CTR
Carbon Tetrachloride	µg/L	4.2	--	8.5	--	--	CTR
Chlorodibromo-methane	µg/L	437.6	--	7212	--	--	CTR
Dichlorobromo-methane	µg/L	4611	--	7417	--	--	CTR
Mercury, Total Recoverable	lbs/year	0.82[3]	--	--	--	--	PB
Non-Conventional Pollutants							
Aluminum, Total Recoverable	µg/L	350	820	--	--	--	SEC MCL
Ammonia Nitrogen, Total (as N) (16 April – 31 October)	mg/L	0.94	2.1	--	--	--	NAWQC
	lbs/day[3]	160	350	--	--	--	
Ammonia Nitrogen, Total (as N) (1 November – 15 April)	mg/L	2.1	4.7	--	--	--	NAWQC
	lbs/day[1]	350	784	--	--	--	
Chlorine, Total Residual	mg/L	0.011[6]	--	0.019[7]	--	--	NAWQC
Chlorpyrifos	µg/L	[8]	--	[9]	--	--	BP
Diazinon	µg/L	[8]	--	[9]	--	--	BP

17. Attachment H, Calculation of WQBEL's. Edit table to include new dilution factor and effluent limitations for chlorodibromomethane and dichlorobromomethane.

ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations

Parameter	Units	Criteria	Mean Background Concentration	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Aluminum, Total Recoverable	µg/L	200	N/A	N/A	2.32	1.77	350[1]	--	820[1]
Bis (2-ethylhexyl) phthalate	µg/L	1.8	0.38	19.9	2.87	--	30	86	--
Carbon Tetrachloride	µg/L	0.25	<0.05	19.9	2.01	--	4.2	8.5	--
Chlorodibromomethane	µg/L	0.41	<0.05	110~~19.9~~	1.68	--	43~~7.6~~	72~~12~~	--
Dichlorobromomethane	µg/L	0.56	<0.05	83~~19.9~~	1.60	--	46~~11~~	74~~17~~	--
Nitrate Nitrogen, Total (as N)	mg/L	10	1.19[2]	2.4	1.21	--	31	--	38

[1] Calculated by setting the LTA equal to the Secondary MCL of 200 µg/L and using the AMEL multiplier to set the AMEL. The AWEL was calculated from the AMEL using the MDEL/AMEL multiplier. (Table 2 of the SIP)
[2] Maximum background concentration.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at the Water Quality Petitions webpage: (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **5 December 2019**.

PATRICK PULUPA, Executive Officer