

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0058

WASTE DISCHARGE REQUIREMENTS

FOR

JOHN BAKER, LAURA BAKER, DENNIS BAKER AND ETHEL BAKER
BAKER RANCH
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

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

1. On 16 February 2018, the Tuolumne City Sanitary District (TCSD) submitted a Report of Waste Discharge (RWD) to update Waste Discharge Requirements (WDRs) Order 95-129 for its Wastewater Treatment Plant (WWTP or Facility). TCSD submitted additional information on various dates in September 2018, December 2018 and January 2019.
2. WDRs Order 95-129 prescribes requirements for the WWTP. Land application of undisinfected secondary treated wastewater at the privately-owned Baker Ranch (Ranch) is regulated under WDRs Order 95-137. Both WDRs Orders 95-129 and 95-137 were adopted by the Central Valley Water Board on 26 May 1995. TCSD owns and operates the WWTP; and John Baker, Laura Baker, Dennis Baker and Ethel Baker (collectively, Bakers) own the Ranch. As requested by TCSD and the Bakers, this Order consolidates the two existing WDRs Orders into a single updated order. Accordingly, TCSD and the Bakers (collectively, Dischargers) are jointly responsible for compliance with this Order.
3. The WWTP is located at 18050 Box Factory Road, in Tuolumne County (Section 8, T1N, R16E, MDB&M). The Ranch is located approximately one mile southwest of the WWTP (Sections 17, 18 and 19, T1N, R16E, MDB&M). Both locations are depicted on **Attachment A** (incorporated herein). The TCSD WWTP is comprised of Tuolumne County Assessor's Parcel Number (APN) 062-630-023; and the Ranch is comprised of APNs 062-190-015, 062-190-074, 062-190-075 and 062-190-077.
4. Order 95-129 contains a limit of 0.34 million gallons per day (MGD) as a monthly average dry weather discharge flow limit. TCSD requested that the WDRs be updated to incorporate proposed facility improvements and to include requirements for the use of recycled water at the Ranch, which is currently regulated under WDRs 95-137. Therefore, the WDRs must be revised. This Order rescinds and replaces WDRs Orders 95-129 and 95-137.

Existing Facility

5. The existing facility receives wastewater from the unincorporated area of Tuolumne City and adjacent properties. Based on 2015 Census data, TCSD serves an estimated population of 1,763 people with approximately 2,060 Equivalent Dwelling Units. The primary wastewater sources in the service area are residential, though there are also wastewater connections associated with typical small to medium size businesses, schools, and a casino.
6. The current water supply for Tuolumne City community (except the casino) is mainly from surface water. Approximately 96 percent of potable water provided by the Tuolumne Utility District (TUD) is from the South Fork of the Stanislaus River at Lyons Reservoir and Pinecrest Lake; the other four percent is supplied by groundwater wells. Water supply for Tuolumne City is characterized as follows based on a TUD test conducted on 22 June 2018:

Potable Water					
Constituent	Total Dissolved Solids (TDS) (mg/L)	Electrical Conductivity (EC) (µmhos/cm)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as N (mg/L)
Concentration	36	62	3.5	<1	Non-Detect

The casino has a groundwater supply well with a TDS concentration of 430 mg/L, based on a sample collected on 27 February 2019.

7. In 2011, the WWTP was updated from dual aeration basins and settling ponds (Pond 1 and 2) to a Biolac extended aeration activated sludge treatment system. Unlined Ponds 1 and 2 were previously used as treatment ponds, but are now used as emergency storage ponds. TCSD projects average dry weather influent flow (ADWF) of 0.35 MGD at buildout based on the design flow of the WWTP.
8. Influent flow rates from January 2016 through March 2018 are summarized as follows:

Year	Total Flow (MG)	Avg. Flow (MGD)	ADWF (Aug.-Oct.) ¹ (MGD)	Avg. Wet Month Flow (MGD)
2016	62.3 (191 ac-ft)	0.17	0.14	0.28 (Nov.2016-Mar.2017)
2017	79.6 (244 ac-ft)	0.22	0.16	0.20 (Nov.2017-Mar.2018)

¹. Current Flow Limit: 0.34 MGD as ADWF.

The monthly average flow during the wet season from November 2016 through March 2017 was 0.28 MGD, which is double of the 2016 ADWF of 0.14 MGD,

indicating significant inflow and infiltration (I/I) in the wastewater collection systems. TCSD has identified high I/I and has requested a six-million-dollar grant from the State Revolving Fund (SRF) for a Collection System Rehabilitation Project. The funding is still in the approval process, but it is listed in the SRF budget for 2019 fiscal year. This Order requires TCSD to submit a completion report after TCSD finishes the project.

9. The wastewater treatment and disposal facilities consist of headworks, an aeration basin with two integral clarifiers, a storage lagoon, a sludge lagoon, emergency Ponds 1 and 2, an effluent storage reservoir (Grinding Rock Reservoir) and land application areas (LAAs) at the Ranch. General site plans for the WWTP and the LAAs at the Ranch, and a process flow diagram are depicted on **Attachments B, C, and D** (incorporated herein), respectively.
10. The wastewater treatment basins, storage ponds and reservoir are summarized as follows:

Name	Function	Surface Area (ft ²)	Depth (ft.)	Capacity (MG) ¹	Liner
Aeration Basin	Activated Sludge Treatment	13,300	15	1.14	Concrete
Storage Lagoon	Emergency Storage	11,000	13	0.62	Concrete
Sludge Lagoon	Storage	10,000	12.5	0.5	Concrete
Storage Pond 1	Emergency Storage	13,500	10	0.23	Unlined
Storage Pond 2	Emergency Storage	9,000	5	0.2	Unlined
Grinding Rock Reservoir	Effluent Storage	640,000	26	98.7	Unlined

¹. Based on two feet of freeboard.

Pond 1 is divided into two sections with a non-engineered earthen dam. Ponds 1 and 2 are used as temporary overflow containment facilities for raw and partially treated wastewater.

11. Undisinfected secondary treated effluent is discharged from the WWTP to Grinding Rock Reservoir to irrigate pasture land for non-dairy animals during the irrigation season. Grinding Rock Reservoir is owned and operated by TCSD and located approximately one mile south of the WWTP. During the irrigation season, direct diversions from the effluent pipelines (without going through the reservoir) are also utilized to flood irrigate a portion of the LAAs near the location of groundwater monitoring well DG-2.
12. There are approximately 114 acres of LAAs, of which about 13 acres are flood-irrigated, and about 101 acres irrigated by sprinklers. The Ranch owns and maintains the sprinkler irrigation system. Based on the current level of effluent flow, the total

volume of the treated wastewater does not meet the irrigation demand. From April to September, the Ranch uses the Grinding Rock Reservoir to stabilize supplemental water from Turnback Creek, which is adjacent to the LAAs and the reservoir as shown on **Attachment C**. The treated effluent blended with supplemental water is applied to the LAAs during irrigation season.

13. The LAAs do not have a tailwater/runoff control collection system to prevent undisinfected secondary wastewater runoff from entering the surface water. TCSD proposed to install the tailwater collection/runoff control system in 2020-2021 when SRF grant funding is available. This Order requires TCSD to submit a *Tailwater/Runoff Control Workplan* and a completion report after TCSD finishes this project.
14. The WWTP does not have sludge processing facilities. The headworks screenings and grit accumulated in the aeration basin are disposed to an approved reuse/disposal site. Waste sludge from the clarifiers flows by gravity to the concrete lined Sludge Lagoon. Daily sludge wasting rates range between 130 to 200 lbs. Waste sludge in the Sludge Lagoon is scheduled to be removed off-site every three to four years. The RWD states that the last sludge removal occurred in July 2016 when approximately 75 dry tons of sludge was hauled offsite via a mobile dewatering truck by Synagro Inc. Decant water was returned to the headworks via a leachate return pipe from the Sludge Lagoon.
15. Influent and effluent monitoring data are summarized as follows.

Average Concentrations			
Constituents	Influent ¹	Effluent prior to reservoir ^{1, 2}	Effluent out of reservoir
BOD (mg/L)	467	4.7	NA
Total Suspended Solid (mg/L)	398	5.6	NA
EC (umhos/cm)	810	1,031	438 ³
Nitrate as N (mg/L)	NA	50	1.7 ⁴
Ammonia as N (mg/L)	39	Non-detect	NA
pH (Std Units)	8.0	7.5	NA
^{1.} Data collected monthly from January 2017 through October 2018. ^{2.} Prior to entering the Grinding Rock Reservoir without blending with supplemental water. ^{3.} Three samples from 27 February to 1 March 2019. ^{4.} Five sampling events from December 2018 to January 2019 with a range from non-detect to 3.0 mg/L.			

16. Effluent EC (prior to reservoir) averaged 1,031 µmhos/cm from January 2017 through October 2018. Comparing EC in the effluent and potable water (62 µmhos/cm), the incremental increase of salinity though water usage in the Tuolumne City community is higher than the normal range for domestic use. TCSD states that high salinity in the

wastewater is mainly contributed by the casino due to high salinity groundwater supply and use of sodium-based salt water softer at the casino. In 2018, wastewater generated from the casino accounted for approximately 20 percent of wastewater flows to the WWTP. Based on a sample collected on 5 March 2019, the wastewater generated from the casino had an EC of 1,160 umhos/cm.

