CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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ORDER R5-2015-XXXX
NPDES NO. CA0081213

WASTE DISCHARGE REQUIREMENTS FOR THE BEAR VALLEY COMMUNITY SERVICES DISTRICT AND BEAR VALLEY SPRINGS ASSOCIATION WASTEWATER TREATMENT FACILITY KERN COUNTY

The following Discharger is subject to waste discharge requirements (WDR's) set forth in this Order:

Table 1. Discharger Information

Discharger	Bear Valley Community Services District and Bear Valley Springs Association
Name of Facility	Bear Valley Community Services District Wastewater Treatment Facility
Facility Location	Section 9, T32S, R31E, MDB&M
	Tehachapi, California 93561
	Kern County

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Disinfected Tertiary-Treated Domestic Wastewater	35º 10' 01"	118º 39' 53"	Sycamore Creek
002	Disinfected Tertiary-Treated Domestic Wastewater	35º 09' 55"	118º 39' 24"	Groundwater underlying the recycled water Use Area

Table 3. Administrative Information

This Order was adopted on:	**<Adoption Date>**
This Order shall become effective on:	**<Effective Date>**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**<180 days prior to the Order expiration date >**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Minor Discharge**

I, Pamela Creedon, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **[ADOPTION DATE]**.

_____
PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

Information describing the Bear Valley Community Services District, Wastewater Treatment Facility (Facility) is summarized in Table F-1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application. The Facility is owned by Bear Valley Community Services District. Bear Valley Community Services District also owns the Bear Valley Oak Tree Country Club golf course where recycled water from the Facility is discharged to. However, the golf course is managed by Bear Valley Springs Association. Therefore, the Bear Valley Community Services District and Bear Valley Springs Association are hereinafter jointly referred to as Discharger.

II. FINDINGS

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

A. Legal Authorities. This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code; commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.

B. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Monitoring and Reporting. 40 C.F.R. 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), *"In conducting an investigation specified in subdivision (a), 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, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report 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."

Bear Valley Community Services District owns and operates the Facility subject to this Order and Bear Valley Springs Association operates the recycled water Use Area subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

E. Notification of Interested Parties. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

F. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

G. Recycled Water Specifications. Bear Valley Springs Association (BVSA) is responsible for implementing and complying with the recycled water specifications listed in section IV.C.2-22 of this Order when using recycled water for irrigation of the Bear Valley Oak Tree Country Club golf course. All limitations, prohibitions, and provisions included in this Order related to the Facility and its discharge are applicable to the Bear Valley Community Services District (Bear Valley CSD).

THEREFORE, IT IS HEREBY ORDERED that Order R5-2008-0121 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II, in a manner different from that described in this Order is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

E. Discharge of waste classified as 'hazardous' as defined in Title 23, California Code of Regulations (CCR), Section 2521(a), et seq., is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Locations EFF-001A and EFF-001B as described in the Monitoring and Reporting Program, Attachment E:

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

Table 4. Final Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5) [1]	mg/L	10	15	20	--	--
	lbs/day	21	31	42	--	--
Total Suspended Solids [1]	mg/L	10	15	20	--	--
	lbs/day	21	31	42	--	--
pH [1]	standard units	--	--	--	6.5	8.3
Non-Conventional Pollutants						
Ammonia, un-ionized (as N) [2]	mg/L	0.015	0.025	--	--	--
Boron [3]	mg/L	1.0	--	--	--	--
Chloride [3]	mg/L	175	--	--	--	--

[1] Compliance to be measured at Monitoring Location EFF-001A.
[2] Compliance to be measured at Monitoring Location EFF-001A, unless otherwise approved by the Executive Officer. See Table E-3, section IV.A.1. of the Monitoring and Reporting Program (Attachment E).
[3] Compliance to be measured at Monitoring Location EFF-001B.

b. **Percent Removal.** The average monthly percent removal of BOD_5 and total suspended solids (TSS) shall not be less than 85 percent. Compliance to be measured at Monitoring Location EFF-001A.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. 70%, minimum for any one bioassay.
ii. 90%, median for any three consecutive bioassays.

Compliance to be measured at Monitoring Location EFF-001B.

d. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

i. 0.011 mg/L, as a 4-day average.
ii. 0.019 mg/L, as a 1-hour average.

Compliance to be measured at Monitoring Location EFF-001B.

e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
ii. 23 MPN/100 mL, more than once in any 30-day period.
iii. 240 MPN/10 mL, at any time.

Compliance to be measured at Monitoring Location EFF-001A.

f. **Electrical Conductivity.** The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources. Compliance to be measured at Monitoring Location EFF-001B.

g. **Monthly Average Daily Dry Weather Flow.** The monthly average daily dry weather discharge flow (May through October) shall not exceed 0.25 million gallons per day (mgd). Compliance to be measured at Monitoring Location EFF-001A.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Discharge Point 002

1. The Discharger shall maintain compliance with the following limitations at Discharge Point 002, with compliance measured at Monitoring Locations EFF-002A and EFF-002B as described in the attached Monitoring and Reporting Program (MRP). For the purpose of this Order, “Use Area" means the Bear Valley Oak Tree Country Club golf course and landscape irrigation around the Facility where recycled water is used.