17. Compared to other similar wastewater treatment facilities, the effluent (prior to reservoir) from this WWTP has a relative high average of nitrate nitrogen concentration (50 mg/L), indicating that the treatment system converts ammonia to nitrate form, and does not remove nitrogen effectively from the wastewater. In order to reduce effluent nitrate concentrations, TCSD has started to seek options for enhancing denitrification in the wastewater treatment system. This Order requires TCSD to submit a best practicable treatment or control (*BPTC Evaluation and Implementation Plan for Salinity and Nitrogen Reduction*).
18. Effluent diverted to Grinding Rock Reservoir is blended with low salinity supplemental water. The table below summarizes the volumes and TDS concentrations of supplemental water and effluent in 2016. Based on three sampling events from 27 February to 1 March 2019, the blended effluent from the storage reservoir had an average TDS concentration of 306 mg/L (EC 438 µmhos/cm), which is less than the recommended Maximum Contaminant Level (MCL) of 500 mg/L for TDS.

2016 Annual Volume		TDS (mg/L)	Blended Effluent TDS (mg/L)	Recommended MCL for TDS (mg/L)
Supplemental Water	204 ac-ft (0.18 MGD)	150 ¹	306 ³	500
Unblended Effluent	189 ac-ft (0.17 MGD)	721 ²		
¹ . Spring water TDS concentration. ² . Calculated by multiplying EC avg. by 0.7. EC avg. based on data collected monthly from Jan. 2017 through Oct. 2018. ³ . Calculated by multiplying EC avg. by 0.7. EC avg. based on three sets of data from 27 Feb. to 1 Mar. 2019.				

19. From December 2018 to January 2019, TCSD completed a five-week nitrate study for the blended effluent from the reservoir. Based on five sampling events, the average nitrate nitrogen concentration of effluent from the reservoir was 1.7 mg/L indicating that Grinding Rock Reservoir is acting as a buffer pond to the treated effluent where denitrification occurs. TCSD stated that the blended effluent from the reservoir is representative of water quality applied to the LAAs and planned to monitor the flow rates and quality of the blended effluent.

Proposed Changes

20. TCSD proposed to discontinue diverting unblended effluent directly to a portion of LAAs to reduce potential threat to groundwater quality from the effluent with high salinity and nitrate concentrations. All effluent will be conveyed to the reservoir for blending with supplemental water and for further denitrification in the reservoir before distribution to all LAAs.
21. TCSD proposed to install a LAA tailwater collection/runoff control system in 2020-2021 when SRF grant funding is available.
22. In order to monitor the quality and volume of blend effluent discharged to the LAAs, two flow meters and a second effluent sampling station will be setup at the locations shown in **Attachment D**.
23. Depending on grant funding, potential near-term capital improvements at the WWTP may include some or all the following alternatives:
 - a. Supervisory Control and Data Acquisition (SCADA)/Security/Control System Upgrades
 - b. Clarifier Pump Replacements

This project will replace the existing air lift pumps with a conventional suction pump to provide operational control of return activated sludge and waste activated sludge rates.
 - c. Sludge Lagoon Aeration & Mixing

This project will replace the existing brush aerators with floating aspirating aerators and add a solar mixer to improve mixing within the lagoon and energy efficiency.
 - d. Lining Storage Pond 1 with high density polyethylene (HDPE) or equivalent liner material
 - e. Miscellaneous WWTP Site Improvements

This project includes process piping, site paving and lighting improvements within the WWTP.

Site-Specific Conditions

24. Local land uses are mostly agricultural and low density residential.
25. Annual precipitation in the area is approximately 33 inches. The average evapotranspiration rate is approximately 53 inches annually.
26. The RWD states that Federal Emergency Management Agency (FEMA) flood map shows the onsite floodplain is in Zone X, which is a moderate to low risk area that is determined to be outside the 0.2 percent (or 500-year) annual chance floodplain.
27. The WWTP is bordered on the east by Turnback Creek, a tributary to the Tuolumne River and (New) Don Pedro Reservoir. Generally, the topography around the WWTP consists of the foothills and gently undulating plains. There are two drainage ditches at the WWTP, located on the north and west boundaries of the facility. The stormwater runoff onsite is collected and discharged to Turnback Creek.
28. A soil investigation analysis in April 2017 indicated that soils at the Ranch are mostly lean clays with some sand that have sufficient absorptive properties and high percolation rates to accommodate effluent irrigation.

Groundwater Considerations

29. In March 2008, TCSD installed four groundwater monitoring wells (TP-1, TP-2, TP-3, and TP-4) at the WWTP site and four monitoring wells (BG-1, BG-2, DG-1, DG-2) at the Ranch. The well locations are show on **Attachments B** and **C**. In addition, the RWD indicates that there are four active spring wells SP-1, SP-3, SP-4 and SP-5 monitoring spring at the Ranch. Water in the spring wells has been present seasonally. Based on available data collected in SP-1 and SP-3 in 2016 and 2017, the average TDS and nitrate as nitrogen concentrations in the spring were 150 mg/L and 2.7 mg/L, respectively.
30. The WWTP is located approximately one mile from the LAA site. Therefore, background groundwater quality and flow directions may be different at each site. Groundwater beneath the WWTP flows toward the southeast and Turnback Creek; Groundwater beneath the LAA flows toward the west and southwest.
31. TP-1 and TP-2 are located upgradient or cross-gradient of the WWTP and TP-3 and TP-4 are generally downgradient of WWTP and adjacent to Turnback Creek. The depths to groundwater ranged from 8 to 40 feet below ground surface (bgs) at the WWTP site. BG-1 and BG-2 in the Ranch are considered upgradient wells. Groundwater depths in the downgradient wells DG-1 and DG-2 in the Ranch ranged from 4.5 to 11 feet bgs.

32. Selected groundwater quality data from March 2012 through June 2018 are summarized in the table below.

Average Concentration ⁵					
Constituent		TDS (mg/L)	Sodium (mg/L)	Chloride (mg/L)	Nitrate as N (mg/L)
Concentration Protective of Beneficial Uses/Wells		500 to 1,500 ²	69 ¹	106 ¹ to 600 ³	10 ⁴
Baker Ranch LAA Upgradient ⁶	BG-2	226	7.9	25	11
Baker Ranch LAA Downgradient	DG-1	385	17	33	0.8
	DG-2	321	19	50	3.2
WWTP Site Upgradient	TP-1	141	8.5	2.3	0.2
	TP-2	192	11	4.1	0.1
WWTP Site Downgradient	TP-3	356	28	17	1.2
	TP-4	428	42	22	4.6
<ol style="list-style-type: none"> 1. Lowest agricultural water quality goal. 2. TDS Secondary Maximum Contaminant Level, range: Recommended level = 500 mg/L; Upper level = 1,000 mg/L; Short term level = 1,500 mg/L. 3. Secondary Maximum Contaminant Level, range: Recommended level = 250 mg/L; Upper level = 500 mg/L; Short term level = 600 mg/L. 4. Primary Maximum Contaminant Level. 5. Data from March 2012 through November 2016 were collected quarterly; data from 2017 through 2018 were collected annually. 6. Well BG-1 does not produce enough water to allow regular sampling; therefore, this well is excluded from the analysis. 					

33. In general, onsite groundwater does not exceed concentrations protective of beneficial uses for TDS, chloride, and sodium. The results are as follows:
- a. TDS concentrations in the monitoring wells were less than the recommended Secondary MCL of 500 mg/L. For the LAA site, the lowest average TDS concentration was 226 mg/L in the upgradient well BG-2, and the highest average TDS concentration was 385 mg/L in the downgradient well DG-1, indicating that wastewater discharge may have contributed salinity in the groundwater. TDS data for well DG-2 (located inside of LAA via flood irrigation) show a slightly increasing trend indicating that accumulated salt is likely contributed by the wastewater land application. For the WWTP site, the average TDS concentrations in downgradient wells TP-3 and TP-4 are greater than the TDS concentrations in upgradient wells TP-1 and TP-2, indicating that the historical use of unlined wastewater treatment ponds may have impacts to groundwater salinity.
 - b. Chloride concentrations in the existing monitoring wells were less than the lowest agricultural water quality goal of 106 mg/L. The highest average

concentration of 50 mg/L was reported in downgradient well DG-2 in the LAA. The lowest average concentration was 2.3 mg/L in upgradient well TP-1 at the WWTP site.

- c. Sodium concentrations in the existing monitoring wells were less than the Agriculture Water Quality Goal (69 mg/L). Average concentrations range from 7.9 to 42 mg/L, with the highest concentration in TP-4.
- d. Nitrate as nitrogen concentrations in the existing monitoring wells (except BG-2) were less than the Primary MCL of 10 mg/L. Upgradient well BG-2 has an average concentration of 11 mg/L, which is slightly greater than the MCL of 10 mg/L and may be an indicator of natural conditions or influences from nearby agricultures.