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 5:

Table 5. Recycling Discharge Specifications – Discharge Point 002

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5) [1]	mg/L	10	15	20	--	--
Total Suspended Solids [1]	mg/L	10	15	20	--	--
pH [1]	standard units	--	--	--	6.5	8.5
Non-Conventional Pollutants						
Boron [2]	mg/L	1.0	--	--	--	--
Chloride [2]	mg/L	175	--	--	--	--

[1] Compliance to be measured at Monitoring Location EFF-002A.
[2] Compliance to be measured at Monitoring Location EFF-002B.

b. **Percent Removal:** The average monthly percent removal of BOD_5 and total suspended solids (TSS) shall not be less than 85 percent. Compliance to be measured at Monitoring Location EFF-002A.

c. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median.
ii. 23 MPN/100 mL, more than once in any 30-day period.
iii. 240 MPN/10 mL, at any time.

Compliance to be measured at Monitoring Location EFF-002A.

d. **Electrical Conductivity.** The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical

conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent. When source water is from more than one source, the electrical conductivity shall be a flow-weighted average of all sources. Compliance to be measured at Monitoring Location EFF-002B.

e. **Monthly Average Daily Dry Weather Flow.** The monthly average daily dry weather discharge flow shall not exceed 0.25 mgd. Compliance to be measured at Monitoring Location EFF-002A.

2. Notwithstanding the following requirements, the production, distribution, and use of recycled water shall conform to an Engineering Report prepared pursuant to Title 22, section 60323 and approved by the State Water Resources Control Board (State Water Board), Division of Drinking Water (Division of Drinking Water).

3. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Division of Drinking Water recycling criteria, CCR, Title 22, division 4, chapter 3, or equivalent.

4. Use of recycled water shall comply with the terms and conditions of the most current Title 22 regulations.

5. The recycled water shall be at least disinfected tertiary recycled water as defined in Title 22, section 60301.

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. Landscape vegetation shall be grown on the Use Area and landscaping activities shall be sufficient to take up the nitrogen applied to the Use Area, including any fertilizers and manure.

   b. Hydraulic loading of recycled water and supplemental irrigation water shall be managed to:

      i. Provide water only when water is needed and in amounts consistent with that need;

      ii. Maximize landscape vegetation 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 landscape vegetation. Leaching shall be managed to minimize degradation of groundwater, maintain compliance with groundwater limitations of this Order, and prevent pollution.

7. The Discharger shall conduct periodic inspections of the Use Area to determine compliance with the requirements of this Order. If an inspection reveals noncompliance, or threat of noncompliance, with the requirements of this order, the Discharger shall immediately implement corrective actions. If corrective actions cannot be implemented immediately, then the Discharger shall cease recycled water use in the Use Area where the noncompliance is occurring until corrective actions can be implemented.

8. Irrigation of the recycled water Use Area with recycled water shall only occur between dusk and dawn and when weather conditions and agronomic needs dictate. Hand watering of the golf course, with a hose, using recycled water in conjunction with typical irrigation and irrigation system testing activities may be permitted during the day, provided that applications are supervised by appropriate golf course personnel and all golfers, pedestrians, and other members of the general public are precluded from entering irrigated areas until all applied recycled water has infiltrated the soil.
9. The irrigation with recycled water shall be managed to minimize erosion within the Use Area.
10. Any irrigation water runoff shall be confined to the recycled water Use Area.
11. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, or come into contact with drinking water fountains.
12. The perimeter of areas irrigated with recycled water shall be graded to prevent ponding along public roads or other public areas.
13. Recycled water shall not be applied to the Use Area during measurable rainfall or when the ground is saturated.
14. The Use Area shall be managed to prevent breeding of mosquitoes or other vectors.
15. Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well unless all of the following conditions have been met and the Division of Drinking Water has approved a variance pursuant to Title 22, section 60310(a):
    a. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface.
    b. The well contains an annular seal that extends from the surface into the aquitard.
    c. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.
    d. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.
    e. The owner of the well approves of the elimination of the buffer zone requirement.
16. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.
17. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to Title 22, CCR, Section 60310. Quick couplers and sprinkler heads, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs that the public could use shall be eliminated.
18. 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 Division of Drinking Water has specifically approved a variance.
19. Potable water supply piping and recycled water piping shall not have any cross-connections. Supplementing recycled water with potable water shall not be

allowed except through an air-gap separation, or if approved by the Division of Drinking Water, a reduced pressure principle backflow device.

20. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance Title 17, section 7605.

21. Workers shall be informed of the potential health hazards involved with contact or ingestion of recycled water and shall be educated regarding proper hygienic procedures to ensure personal and public safety.

22. Sections of the Use Area 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 H, and shall include the following wording:

"RECYCLED WATER – DO NOT DRINK"
"AGUA DE DESPERDICIO RECLAMADA – NO TOME"

Alternative language will be considered by the Executive Officer if approved by Division of Drinking Water.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in Sycamore Creek:

1. **Un-ionized Ammonia.** Un-ionized ammonia to be present in amounts that adversely affect beneficial uses nor to be present in excess of 0.025 mg/L (as N).

2. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

3. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

4. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.

5. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.