Basin Plan Considerations

- 34. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) designates beneficial uses; establishes water quality objectives (WQOs) to protect such uses; contains implementation plans and policies for protecting waters of the subject basins; and incorporates by reference plans and policies adopted by the State Water Resources Control Board (State Water Board). Pursuant to Water Code section 13263, subdivision (a), WDRs are required to implement the Basin Plan.
- 35. Local drainage around the facility is to the Turnback Creek, a tributary of the Tuolumne River. Per the operative Basin Plan (as of the date of this Order), beneficial uses of the Tuolumne River are: municipal and domestic supply; agricultural supply; hydropower generation; water contact recreation; non-contact water recreation; warm and cold freshwater habitat; and wildlife habitat.
- 36. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND) and industrial process supply (PRO).
- 37. The Basin Plan establishes narrative WQOs for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric WQO for total coliform organisms.
- 38. At a minimum, the Basin Plan's narrative WQO for chemical constituents requires waters designated as supporting the MUN beneficial use to meet California Code of Regulations, Title 22 MCLs. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

39. The narrative WQO for toxicity requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant or aquatic life associated with designated beneficial uses.
40. Quantifying a narrative WQO requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative WQO is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numeric limits in order to implement the narrative WQO.
41. In the absence of specific numeric WQO, the Basin Plan methodology is to consider any relevant published criteria to derive appropriate permit limits. General salt tolerance guidelines, such as Water Quality for Agriculture by Ayers and Westcot and similar references, indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 $\mu\text{mhos/cm}$ if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

Antidegradation Analysis

42. State Water Resources Control Board Resolution 68-16, the Policy with Respect to Maintaining High Quality Waters of the State (State Antidegradation Policy) prohibits the Board from authorizing the degradation of high-quality water unless it has been shown that:
 - a. The degradation will not unreasonably affect present and anticipated beneficial uses;
 - b. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - c. The discharger employs BPTC to minimize degradation; and
 - d. The degradation is consistent with the maximum benefit to the people of the state.
43. TCSD has been monitoring groundwater quality at the site since 2008. Existing information is insufficient to allow determination of pre-1968 groundwater quality with certainty. Compliance with the Antidegradation Policy must therefore be based on available local groundwater quality data since 2008.
44. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, chloride) and nitrate as discussed below.

Average Concentrations (mg/L)					
Constituent		TDS	Chloride	Sodium	Nitrate as N
Concentration Protective of Beneficial Uses		500 to 1,500 ²	106 ¹ to 600 ³	69 ¹	10 ⁴
Ranch LAA ⁵	Upgradient Well	226	25	7.9	11
	Downgradient Well	321 - 385	33 - 50	17 - 19	0.8 - 3.2
WWTP Site ⁵	Upgradient Well	141 - 192	2.3 - 4.1	8.5 - 11	0.1 - 0.2
	Downgradient Well	356 - 428	17 - 22	28 - 42	1.2 - 4.6
Unblended Effluent ⁶		721 ⁷	NA	NA	50
Blended Effluent		306 ^{7,8}	NA	NA	1.7 ⁹
1. Lowest agricultural water quality goal. 2. TDS Secondary MCL range: Recommended level = 500; Upper level = 1,000 mg/L; Short-term level = 1,500 mg/L. 3. Secondary MCL range: Recommended level = 250; Upper level = 500 mg/L; Short term level = 600 mg/L 4. Primary MCL. 5. Average from March 2012 through June 2018. (Data from March 2012 through November 2016 were collected quarterly; data from 2017 through 2018 were collected annually.) 6. Effluent average from January 2017 through October 2018. 7. Calculated by multiplying EC and 0.7 8. Average of three monitoring results from 27 February to 1 March 2019. 9. Average of five monitoring results from December 2018 to January 2019 with a range from non-detect to 3.0 mg/L.					

- a. **Salinity (TDS, chloride, and sodium).** Based on a comparison of groundwater data collected at the WWTP and the Ranch LAA sites, average concentrations of TDS, chloride and sodium in the downgradient wells were greater than in the upgradient wells. This indicates that both the wastewater treatment process and land application likely contribute to groundwater degradation for salinity. However, onsite groundwater concentrations of TDS, chloride and sodium have not exceeded numeric limits protective of designated beneficial uses.

Historical use of unlined treatment ponds has caused degradation in underlying groundwater at the WWTP. However, the regular use of such unlined ponds has been curtailed, thus reducing the percolation of effluent to groundwater. All treatment ponds are now only used for emergency purpose. Pond 1 will be lined that would minimize potential salinity impacts to groundwater.

Based on three recent sampling events, the blended effluent from the reservoir had an average TDS concentration of 306 mg/L, which is less than the recommended MCL of 500 mg/L for TDS. However, these sampling events were conducted in the 2019 wet winter when treated wastewater in the reservoir received significant dilution from heavy precipitation and contained

relative low TDS concentrations. Blended effluent salinity may vary with seasons. During the summer, the effluent may have higher salinity due to less dilution from rainfall and supplemental water. Turnback Creek is a seasonal creek and supplemental water may not be available during summer months.

High salinity effluent may cause groundwater degradation for salinity due to reliance on the unlined storage reservoir before land application. In addition, the current amount of supplemental water is greater than the total volume of effluent resulting in better dilution. However, based on the proposed flow limit of 0.35 MGD, less supplemental water may be needed to meet irrigation demand. With less dilution from the supplemental water, wastewater land application could cause groundwater degradation for salinity. TCSD shall determine whether additional source control is feasible and propose a schedule to reduce wastewater salinity. To protect groundwater quality, this Order includes a TDS limit of 500 mg/L as a flow-weighted annual average for the blended effluent to all LAAs. This Order also contains a groundwater TDS limit of 500 mg/L.

- b. **Nitrate.** For nutrients such as nitrate, the potential for degradation depends not only on the quality of the treated effluent, but also the ability of the vadose zone below the effluent disposal ponds to provide an environment conducive of nitrification and denitrification to convert the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. Most of the nitrogen in the process wastewater is present as TKN, which can readily mineralize and convert to nitrate (with some loss via ammonia volatilization) during treatment and land disposal.

The average nitrate nitrogen concentrations in all downgradient monitoring wells are less than the Primary MCL of 10 mg/L for nitrate nitrogen. Recent tests indicated that blended effluent from the reservoir has an average nitrate nitrogen concentration of 1.7 mg/L, which is less than the primary MCL of 10 mg/L for nitrate nitrogen. However, these tests were conducted during the non-irrigation season and effluent had been stored in the reservoir for several months which is favorable for further denitrification. During the irrigation season, blended effluent may have higher nitrate levels due to less retention time in the reservoir, with this condition having the potential to degrade groundwater for nitrogen. In order to reduce unblended effluent nitrate levels, TCSD shall conduct a BPTC evaluation and implementation plan for nitrogen reduction. To protect groundwater quality, this Order does not allow the annual total nitrogen mass loading rate to exceed nitrogen uptake rates for the vegetation in the LAAs. In addition, this Order adopts the Primary MCL of 10 mg/L for nitrate nitrogen as a groundwater limit.

To minimize wastewater impacts to groundwater for TDS and nitrate nitrogen, this Order requires TCSD to submit and implement a *BPTC Evaluation and Implementation Plan for Salinity and Nitrogen Reduction*.

45. Degradation with respect to salinity and nitrate could occur as a result of the discharge. By establishing the effluent nitrogen loading limit and effluent and groundwater TDS limits, the Central Valley Water Board is ensuring that any degradation will not unreasonably affect present and anticipated beneficial uses with respect to TDS and nitrogen. By requiring TCSD submit and implement a *BPTC Evaluation and Implementation Plan for Salinity and Nitrogen Reduction*, the Central Valley Water Board is ensuring that the degradation will not unreasonably affect present and anticipated beneficial uses.
46. TCSD provides treatment and control of the discharge that incorporates:
 - a. SCADA Control System monitoring the WWTP operation;
 - b. Treatment to secondary standards;
 - c. Appropriate biosolids disposal practices;
 - d. An Operation and Maintenance (O&M) manual; and
 - e. The employment of certified wastewater treatment operators.

The Board finds that TCSD's implementation of these practices is considered BPTC for the wastes in the discharge. This Order requires TCSD to maintain these practices consistent with the *State Antidegradation Policy*.

47. Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.
48. This Order is consistent with the Antidegradation Policy since the limited degradation allowed by this Order will not result in water quality less than WQOs or unreasonably affect present and anticipated beneficial uses. The Dischargers will implement BPTC of the wastes in its discharge to minimize degradation that may occur as a result of its discharge, and the limited degradation is of maximum benefit to people of the State.

Water Recycling Regulatory Considerations

49. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organism as indicator organisms. The State Water Board's Division of Drinking Water (DDW), which has primary statewide responsibility for establishing drinking water quality regulations for the benefit of public health, has established statewide criteria in Title 22, section 60301 et seq. (Title 22), for the use of recycled water.
50. On 3 February 2009, the State Water Board adopted Resolution 2009-0011 (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and to reduce greenhouse gas emissions.
51. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, which encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. This resolution requires that municipal wastewater treatment agencies document:
 - a. Efforts to promote new or expanded wastewater recycling opportunities and programs;
 - b. Water conservation measures; and
 - c. Regional wastewater management opportunities and solutions (e.g., regionalization).

The distribution of secondary undisinfected recycled water by TCSD is consistent with the intent of the *Recycled Water Policy* and Central Valley Water Board Resolution R5-2009-0028.

52. In accordance with Title 22, TCSD submitted to DDW an Engineering Report for recycling of undisinfected secondary treated wastewater (per Title 22, § 60301.230) in May 2017. DDW approved the Engineering Report on 8 March 2018.

Other Regulatory Considerations

53. Pursuant to Water Code section 106.3, subdivision (a), it is "the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Although this Order is not necessarily subject to Water Code section 106.3 because it does not revise, adopt or establish a policy, regulation or grant criterion (see § 106.3, subd. (b)), it nevertheless promotes that policy by requiring discharges to meet MCLs designed to protect human health and ensure that water is safe for domestic use.

54. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: “Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.”
 - b. Category B complexity, defined as: “Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.”
55. The wastewater and sewage discharges authorized under this Order are exempt from the prescriptive requirements of California Code of Regulations, title 27 (Title 27) on the grounds that such discharges will comply with applicable plans and policies, and the wastewater does not need to be managed as “hazardous waste” under Title 22, Division 4.6, Chapter 11. (See Title 27, § 20090, subd. (b).) Additionally, the various lined and unlined impoundments described in this Order are not used for the permanent disposal of waste. Remaining unlined ponds at the Facility will not be used for the regular storage of wastewater.
56. The statistical data analysis methods in the USEPA’s 2009 *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order:
57. State Water Board Order 2014-0057-DWQ (Industrial General Permit) prescribes WDRs for stormwater discharges associated with certain industrial activities. Specifically, the Industrial General Permit requires coverage for wastewater treatment facilities with a design flow of 1.0 MGD or more. Because the TCSD WWTP has a design capacity of less than 1.0 MGD, coverage under the Industrial General Permit is not required.
58. On 2 May 2006, the State Water Board adopted Order 2006-0003-DWQ (SSO General Order), prescribing WDRs and reporting requirements for publicly-owned sanitary sewer systems exceeding one mile in length. Because the Tuolumne City collection system exceeds one mile in length, TCSD has enrolled under the SSO General Order.

59. Water Code section 13267(b)(1) states:

In conducting an investigation ... the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2019-0058 (MRP) are necessary to ensure compliance with these waste discharge requirements. The Dischargers own and operate the facilities that discharge the waste subject to this Order.

60. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
61. In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), on 25 June 2018 TCSD adopted a Negative Declaration for the WWTP Improvements project, certifying that the associated project would not have a significant effect on the environment. The Central Valley Water Board, acting as a responsible agency, was consulted during the development of these documents. Compliance with these WDRs will mitigate or avoid any significant impacts to water quality.
62. The U.S. Environmental Protection Agency (USEPA) has promulgated biosolids reuse regulations in 40 C.F.R. part 503 (Standard for the Use or Disposal of Sewage Sludge) (Part 503), which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.
63. The Central Valley Water Board is using 40 C.F.R. part 503 standards as guidelines for this Order. However, the Central Valley Water Board is not the implementing agency for 40 C.F.R. part 503 regulations. The Dischargers may have separate and/or additional compliance, reporting, and permitting responsibilities to the USEPA.

64. Pursuant to Water Code section 13263, subdivision (g), the ability to discharge waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

65. All the above and the supplemental information and details in the attached **Information Sheet**, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
66. The Dischargers and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe WDRs for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
67. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Orders 95-129 and 95-137 are rescinded, pursuant to Water Code Sections 13263 and 13267, the Dischargers (and their agents, successors, and assigns), in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
3. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements.
4. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
5. The Dischargers shall not allow toxic substances to be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.
6. Effective **1 June 2021**, discharge of unblended effluent to diversion LAAs is prohibited.

7. Effective **1 June 2021**, discharge of effluent to the LAAs without a tailwater collection/ runoff control system is prohibited.

B. Flow Limitations

1. Effectively immediately, influent flows to the wastewater treatment plant shall not exceed the following limits:

Flow Measurement	Flow Limit
Total Annual Flow ¹	145 MG
Average Dry Weather Flow ²	0.35 MGD
¹ Total flow for the calendar year. ² Total flow for the months of August through October, inclusive, divided by 92 days.	

C. Effluent Limitations and Mass Loading Limitations

1. Effluent discharged to the effluent storage reservoir and LAAs shall not exceed the following limits:

Constituent	Units	Limit	Basis for Compliance Determination
BOD ₅ ¹	mg/L	30	Monthly Average
BOD ₅ ¹	mg/L	90	Daily Maximum
¹ 5-day biochemical oxygen demand at 20°C.			

2. Effective **1 June 2021**, the annual total nitrogen mass loading for blended effluent to the LAAs shall not exceed vegetation nitrogen uptake rates. Compliance with this requirement shall be determined using published nitrogen uptake rates for the vegetation grown in the LAAs.
3. Effective **1 June 2021**, TDS concentrations of blended effluent from the storage reservoir shall not exceed 500 mg/L as a flow-weighted annual average.

Compliance with these requirements shall be determined as specified in the MRP.

D. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations under this Order.

2. Wastewater treatment, storage, and disposal shall not cause a "pollution" or "nuisance," as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
4. The Dischargers shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Public contact with wastewater at the WWTP and the Ranch shall be prevented through such means as fences, signs, or acceptable alternatives.
7. Objectionable odors shall not be perceivable beyond the limits of the WWTP property at an intensity that creates or threatens to create nuisance conditions.
8. As a means of ensuring compliance with Discharge Specification D.7, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond/reservoir shall not be less than 1.0 mg/L for three consecutive sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, if the DO in any single pond/reservoir is below 1.0 mg/L for any single sampling event, TCSD shall implement daily DO monitoring of that pond/reservoir until the minimum DO concentration is achieved for at least three consecutive days. If the DO in any single pond/reservoir is below 1.0 mg/L for three consecutive monitoring events, TCSD shall report the findings to the Central Valley Water Board in accordance with Section B.1 of the attached Standard Provisions and Reporting Requirements for WDRs dated 1 March 1991 (SPRRs or Standard Provisions), which are incorporated herein. The written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.
9. TCSD shall design, construct, operate, and maintain all ponds and the reservoir sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. The operating freeboard in any pond and reservoir shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, TCSD shall install and maintain in each pond and the reservoir a permanent staff gauge with calibration marks

that clearly show the water level at design capacity and enable determination of available operational freeboard.

10. Until **1 June 2021**, the Ranch shall minimize diversion of unblended effluent to the irrigation fields.
11. The Ranch shall maintain freeboard in the reservoir based on freeboard schedule mutually agreed by the Ranch and TCSD.
12. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
13. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications 9 and 12.
14. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Dischargers shall consult and coordinate with the local Mosquito Abatement TCSD to minimize the potential for mosquito breeding as needed to supplement the above measures.
15. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
16. Wastewater contained in any unlined pond or reservoir shall not have a pH less than 6.0 or greater than 9.0.

E. Groundwater Limitations

Release of waste constituents from any portion of the WWTP shall not cause groundwater to:

1. Contain any of the specified constituents in a concentration greater than the maximum allowable concentration tabulated below. The wells to which these requirements apply are specified in the operative MRP.

Constituent	Units	Numeric WQO Interpretation
TDS ¹	mg/L	500
Nitrate nitrogen ¹	mg/L	10

¹ Applies to all compliance monitoring wells listed in the operative MRP.

2. For all compliance monitoring wells, exceed a total coliform organism level of 2.2 MPN/100 mL over any seven-day period.
3. For all compliance monitoring wells, except as specified in Section E.1, contain constituents in concentrations that exceed either the applicable Primary or Secondary MCLs established in Title 22.
4. For all compliance monitoring wells, except as specified in Section E.1, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

F. Water Recycling Specifications

1. For the purpose of this Order, "use area" means an area with defined boundaries where recycled water is used or discharged.
2. Notwithstanding the following requirements, the production, distribution, and use of recycled water shall conform to the DDW-approved Title 22, section 60323 Engineering Report.
3. The recycled water shall be at least undisinfected secondary recycled water as defined in Title 22, section 60301.
4. Recycled water shall be used in compliance with Title 22, section 60304. Specifically, uses of recycled water shall be limited to those set forth in Title 22, section(s) 60304(a), 60304(b), 60304(c), and 60304(d).
5. Tailwater runoff and spray of recycled water shall not be discharged outside of the use areas.

6. Application rates of recycled water to the use area shall be reasonable and shall consider soil, climate, and plant demand. In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in recycled water and nutrient demand by plants. As a means of discerning compliance with this requirement:
 - a. Crops or landscape vegetation shall be grown on the use areas, and cropping activities shall be sufficient to take up the nitrogen applied, including any fertilizers and manure.
 - b. Hydraulic loading of recycled water and supplemental irrigation water (if any) shall be managed to:
 - i. Provide water only when water is needed and in amounts consistent with that need;
 - ii. Maximize crop nutrient uptake;
 - iii. Maximize breakdown of organic waste constituents in the root zone; and
 - iv. Minimize the percolation of waste constituents below the root zone.

The Central Valley Water Board recognizes that some leaching of salts is necessary to manage salt in the root zone of crops for production. Leaching shall be managed to minimize degradation of groundwater, maintain compliance with the groundwater limitations of this Order, and prevent pollution.
7. No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops that may be eaten raw by humans.
8. Irrigation of the use areas shall occur only when appropriately trained personnel are on duty.
9. The Ranch shall conduct periodic inspections of the recycled water use areas to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Ranch shall temporarily stop recycled water use immediately and implement corrective actions to ensure compliance with this Order.
10. Grazing of milking animals within the use areas is prohibited.
11. Discharge to the use areas shall not be performed during rainfall or when the ground is saturated.

12. Irrigation with recycled water shall be managed to minimize erosion within the use areas.
13. The use areas shall be managed to prevent breeding of mosquitoes or other vectors.
14. Use areas and recycled water impoundments shall be designed, maintained, and operated to comply with the following setback requirements:

Setback Definition	Min. Irrigation Setback (ft.)
Edge of use area to natural surface water conveyances	100 ¹
Edge of use area to domestic water supply well	150
Toe of recycled water impoundment berm to domestic water supply well	150
Edge of use area to residence	100
Edge of use area using spray irrigation to public park, playground, school yard, or similar place of potential public exposure	100
¹ . Proposed in the RWD.	