6. **Dissolved Oxygen:**

   a. The monthly median of the daily mean dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass at centroid of flow;

   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

   c. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.

7. **Floating Material.** Floating material, including but not limited to solids, liquids, foams, and scum, to be present in amounts that cause nuisance or adversely affect beneficial uses.
8. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
9. **pH.** The pH to be depressed below 6.5, nor raised above 8.3.
10. **Pesticides:**
    a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses; nor
    b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
11. **Radioactivity:**
    a. Radionuclides to be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
12. **Suspended Sediment.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
13. **Settleable Material.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
14. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
15. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to domestic or municipal water supplies.
16. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at RSW-001 and RSW-002.
17. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
18. **Turbidity.** Turbidity to increase more than:
    a. 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs;
    b. 20 percent where natural turbidity is between 5 and 50 NTUs;
    c. 10 NTUs where natural turbidity is between 50 and 100 NTUs; nor
    d. 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

Release of waste constituents associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified

below or in excess of natural background quality for the specified constituents, whichever is greater:

1. Nitrate (as N) of 10 mg/L.
2. Total coliform organisms equal to or greater than 2.2 MPN/100 mL over any 7-day period.
3. For constituents identified in Title 22 of the California Code of Regulations, the maximum contaminate levels quantified therein.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

   a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.

   b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;

      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

      iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

      iv. a material change in the character, location, or volume of discharge.

      The causes for modification include:

      i. *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

      ii. *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

      iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

      The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

   i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

   ii. Controls any pollutant limited in the Order.

   The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

   i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The

adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 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 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.

l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein 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. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall 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.

To assume operation 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, 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 and certification requirements in the federal Standard Provisions (Attachment D, section V.B) 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. Transfer shall be approved or disapproved in writing by the Executive Officer.

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum effluent limitation, instantaneous maximum effluent limitation, maximum daily effluent limitation, hourly average effluent limitation, acute toxicity effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. 122.62, including, but not limited to:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a numeric chronic toxicity limitation, new acute toxicity limitations, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

d. **Site-Specific Ammonia Criteria.** If it is determined that the receiving water conditions warrant more stringent ammonia WQBELs to protect the beneficial uses applicable to Sycamore Creek, this Order may be reopened and modified effluent limitations added for ammonia.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in MRP (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE work plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for

the Discharger to develop and submit a TRE work plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is **> 1 TUc** (where TUc = 100/NOEC) (NOEC = No Observed Effect Concentration). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14-days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of four consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(b) If the source(s) of the toxicity is easily identified (e.g., temporary facility upset), the Discharger shall make necessary corrections to the Facility and shall continue accelerated monitoring until four consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

(1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

(2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Central Valley Water Board a TRE work plan for approval by the Executive Officer. The TRE work plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE work plan must be developed in accordance with U.S. EPA guidance[1].

b. **Priority Pollutant Evaluation.** After completing the priority pollutant and other constituents of concern monitoring required in the Monitoring and Reporting Program (Attachment E, section IX.D.), the Discharger shall prepare a monitoring plan for the constituents detected in the effluent and receiving water. The monitoring plan shall be submitted for Executive Officer approval **within 90 days** from when the priority pollutants and other constituents of concern samples are taken.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare and implement a salinity evaluation and minimization plan to identify and address sources of salinity to and from the Facility, including, but not limited to, 1) the chemicals used for drinking water and wastewater treatment, 2) the contribution of salinity from sewer users (e.g., the use of water softeners in the community), and 3) the source water (i.e., potable water supply wells). The plan shall be completed and submitted to the Central Valley Water Board by **<180 days from the Order effective date>** for the approval by the Executive Officer. The Discharger shall provide annual reports demonstrating reasonable progress in the reduction/minimization of salinity in its discharge to Sycamore Creek. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, section X.D.1.)

4. Construction, Operation and Maintenance Specifications

a. **Filtration System Operating Specifications.**

i. When coagulation is used, the Discharger shall operate the treatment system to ensure the turbidity measured at Monitoring Location FIL-002, as described in the MRP (Attachment E), shall not exceed:

(a) 2 NTUs, as a 24-hour average;
(b) 5 NTUs, more than 5 % of the time within a 24-hour period; and
(c) 10 NTUs, at any time.

ii. When coagulation is not used, the Discharger shall operate the treatment system to ensure:

(a) The turbidity of the influent to the filtration unit measured at Monitoring Location FIL-001, as described in the MRP (Attachment E), shall not exceed 5 NTUs for more than 15 minutes and never exceed 10 NTUs; and

(b) The filter effluent turbidity measured at Monitoring location FIL-002, as described in the MRP (Attachment E), shall not exceed 2 NTUs at any time.

[1] See the Fact Sheet (Attachment F, section VI.B.2.a.) for a list of USEPA guidance documents that must be considered in development of the TRE work plan.

b. **Storage Pond Operating Requirements.**

i. The Facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

(a) Weeds shall be minimized.

(b) Dead algae, vegetation, and debris shall not accumulate on the water surface.

iv. The Discharger shall operate and maintain the storage pond sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in the pond shall never be less than two feet (measured vertically from the lowest possible point of overflow).

v. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas (or property owned by the Discharger).

vi. The dissolved oxygen content in the upper zone (1 foot) of wastewater in the effluent storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the dissolved oxygen is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Central Valley Water Board and propose a remedial approach to resolve the low dissolved oxygen results **within 30 days**.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. Part 503.

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Quality Control Board will satisfy these specifications.

Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations in section V.B. of this Order. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations included in section V.B. of this Order.

ii. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. Part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 C.F.R. Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 C.F.R. Part 503 whether or not they have been incorporated into this Order.

iii. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

iv. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. EPA Regional Administrator at least **90 days** in advance of the change.

v. **By <180 days of the permit effective date>,** the Discharger shall submit a biosolids use or disposal plan to the Central Valley Water Board. The plan shall describe at a minimum:

(a) Sources and amounts of biosolids generated annually.

(b) Location(s) of on-site storage and description of the containment area and containment features.

(c) Plans for ultimate disposal. For landfill disposal, include the present classification of the landfill; and the name and location of the landfill. For land application or composting, identify the name and location of the facility/area to which the biosolids are hauled to or applied.

b. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003-DWQ and any future revisions thereto. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the general WDRs. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation and maintenance of its wastewater collection system.

6. Other Special Provisions

a. **Special Provisions for Bear Valley Springs Association**. Notwithtanding the identification of Discharger in section I of this Order, Bear Valley Springs Association shall only be subject to the following components of this Order:

i. Discharge Prohibitions III.A. and III.C.

ii. Recycled water specifications listed in section IV.C.2-22.

iii. Standard Provisions VI.A.

iv. Groundwater Limitations listed in section V.B.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a & b and IV.C.1.a & b). Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Specifications section IV.A.1.a and IV.C.1.a shall be ascertained by 24-hour composite samples. Compliance with the effluent limitations required in Limitations and Discharge Specifications section IV.A.1.b and IV.C.1.b for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. Mass Effluent Limitations. The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a are based on the permitted average dry weather flow and calculated as follows:.

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

If the effluent flow exceeds the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a shall not apply. If the effluent flow is below the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations do apply.

C. Total Residual Chlorine Effluent Limitations (Section IV.A.1.d). Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.e. and IV.C.1.c.). For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days for which analyses have been completed. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 23 per 100 milliliters, the Discharger will be considered out of compliance.

E. Monthly Average Daily Dry Weather Flow Effluent Limitations (Sections IV.A.1.g. and IV.C.1.e.). The monthly average dry weather discharge flow represents the monthly average flow during the months of May through October. Compliance with the monthly average daily flow effluent limitation will be determined for each dry weather month (May through October)

F. Electrical Conductivity (Sections IV.A.1.f. and IV.C.1.d.). Compliance with the electrical conductivity effluent limitations shall be determined each calendar month at Monitoring Locations EFF-001B and EFF-002B by comparing the 12-month rolling average of the effluent electrical conductivity data with 1,000 µmhos/cm and with the 12-month rolling flow-weighted electrical conductivity data submitted for the source water plus 500 µmhos/cm. When the Discharger only discharges at one discharge point during a calendar month, compliance shall be determined at the discharge point only. When the Discharger discharges at both discharge points during a calendar month, compliance shall be determined separately at each discharge point.

ATTACHMENT A – DEFINITIONS

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

Arithmetic mean = m= Sx / n where: Sx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

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

Best Practicable Treatment or Control (BPTC)
BPTC is a requirement of State Water Resources Control Board (State Water Board) Resolution No. 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to ensure that *"(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.*" Pollution is defined in California Water Code (Water Code) section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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

Carcinogenic
Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

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

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

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

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the Reporting Level (RL), but greater than or equal to the laboratory's Method Detection Limit (MDL). Sample results reported as DNQ are estimated concentrations.

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

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

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value, but above the MDL. Same as Detected, but Not Quantified (DNQ).

Inland Surface Waters
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum effluent limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum effluent limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

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

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Appendix B.

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

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

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
Pollutant Minimization Program means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The PMP shall be prepared in accordance with section 2.4.5.1 of the SIP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements of the SIP.