15. Spray irrigation with recycled water is prohibited when wind speed (including gusts) exceeds 30 mph.
16. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
17. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
18. Public contact with recycled water shall be controlled using fences, signs, and other appropriate means. The Ranch shall maintain perimeter fencing.
19. Use areas that are accessible to the public shall be posted with signs that are visible to the public and no less than four inches high by eight inches wide. Signs shall be placed at all areas of public access and around the perimeter of all use areas and at above-ground portions of recycled water conveyances to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in **Attachment E**, which is attached and forms part of this Order, and shall include the following wording:

“RECYCLED WATER – DO NOT DRINK”

“AGUA DE DESPERDICIO RECLAMADA – NO TOME”

20. All recycling equipment, pumps, piping, valves, and outlets shall be marked to differentiate them from potable water facilities. Quick couplers, if used, shall be different than those used in potable water systems.
21. Recycled water controllers, valves, and similar appurtenances shall be equipped with removable handles or locking mechanisms to prevent public access or tampering.
22. Hose bibs and unlocked valves, if used, shall not be accessible to the public.
23. No physical connection shall exist between recycled water piping and any potable water supply system (including domestic wells), or between recycled water piping and any irrigation well that does not have an approved air gap or reduced pressure principle device.
24. Horizontal and vertical separation between pipelines transporting recycled water and those transporting potable water shall comply with Title 22, section 64572, except to the extent that DDW has specifically approved a variance.
25. No physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water or auxiliary water source system.
26. A public water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of California Code of Regulations, Title 17, sections 7602(a) and 7603(a).
27. All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with Health and Safety Code section 116815.
28. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance with Title 17, section 7605.

G. Solids Disposal Specifications

For the purposes of this Order, “sludge” means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment

processes; “solid waste” refers to grit and screenings generated during preliminary treatment; “residual sludge” means sludge that will not be subject to further treatment at the WWTP; and “biosolids” refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as necessary to ensure optimal plant operation.
2. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTPs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a California Regional Water Quality Control Board (Regional Board) will satisfy this specification.
3. Use of biosolids as a soil amendment shall comply with applicable State Water Board or Regional Board WDRs, except in cases where a local (e.g., county) program has been authorized by the State Water Board or a Regional Board. In most cases, this will mean enrollment under the State Water Board’s Order WQ 2004-12-DWQ (Biosolids General Order). To obtain coverage under the Biosolids General Order, TCSD must file a separate complete Notice of Intent and receive a Notice of Applicability for each biosolids application project.
4. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 C.F.R. part 503. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.
5. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

H. Provisions

1. The following reports shall be submitted pursuant to Water Code section 13267, and shall be prepared as described in Provision H.4:
 - a. By **1 June 2020**, TCSD shall submit and implement a *BPTC Evaluation and Implementation Plan for Salinity and Nitrogen Reduction*.

For salinity reduction, the plan shall address the sources of salinity discharged to the wastewater treatment system and determine whether additional source control is feasible, and propose a schedule to reduce

wastewater salinity. At a minimum, the plan shall meet the following requirements outlined in CWC Section 13263.3(d)(3):

- i. An estimate of all of the sources of pollutants contributing, or potentially contributing, to the loadings of salinity in the treatment plant influent including water supply, water softeners, and other residential, commercial and industrial salinity sources.
- ii. An analysis of the methods that could be used to reduce and/or prevent the discharge of salinity into the facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the facility. The analysis shall also identify sources, or potential sources, not within the ability or authority of the Dischargers to control.
- iii. An estimate of salinity load reductions that may be identified through the methods identified in Water Code section 13263.3(d)(3)(ii).
- iv. A plan for monitoring the results of the salinity pollution prevention program.
- v. A description of the tasks, costs, and time required to investigate and implement various elements in the salinity pollution prevention plan.
- vi. A statement of the TCSD's salinity pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
- vii. A description of the TCSD's existing salinity pollution prevention programs.
- viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.
- ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.
- x. Progress to date in reducing the concentration and/or mass of salinity in the discharge.

- xi. Progress in implementation of the plan shall be reported each year in the Annual Monitoring Report required pursuant to the MRP.

The plan also shall evaluate the treatment process for efficiency of nitrogen removal and propose improvements to reduce effluent total nitrogen concentrations. The report shall provide a proposed timeline for implementing feasible measures to improve effluent quality.

- b. By **1 June 2020**, TCSD shall submit a *Tailwater/Runoff Control Workplan*. The plan shall include locations, depths and any other specifications for the proposed tailwater collection/runoff control ditches and/or berms.
- c. By **1 June 2021**, TCSD shall submit a *Tailwater/Runoff Control Compliance Report* demonstrating that all land application areas have fully functional tailwater/runoff control systems.
- d. By **1 June 2021**, TCSD shall submit a completion report certifying that all effluent conveys to the effluent reservoir and is blended with supplemental water prior to discharge to the LAAs. Also, this report shall certify installation of new effluent flow meters and a sampling location for blended effluent as shown in **Attachment D**.
- e. By **1 June 2022**, TCSD shall submit a *Completion Report* for Collection System Rehabilitation Project. The report shall include materials, lengths and locations of the replacing pipes and leaking test results.
- f. At least **60 days** prior to discharge to the WWTP from any proposed changes described in Finding No.23, TCSD shall submit a *Project Completion Report* that certifies completion of the construction and start-up testing work, and provide a copy of the Final Operation and Maintenance Manual submitted to the Regional Board and State Water Board Division of Financial Assistance. The report shall include as-built drawings of the WWTP changes.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than the Groundwater Limitations of this Order, within **120 days** of the request of the Executive Officer, TCSD shall submit an **Action Workplan** that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system for each waste constituent that exceeds a Groundwater Limitation. The workplan shall contain a preliminary evaluation of each component of the wastewater treatment facility and effluent disposal system and propose a time schedule for completing the comprehensive technical

evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.

3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, TCSD shall notify the Central Valley Water Board by **31 January**.
4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Dischargers shall bear the professional's signature and stamp.
5. TCSD shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, TCSD shall proceed with all work required by the foregoing provisions by the due dates specified.
6. The Dischargers shall comply with MRP, and any revisions thereto. The submittal dates of Dischargers self-monitoring reports shall be no later than the submittal date specified in the MRP.
7. The Dischargers shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Dischargers shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Dischargers shall state the reasons for such noncompliance and provide an estimate of the date when the Dischargers will be in compliance. The Dischargers shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court

orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. The Dischargers shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Dischargers to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Dischargers when the operation is necessary to achieve compliance with the conditions of this Order.
9. The Dischargers shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. TCSD shall employ certified wastewater treatment plant operators in accordance with California Code of Regulations, title 23, division 3, chapter 26.
11. As described in the Standard Provisions, the Dischargers shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
12. In the event that TCSD reports toxic chemical release data to the State Emergency Response Commission (SERC) pursuant to section 313 of the Emergency Planning and Community Right to Know Act (42 U.S.C. § 11023), TCSD shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC.
13. TCSD shall comply with the requirements of SSO General Order and the operative SSO General Order Monitoring and Reporting Program (currently State Water Board Order 2008-0002-EXEC).
14. TCSD shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order.
15. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and ensure compliance with this Order, the Dischargers shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to ensure full compliance with this Order.

16. In the event of any change in control or ownership of the WWTP and the Ranch, the Dischargers must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
17. To assume operation as Dischargers under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
18. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
19. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Dischargers fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

WASTE DISCHARGE REQUIREMENTS ORDER R5-2019-0058
JOHN BAKER, LAURA BAKER, DENNIS BAKER AND ETHEL BAKER
BAKER RANCH
TUOLUMNE CITY SANITARY DIST.
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

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Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order; if the 30th day 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 are available on the Internet (at the address below), and will be provided upon request.

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

I, PATRICK PULUPA, Executive Officer, hereby certify that the foregoing is a full true and correct copy of the Order adopted by the California Regional Water Quality Control Board on 7 June 2019.



PATRICK PULUPA, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2019-0058
FOR
JOHN BAKER, LAURA BAKER, DENNIS BAKER AND ETHEL BAKER
BAKER RANCH
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring influent wastewater, treated effluent, storage ponds/reservoir, supplemental water, land application areas, groundwater, sludge, and water supply. This MRP is issued pursuant to Water Code Section 13267. The Dischargers shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field testing instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency;
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Analytical procedures shall comply with the methods and holding times specified in the following: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA); Test Methods for Evaluating Solid Waste (EPA); Methods for Chemical Analysis of Water and Wastes (EPA); Methods for Determination of Inorganic Substances in Environmental Samples (EPA); Standard Methods for the Examination of Water and Wastewater (APHA/AWWA/WEF); and Soil, Plant and Water Reference Methods for the Western Region (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Dischargers may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

I. Influent Monitoring

Influent flow monitoring shall be performed at the headworks. Influent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Influent Daily Flow	gallons	Continuous Meter	Daily	Monthly
Total Monthly Flow	MG	Calculated	Monthly	Monthly
Average Monthly Flow	MGD	Calculated	Monthly	Monthly
BOD ₅ ¹	mg/L	Grab/Composite ²	Monthly	Monthly
Ammonia	mg/L	Grab/Composite ²	Monthly	Monthly
Electrical Conductivity	µmhos/cm	Grab/Composite ²	Monthly	Monthly

¹ BOD denotes 5-day Biochemical Oxygen Demand.

² Grab/Composite indicates samples may be collected by composite sampler or grab method.

II. Unblended Effluent Monitoring

Effluent samples shall be collected just prior to discharge to the effluent reservoir. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Effluent Daily Flow	gallons	Continuous Meter	Daily	Monthly
Total Monthly Flow	MG	Calculated	Monthly	Monthly
Average Monthly Flow	MGD	Calculated	Monthly	Monthly
BOD ₅	mg/L	Grab/Composite ¹	Monthly	Monthly
Electrical Conductivity	µmhos/cm	Grab/Composite ¹	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab/Composite ¹	Monthly	Monthly
Ammonia	mg/L	Grab/Composite ¹	Monthly	Monthly

¹ Grab/Composite indicates samples may be collected by composite sampler or grab method.