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

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

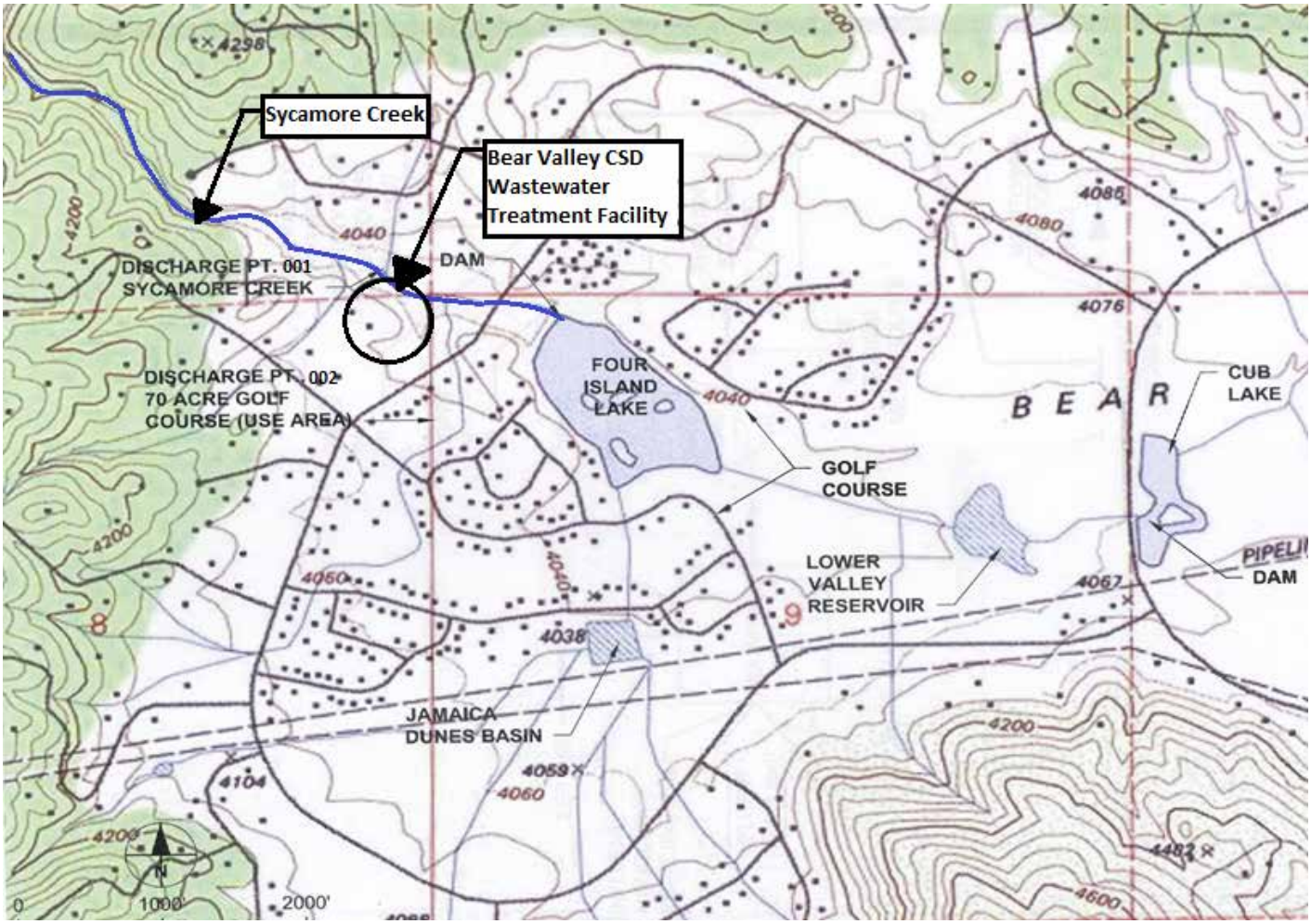
Standard Deviation (s)
Standard Deviation is a measure of variability that is calculated as follows:

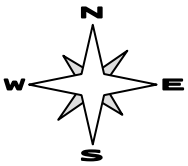
$$s = (\text{å}[(x - m)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
m is the arithmetic mean of the observed values; and
n is the number of samples.

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

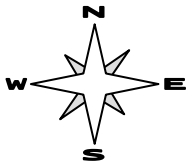
ATTACHMENT B – MAPS



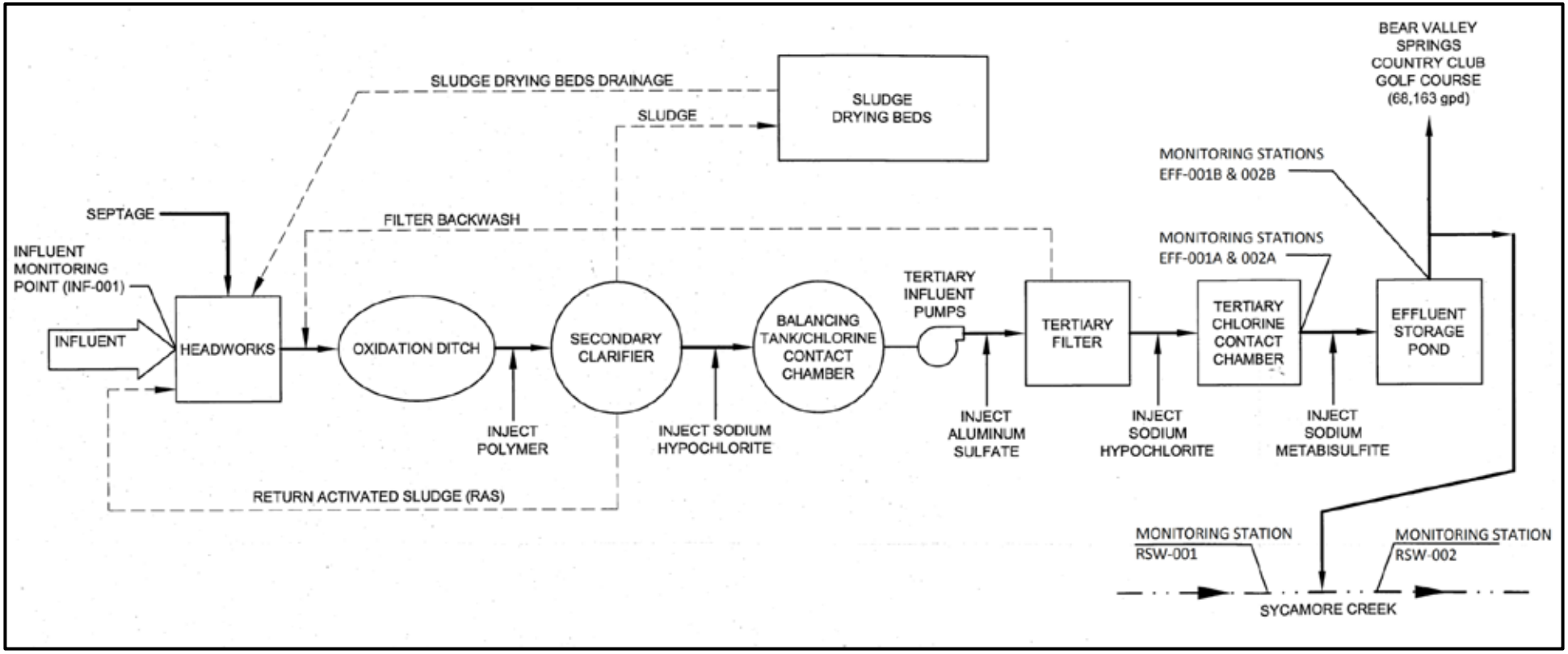
Drawing Reference: BEAR MOUNTAIN U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Not to scale*	**SITE LOCATION MAP – 1** BEAR VALLEY COMMUNITY SERVICES DISTRICT AND BEAR VALLEY SPRINGS ASSOCIATION WASTEWATER TREATMENT FACILITY KERN COUNTY	