III. Blended Effluent Monitoring

Effective **1 June 2021**, TCSD shall collect samples for blended effluent from the storage reservoir at the proposed second effluent sampling location shown in Attachment D. Blended effluent shall be representative of the volume and nature of the discharge. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Effluent Daily Flow	gallons	Continuous Meter	Daily	Monthly
Total Monthly Flow	MG	Calculated	Monthly	Monthly
Average Monthly Flow	MGD	Calculated	Monthly	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Dissolved Solids	mg/L	Grab/Composite ¹	Monthly	Monthly
Electrical Conductivity	µmhos/cm	Grab/Composite ¹	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab/Composite ¹	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab/Composite ¹	Monthly	Monthly
Standard Minerals ^{2,3}	mg/L	Grab/Composite ¹	Annually	Annually

¹ Grab/Composite indicates samples may be collected by composite sampler or grab method.

² Samples shall be filtered prior to preservation using a 0.45 µ filter.

³ Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, boron, calcium, chloride, magnesium, potassium, sodium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness.

IV. Pond/Effluent Storage Reservoir Monitoring

Each pond (if Pond 1 and 2 are used) and effluent storage reservoir shall be monitored as specified below:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved Oxygen ¹	mg/L	Grab	Weekly	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
pH	Standard	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Berm condition ²	--	Observation	Monthly	Monthly

¹ Samples shall be collected opposite each pond inlet at a depth of one foot.

² Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe.

V. Supplemental Irrigation Water Monitoring

The Dischargers shall monitor the supplemental water prior to entering the effluent reservoir. Monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Supp. Water Diverted to the Reservoir	gallons	Cumulative	Monthly	Monthly
Annual Supp. Water	MG	Calculated	Annually	Annually
Electrical Conductivity	µmhos/cm	Grab	Annually	Annually
Nitrate as Nitrogen	mg/L	Grab	Annually	Annually
Total Kjeldahl Nitrogen	mg/L	Grab	Annually	Annually

VI. Land Application Area Monitoring

The Dischargers shall perform the following routine monitoring and loading calculation for the LAAs.

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Precipitation	0.1 in.	Rain Gauge ¹	Daily	Annually
Blended effluent flow-weighted annual average TDS ³	mg/L	Calculated ²	--	Annually
Nitrogen loading rate ³	lb/ac/year	Calculated ²	--	Annually

¹ Data obtained from the nearest National Weather Service rain gauge is acceptable.

² Using the method specified in the Reporting Section of this MRP.

³ Effective 1 June 2021.

VII. Groundwater Monitoring

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the compliance monitoring wells as specified below:

TP-3, TP-4, DG-1 and DG-2

Prior to sampling, depth to groundwater elevations shall be measure and the wells shall be purged at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling and Reporting Frequency</u>
Depth to Groundwater	0.01 feet	Measurement	Semi-annually
Groundwater Elevation ¹	0.01 feet	Calculated	Semi-annually
Gradient	feet/feet	Calculated	Semi-annually
Gradient Direction	Degrees	Calculated	Semi-annually
Electrical Conductivity	µmhos/cm	Grab	Semi-annually
Total Dissolved Solids	mg/L	Grab	Semi-annually
Nitrate as Nitrogen	mg/L	Grab	Semi-annually
Total Kjeldahl Nitrogen	mg/L	Grab	Semi-annually
pH	pH units	Grab	Semi-annually
Total Coliform Organisms	MPN/100 mL	Grab	Semi-annually
Standard Minerals ^{2,3}	mg/L	Grab	Annually

¹ Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation.

- ² Samples shall be filtered prior to preservation using a 0.45 u filter.
- ³ Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, aluminum, boron, calcium, chloride, magnesium, potassium, sodium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness.

VIII. Sludge Monitoring

A composite sample of digested sludge shall be collected when sludge is removed from the wastewater treatment system for disposal in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and analyzed for cadmium, copper, nickel, chromium, lead, and zinc.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

IX. Water Supply Monitoring

Water supply monitoring shall include at least the following for each water source used during the previous year.

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>
Total Dissolved Solids	mg/L	Annually
pH	Std. Unit	Annually
Specific Conductivity	µmhos/cm	Annually
Standard Minerals ¹	mg/L	Annually

¹ Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, boron, calcium, magnesium, sodium, potassium, chloride, nitrogen, sulfate, iron, manganese, total alkalinity (including alkalinity series), and hardness as CaCO₃.

X. REPORTING

All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to:

centralvalleyfresno@waterboards.ca.gov

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
1685 "E" Street
Fresno, California 93706-2007

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any correspondence used to transmit documents to this office:

Baker Ranch, Tuolumne City Sanitary District, Wastewater Treatment Plant, Tuolumne County		
Program: Non-15 Compliance	Order: R5-2019-0058	CIWQS Place ID: 266720

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of the WDRs and this MRP during the reporting period and actions taken or planned for correcting each violation. If the Dischargers have previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the Standard Provisions and General Reporting Requirements, the transmittal letter shall contain a statement by the Dischargers or the Dischargers' authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

In reporting monitoring data, the Dischargers shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Central Valley Regional Water Board.

In addition to the requirements of Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

All monitoring reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Regional Board on the **1st day of the 2nd month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

- a. Results of influent, effluent, supplemental water, and pond/reservoir monitoring;
- b. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
- c. If requested by staff, copies of laboratory analytical report(s), and
- d. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Semiannual Monitoring Reports

The Dischargers shall establish a semiannual sampling schedule for groundwater monitoring such that samples are obtained approximately every six months. Semi-Annual Monitoring Reports shall be submitted to the Central Valley Water Board by the **1st day of February and August**. The Semi-Annual Monitoring Reports shall include the following:

1. Results of groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum, and
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

The Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Monitoring Report shall include the following:

1. The results from annual monitoring of the effluent, supplemental water, land application area, groundwater, sludge and water supply;
2. The maximum monthly influent flow for the year, average dry weather influent flow for the year, total annual influent for the year; and a comparison of these results to the flow limitations of this Order;
3. Calculated blended effluent flow-weighted annual average TDS concentration and nitrogen average loading rate, and a comparison of these results to the effluent limitations of this Order;
 - a) **Effective 1 June 2021**, the flow-weighted annual average TDS concentration for blended effluent shall be calculated using the following formula:

$$C_a = \frac{\sum_1^{12} [(C_{P_i} \times V_{P_i})]}{\sum_1^{12} (V_{P_i})}$$

- Where
- | | | |
|----------|---|---|
| C_a | = | Flow-weighted annual average TDS concentration (mg/L) |
| i | = | The number of the month (e.g., January = 1, February = 2, etc.) |
| C_{pi} | = | Blended effluent TDS concentration for calendar month i in mg/L |
| V_{pi} | = | Volume of blended effluent applied to the LAAs during calendar month i in million gallons |

- b) **Effective 1 June 2021**, the annual total nitrogen mass loading for blended effluent to each LAA shall be calculated using the following formula:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i \cdot V_i) + M_x)}{A}$$

- Where
- M = Mass of total nitrogen applied to LAA in lb/ac/year
 - i = The number of the month (e.g., January = 1, February = 2, etc.)
 - C_i = Blended effluent monthly average concentration of total nitrogen for month i in mg/L
 - V_i = Volume of blended effluent applied to the LAA during calendar month i in million gallons
 - A = Area of the LAA in acres
 - M_x = Nitrogen mass from other sources (e.g., fertilizer and compost) in pounds
 - 8.34 = Unit conversion factor

Compliance with this requirement shall be determined using published nitrogen uptake rates for the vegetation grown in the LAAs.

4. Progress in reducing salinity and nitrate;
5. A digital database (e.g., Microsoft Excel workbooks) of historic influent, pond, effluent, water supply, supplemental irrigation water, groundwater, and sludge/biosolids monitoring to date;
6. An evaluation of the performance of the facility, including discussion of capacity issues, infiltration and inflow (I/I) rates, sludge layer thickness, nuisance conditions, and a forecast of the flows anticipated in the next year;
7. If the flow limit was exceeded during the previous year, then the Dischargers shall (a) explain the nature of the violations, and (b) provide specific actions and a proposed schedule for maintaining compliance with the flow limit in the upcoming year;
8. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;

9. Summary of information on the disposal of sludge as described in the "Sludge Monitoring" section. If applicable, describe the volume of sludge removed during the year and the location that it was taken to, and
10. A copy of the certification for each certified wastewater treatment plant operator working at the facility and a statement about whether the Tuolumne City Sanitary District is in compliance with Title 23, CCR, Division 3, Chapter 26.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Dischargers have previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Dischargers, or the Dischargers' authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Dischargers shall implement the above monitoring program as of the date of this Order.

I, PATRICK PULUPA, Executive Officer, hereby certify that the foregoing is a full true and correct copy of a Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region on 7 June 2019.



PATRICK PULUPA, Executive Officer

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2019-0058
JOHN BAKER, LAURA BAKER, DENNIS BAKER AND ETHEL BAKER
BAKER RANCH
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

Background

The wastewater treatment and disposal facilities consist of headworks, an aeration basin with two integral clarifiers, a storage lagoon, a sludge lagoon, emergency Ponds 1 and 2, an effluent storage reservoir (Grinding Rock Reservoir) and land application areas (LAAs) at Baker Ranch.