SITE LOCATION MAP – 2

BEAR VALLEY COMMUNITY SERVICES DISTRICT
AND BEAR VALLEY SPRINGS ASSOCIATION
WASTEWATER TREATMENT FACILITY
KERN COUNTY



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

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

F. Inspection and Entry

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

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

G. Bypass

1. Definitions
   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
   c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

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

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

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

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

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring results must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 122.41(j)(4); 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).).
3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
   c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board**,** State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (Division of Drinking Water). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff, State Water Board staff, United States Environmental Protection Agency (U.S. EPA) staff, and/or their authorized representatives. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. Laboratories analyzing monitoring samples shall be certified by the Division of Drinking Water, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

G. The Discharger shall file with the Central Valley Water Board, technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.

H. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of monthly average and daily average discharge flows.

I. This Order allows the Discharger to discharge to two different discharge points. This Order allows the Facility to discharge disinfected tertiary-treated wastewater at Discharge Point 001 to Sycamore Creek or to use disinfected tertiary-treated wastewater for irrigating Bear Valley Oak Tree Country golf course and the landscape around the Facility (Discharge Point 002) For the purpose of this Order, “Use Area" means the Bear Valley Oak Tree Country Club golf course and the landscape around the Facility where recycled water is used.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility can be collected prior to any plant return flows or treatment processes
001	EFF-001A	When discharging to Sycamore Creek, final disinfected tertiary-treated effluent after the chlorine contact chamber, prior to discharge to the storage pond (unless noted otherwise in Table E-3)
001	EFF-001B	When discharging to Sycamore Creek, final disinfected tertiary-treated effluent in or after the storage pond, prior to discharge to Sycamore Creek *(35º 10’ 01” N, 118º 39’ 53” W)*
002	EFF-002A	When discharging to the Use Area, final disinfected tertiary-treated effluent after the chlorine contact chamber, prior to discharge to the storage pond (unless noted otherwise in Table E-5)
002	EFF-002B	When discharging to the Use Area, final disinfected tertiary-treated effluent in or after the storage pond, prior to discharge to the Use Area *(35º 10’ 01” N, 118º 39’ 53” W)*
002	REC-001	Bear Valley Oak Tree Country Club golf course where recycled water is used or discharged
--	RSW-001	Sycamore Creek, at the concrete flume approximately 150 feet upstream of Discharge Point 001 *(35º 10’ 01” N, 118º 39’ 51” W)*
	RSW-002	Sycamore Creek, approximately 50 feet downstream of Discharge Point 001 *(35º 10’ 02” N, 118º 39’ 53” W)*
--	BIO-001	Representative of the biosolids shipped offsite for disposal and/or composting

--	SPL-001	Representative of water supply for the area served by the Facility
--	FIL-001	A location where a representative sample of the influent to the filtration system can be obtained
--	FIL-002	A location where a representative sample of the effluent from the filtration system prior to the chlorine contact chamber can be obtained

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (BOD) (5-day @ 20°C)	mg/L	24-hr Composite [3]	1/Week	[1]
Total Suspended Solids	mg/L	24-hr Composite [3]	1/Week	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab [2] or 24-hr Composite [3]	1/Week	[1, 4]

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136; or by methods approved by the Central Valley Water Board or the State Water Board.
[2] Grab samples shall <u>not</u> be collected at the same time each day to get a complete representation of variations in the influent.
[3] The Discharger shall conduct 24-hour composite sampling.
[4] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001A

1. The Discharger shall monitor disinfected tertiary-treated wastewater at Monitoring Location EFF-001A as follows when discharging to Sycamore Creek:

Table E-3. Effluent Monitoring Requirements – Monitoring Location EFF-001A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow [3]	mgd	Meter	Continuous	[1]
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite [2]	1/Week	[1]
	lbs/day	Calculate	1/Week	--
Total Suspended Solids	mg/L	24-hr Composite [2]	1/Week	[1]
	lbs/day	Calculate	1/Week	--
pH [11]	Standard Units	Grab	1/Week [14]	[1, 4]
Priority Pollutants				
Priority Pollutants and Other	µg/L	24-hr Composite [2, 8]	1/Permit Term [9]	[1, 5, 6, 7]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Constituents of Concern [10]				
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N) [13]	mg/L	Grab	1/Week [14]	[1]
Ammonia, Un-ionized (as N) [13]	mg/L	Calculated	1/Week	--
Temperature	°C	Grab	1/Week [14]	[1, 4]
Total Coliform Organisms [12]	MPN/100 mL	Grab	3/Week	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] The Discharger shall conduct 24-hour composite sampling.
[3] Compliance with the flow effluent limitation in Section IV.A.1.g. of this Order will be assessed at Monitoring Location EFF-001A.
[4] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[5] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge, the Discharger shall take steps to ensure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.
[6] Reporting levels for priority pollutants shall be equal to the reporting levels specified in Table E-13 of this Monitoring and Reporting Program (Attachment E). If more than one analytical test method is listed for a given parameter in Table E-13, the Discharger must select from the listed methods and corresponding reporting level.
[7] Total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1631 (Revision E) with a reporting level of 0.5 ng/L.
[8] Volatile constituents shall be sampled in accordance with 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[9] Priority pollutants shall be sampled once between **1 July 2018 and 31 December 2018**. Monitoring shall be conducted concurrently with upstream receiving water monitoring for priority pollutants and other constituents of concern.
[10] See Table E-13 of this Monitoring and Reporting Program (Attachment E) for the complete list of priority pollutants and other constituents of concern.
[11] Compliance with the pH effluent limitations in Section IV.A.1.a., Table 4 of this Order, will be assessed at Monitoring Location EFF-001A.
[12] Samples for total coliform organisms may be collected at any point following disinfection prior to discharge to Sycamore Creek.
[13] The Discharger may, upon Executive Officer approval, monitor for total ammonia and un-ionized ammonia at Monitoring Location EFF-001B instead of Monitoring Location EFF-001A (to determine compliance with the un-ionized ammonia effluent limitation included in Section IV.A.1.a., Table 4 of this Order) if it is determined that the ammonia concentration entering the storage pond is not representative of the ammonia level discharged to Sycamore Creek.
[14] pH and temperature shall be recorded at the time of ammonia sample collection.

B. Monitoring Location EFF-001B

1. The Discharger shall monitor disinfected tertiary-treated wastewater at Monitoring Location EFF-001B as follows when discharging to Sycamore Creek.

Table E-4. Effluent Monitoring Requirements – Monitoring Location EFF-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH [2]	Standard Units	Grab	5/Week	[1, 3]
Non-Conventional Pollutants				
Chlorine, Total Residual	mg/L	Grab	1/Day	[1, 6]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C	µmhos/cm	Grab	5/Week	[1, 3]
Temperature	°C	Grab	5/Week	[1, 3]
Boron	mg/L	Grab	1/Quarter	[1]
Chloride	mg/L	Grab	1/Quarter	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/Quarter [4]	[1]
Standard Minerals [7]	mg/L	Grab	1/Year	[1]
Aluminum, Total Recoverable OR Acid-Soluble	µg/L	Grab	1/Year [4]	[1, 5]
Whole Effluent Toxicity (see Section V. below)	--	--	--	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] Compliance with the pH effluent limitations in Section IV.A.1.a., Table 4 of this Order, will be assessed at Monitoring Location EFF-001A.
[3] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[4] Hardness samples shall be collected concurrently with aluminum samples.
[5] Samples can be analyzed by using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by U.S. EPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
[6] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.
[7] Standard minerals shall include the following: total dissolved solids, boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, sulfate, and total alkalinity (including alkalinity series), and include verification that the analysis is complete (i.e., cation/anion balance).

C. Monitoring Location EFF-002A

1. The Discharger shall monitor disinfected tertiary-treated wastewater at Monitoring Location EFF-002A as follows when discharging to the Use Area:

Table E-5. Effluent Monitoring Requirements – Monitoring Location EFF-002A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow [6]	mgd	Meter	Continuous	[1]
Conventional Pollutants				
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite [2]	1/Week	[1]
	lbs/day	Calculate	1/Week	--
Total Suspended Solids	mg/L	24-hr Composite [2]	1/Week	[1]
	lbs/day	Calculate	1/Week	--
pH [4]	Standard Units	Grab	1/Week	[1, 3]
Non-Conventional Pollutants				
Chlorine Contact Time	mg-min/L	Calculate	1/Day	--
Total Coliform Organisms [5]	MPN/100 mL	Grab	5/Week	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board Executive Officer or the State Water Board.
[2] The Discharger shall conduct 24-hour composite sampling.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[3] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[4] Compliance with the pH effluent limitations in Section IV.C.1.a., Table 5 of this Order, will be assessed at Monitoring Location EFF-002A.
[5] Samples for total coliform organisms may be collected at any point following disinfection prior to discharge to the Use Area.
[6] Compliance with the flow effluent limitation in Section IV.C.1.e. of this Order will be assessed at Monitoring Location EFF-002A.