Waste Discharge Requirements (WDRs) Order 95-129 prescribes requirements for the Wastewater Treatment Plant (WWTP). Land application of undisinfected secondary treated wastewater at the privately-owned Baker Ranch is regulated under WDRs Order 95-137. Tuolumne City Sanitary District (TCSD) owns and operates the WWTP; and John Baker, Laura Baker, Dennis Baker and Ethel Baker own the Ranch. This Order consolidates the two existing WDRs orders into a single updated order. WDRs Order 95-129 contains a limit of 0.34 million gallons per day (MGD) as a monthly average dry weather discharge flow limit.

Changes in Discharge

- TCSD proposed to discontinue diverting unblended effluent directly to a portion of LAAs to reduce potential threat to groundwater quality from effluent with high salinity and nitrate concentrations. All effluent will be conveyed to the Grinding Rock Reservoir for blending with supplemental water and for further denitrification in the reservoir before distribution to all LAAs.
- TCSD proposed to install a LAA tailwater collection/runoff control system in 2020-2021 when SRF grant funding is available.
- In order to monitor the quality and volume of blended effluent discharged to the LAAs, two flow meters and a second effluent sampling station will be setup at the locations shown in Attachment D.

Depending on grant funding, potential near-term capital improvements at the WWTP may include some or all the following alternatives:

- a. Supervisory Control and Data Acquisition (SCADA)/Security/Control System Upgrades
- b. Clarifier Pumps Replacement

This project will replace the existing air lift pumps with a conventional suction pump to provide operational control of return activated sludge and waste activated sludge rates.

- c. Sludge Lagoon Aeration & Mixing

This project will replace the existing brush aerators with floating aspirating aerators and add a solar mixer to improve mixing within the lagoon and energy efficiency.

- d. Lining Storage Pond 1 with high density polyethylene (HDPE) or equivalent liner material
- e. Miscellaneous WWTP Site Improvements

This project includes process piping, site paving and lighting improvements within the WWTP.

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Board's rescission of prior waste discharge requirements and monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

CV-SALTS Regulatory Considerations

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. This Order may be amended or modified to incorporate any newly-applicable requirements.

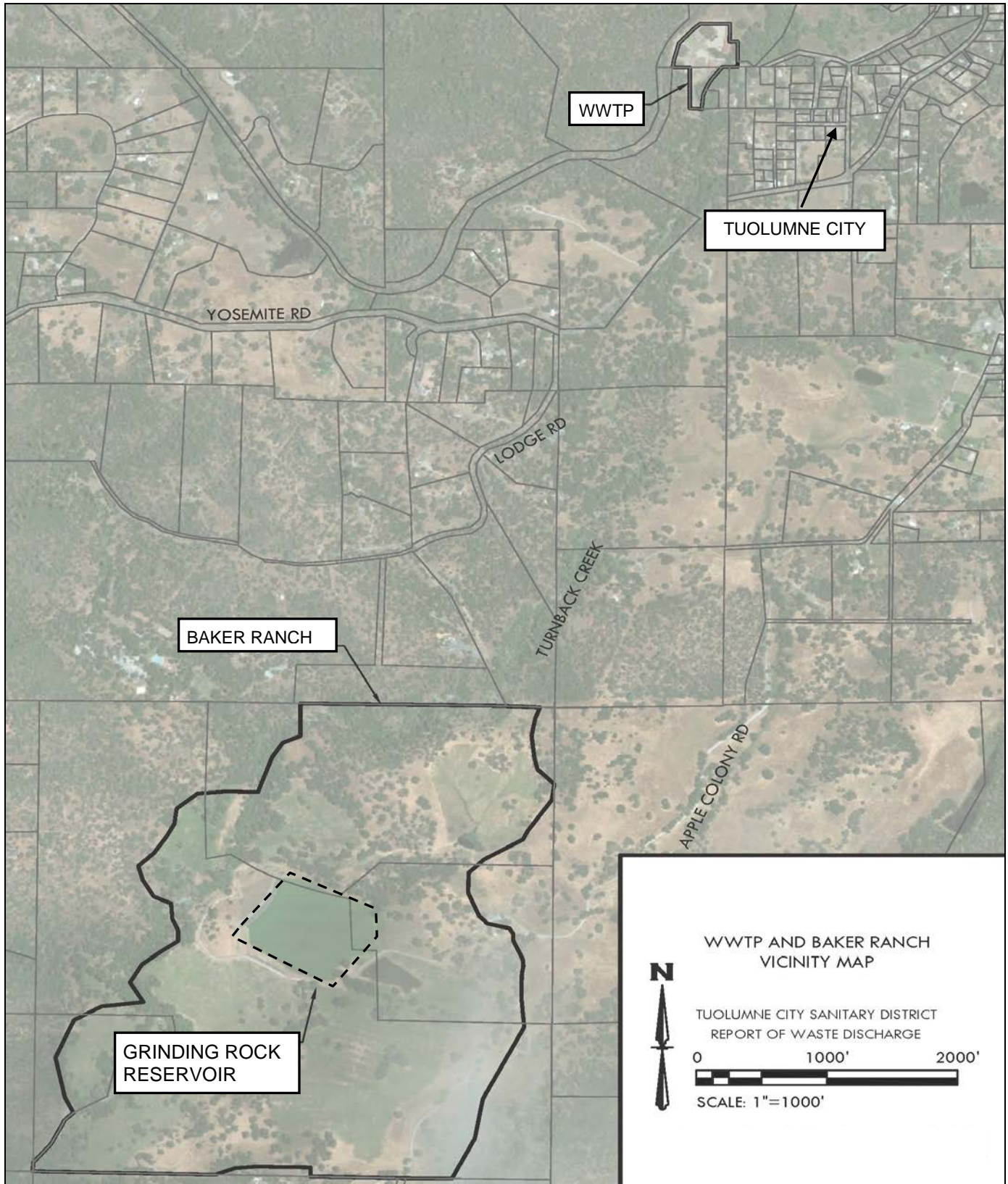
Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans and are intended to assure conformance with them. It may be appropriate to reopen the Order if new technical information is received or if applicable laws and regulations change.

Discharge Limitations and Provisions

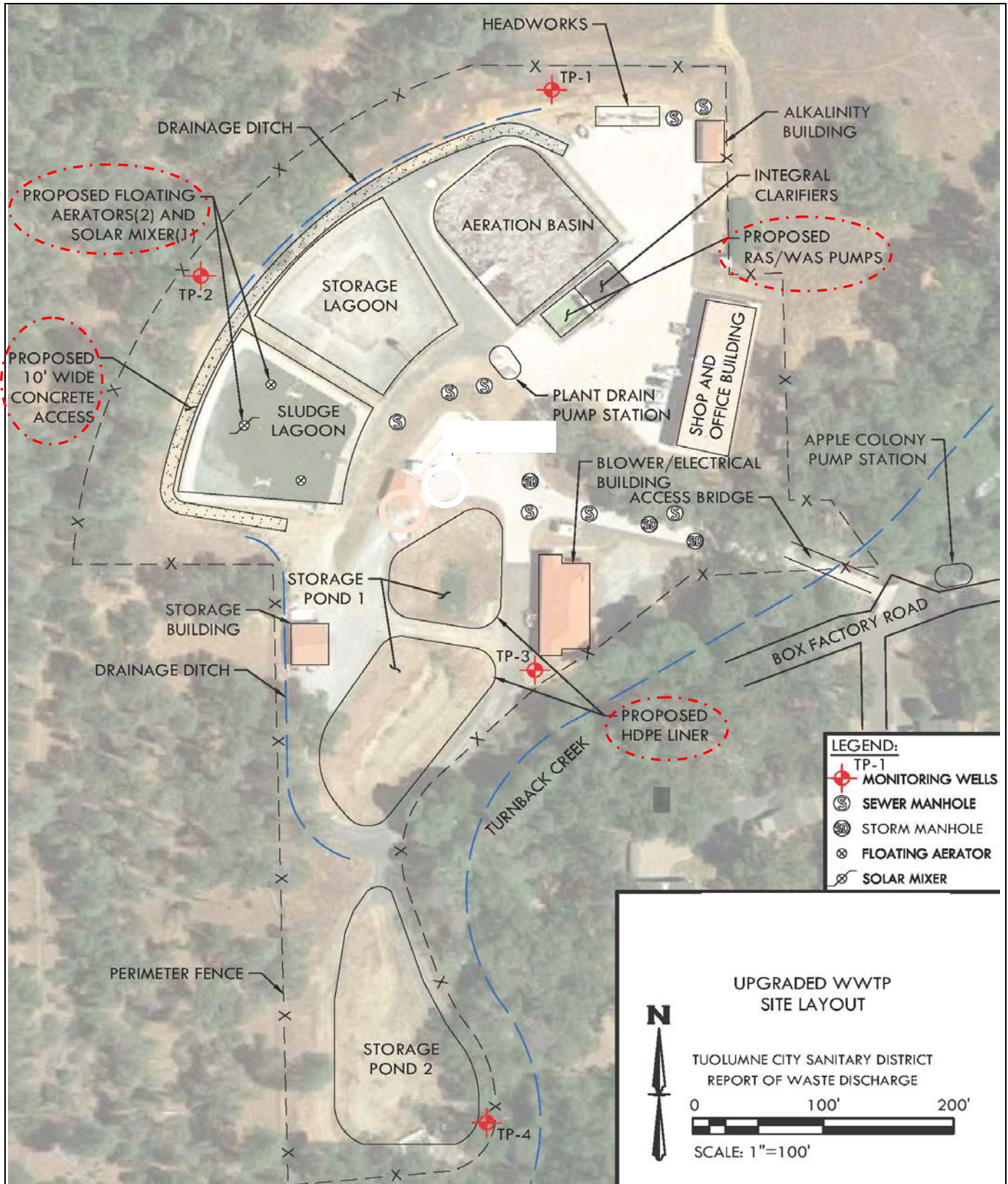
This Order contains flow limits to the wastewater treatment facility. This Order also establishes effluent limitations for BOD, TDS, and nitrate as nitrogen loading rate.

The Provisions section of this Order requires submittal of technical and monitoring reports by the specified dates.



Drawing Reference:
Report of Waste Discharge,
January 2018

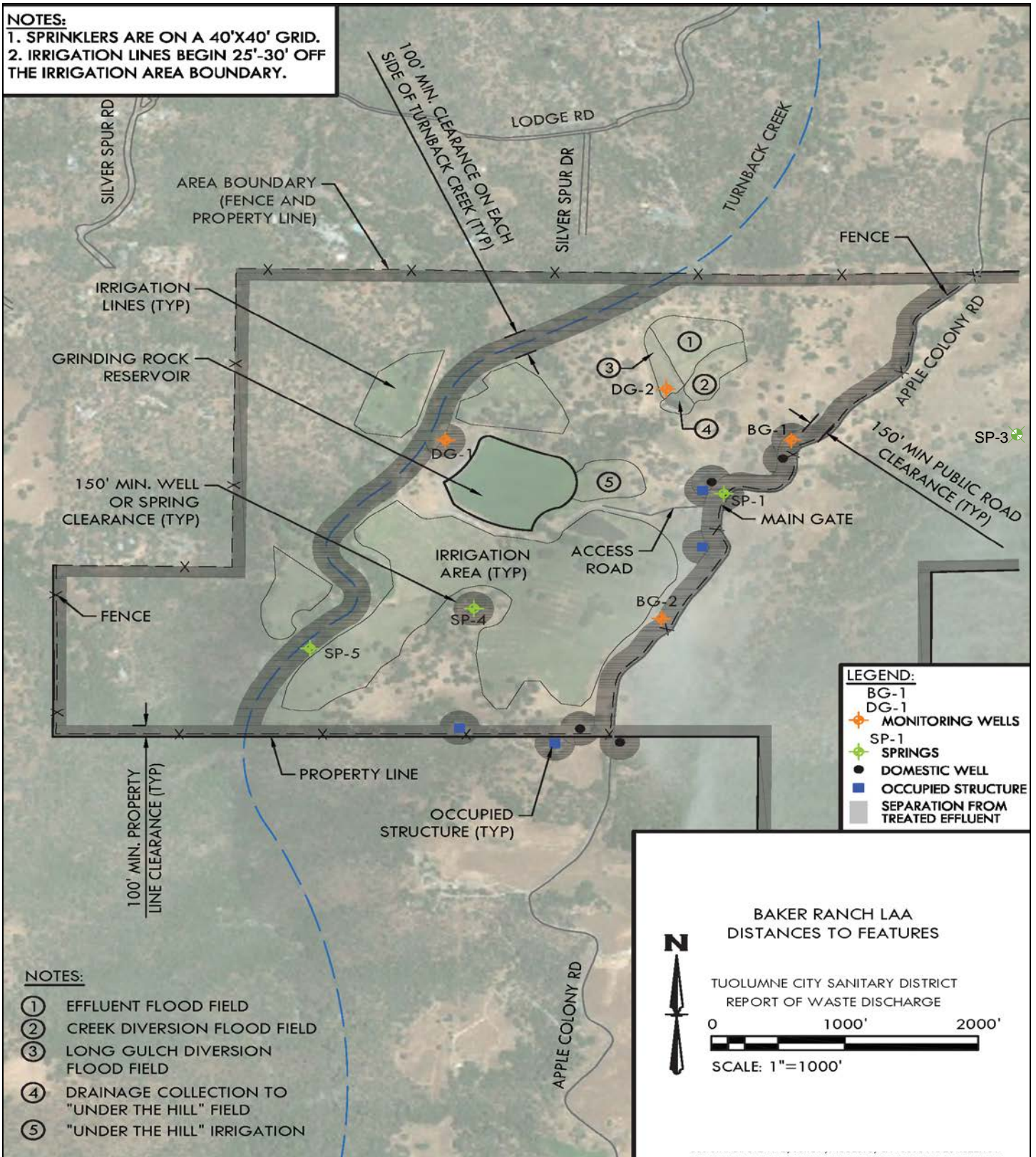
LOCATION MAP
BAKER RANCH
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY



Drawing Reference:
Report of Waste Discharge,
January 2018

WWTP SITE PLAN
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

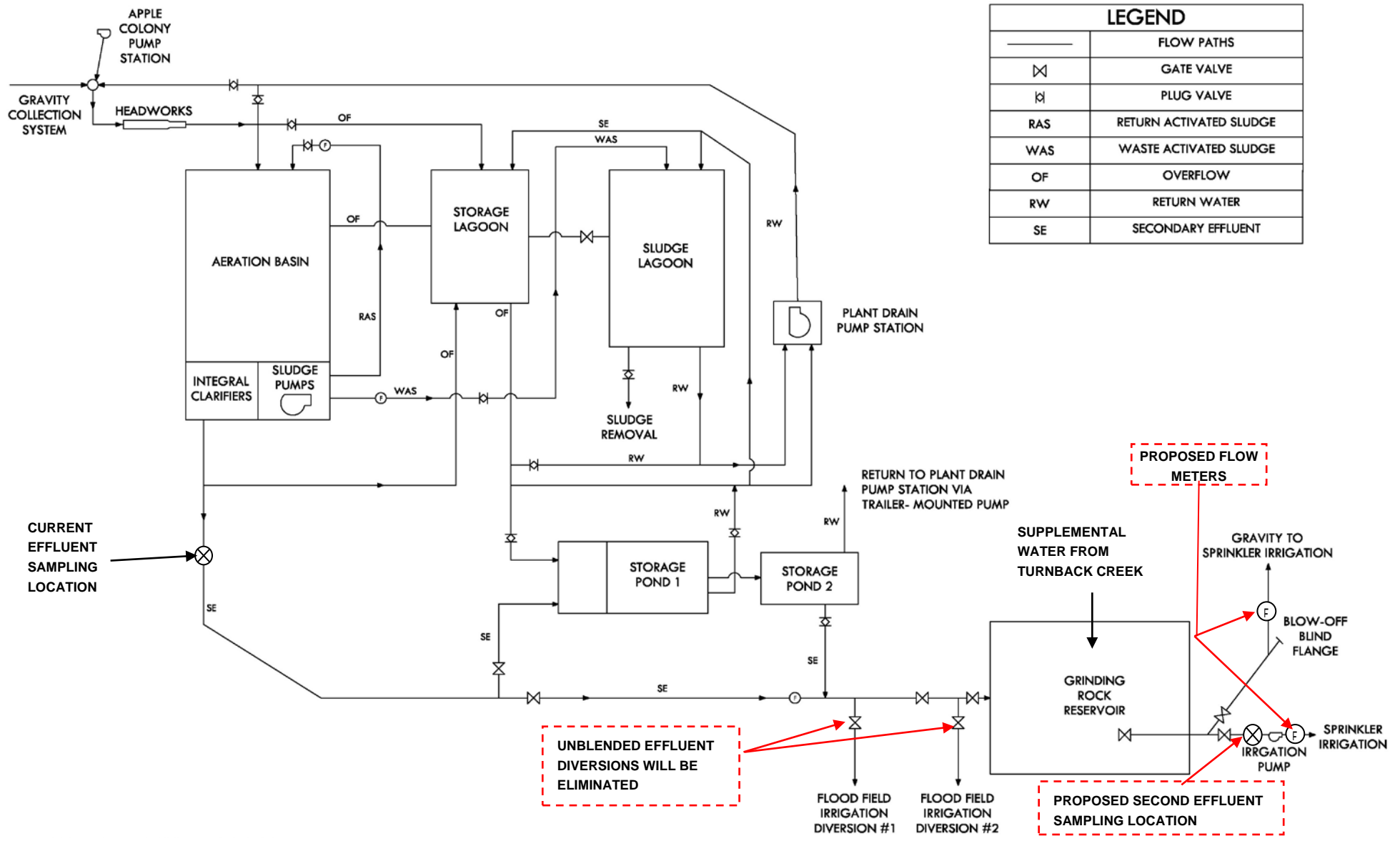
NOTES:
 1. SPRINKLERS ARE ON A 40'X40' GRID.
 2. IRRIGATION LINES BEGIN 25'-30' OFF THE IRRIGATION AREA BOUNDARY.



- NOTES:**
- ① EFFLUENT FLOOD FIELD
 - ② CREEK DIVERSION FLOOD FIELD
 - ③ LONG GULCH DIVERSION FLOOD FIELD
 - ④ DRAINAGE COLLECTION TO "UNDER THE HILL" FIELD
 - ⑤ "UNDER THE HILL" IRRIGATION

Drawing Reference:
 Report of Waste Discharge,
 January 2018

LAND APPLICATION AREA SITE PLAN
 BAKER RANCH
 TUOLUMNE COUNTY



DRAWING REFERENCE:
REPORT OF WASTE DISCHARGE, JANUARY 2018

PROCESS SCHEMATIC
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY



Drawing Reference:
TITLE 22, CALIFORNIA CODE
OF REGULATIONS

RECYCLED WATER SYMBOL
BAKER RANCH
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
TUOLUMNE COUNTY

NO SCALE