D. Monitoring Location EFF-002B

1. The Discharger shall monitor disinfected tertiary-treated wastewater at Monitoring Location EFF-002B as follows when discharging to the Use Area:

Table E-6. Effluent Monitoring Requirements – Monitoring Location EFF-002B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH [2]	Standard Units	Grab	5/Week	[1, 3]
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	5/Week	[1, 3]
Boron	mg/L	Grab	1/Quarter	[1]
Chloride	mg/L	Grab	1/Quarter	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/Quarter	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2/Month [4]	[1]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	2/Month [4]	[1]
Total Kjeldahl Nitrogen	mg/L	Grab	2/Month [4]	[1]
Total Nitrogen	mg/L	Calculated	2/Month	--

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board Executive Officer or the State Water Board.
[2] Compliance with the pH effluent limitations in Section IV.C.1.a., Table 5 of this Order, will be assessed at Monitoring Location EFF-002A.
[3] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[4] Monitoring for nitrite (as N), nitrate (as N), and total kjeldahl nitrogen (as N) shall be conducted concurrently.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing. The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform **annual (1/year)** acute toxicity testing.

2. *Sample Types* – The samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent Monitoring Location EFF-001B.

3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).

4. *Test Type and Duration* – Test type shall be static renewal or flow- through, and the test duration shall be 96 hours.

5. *Dilutions* – The acute toxicity testing shall be performed using undiluted effluent.

6. *Test Method* – The acute toxicity testing samples shall be analyzed using *Methods for Measuring the Acute Toxicity of Effluents and Receiving waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012. Temperature, total residual chlorine, pH, and ammonia shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

7. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. Chronic Toxicity Testing. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency –* The Discharger shall perform **annual (1/year)** three species chronic toxicity testing.

2. *Sample Types* – Effluent samples shall grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent Monitoring Location EFF-001B.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   c. The green alga, *Selenastrum capricornutum* (growth test).

5. Test Method – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA/821-R-02-013, October 2002 (Method Manual).

6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – For routine and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and one control. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-7, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. Laboratory control water shall be used as the diluent.

Table E-7. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Control
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Laboratory Water	0	25	50	75	87.5	100

8. *Test Failure* – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Method Manual, and its subsequent amendments or revisions; or

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provision section VI.C.2.a.ii. of the Order.)

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board **within 24-hours** after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board **within 30 days** following receipt of the laboratory report, and shall contain, at minimum:

   a. The dates of sample collection and initiation of each toxicity test; and

   b. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency (i.e., either annually, accelerated, or Toxicity Reduction Evaluation).

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted **within 30 days** following receipt of the laboratory report and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan, or as amended by the Discharger's TRE Action Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS

A. Monitoring Locations REC-001

1. The Discharger shall perform the following routine monitoring and loading calculations for Monitoring Location REC-001 (Bear Valley Oak Tree Country Club golf course):

Table E-8. Recycled Water Loading Calculation Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Effluent Application Rate	gal/acre/month	Calculated	1/Month
Average Supplemental Irrigation Flow	gpd	Metered	1/Month
Supplemental Irrigation Loading	gal/acre/month	Calculated	1/Month
Precipitation	inches/month	Rain gauge [1]	1/Month
Nitrogen Loading from Recycled Water [2]	lbs/acre/month	Calculated	1/Month
Nitrogen Loading from Fertilizer	lbs/acre/month	Calculated	1/Month

[1] National Weather Service data from the nearest weather station (or similar) is acceptable.

[2] Nitrogen loading shall be calculated using the applied volume of treated wastewater, applied acreage, and the average monthly effluent total nitrogen concentration.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor Sycamore Creek at upstream Monitoring Location RSW-001 and at downstream Monitoring location RSW-002 as follows when discharging to Sycamore Creek and when there is measurable flow at Monitoring Location RSW-001 unless specified otherwise (i.e., footnotes 7 and 12):

Table E-9. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week [4]	[1, 2]
Priority Pollutants				
Priority Pollutants and Other Constituents of Concern [5, 11]	µg/L	Grab [6]	1/Permit Term [7]	[1, 8, 9, 10]
Non-Conventional Pollutants				
Aluminum, Total Recoverable OR Acid-Soluble	µg/L	Grab	1/Quarter [12]	[1, 3]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month [4]	[1]

Ammonia, Un-ionized (as N)	mg/L	Calculated	1/Month	--
Dissolved Oxygen	mg/L	Grab	1/Week	1,2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	1, 2
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Quarter	1
Temperature	°C	Grab	1/Week [4]	1, 2
Turbidity	NTU	Grab	1/Week	1, 2

[1] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[3] Samples can be analyzed by using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by U.S. EPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
[4] pH and temperature shall be recorded at the time of ammonia sample collection.
[5] See Table E-13 of this Monitoring and Reporting Program (Attachment E) for the complete list of priority pollutants and other constituents of concern.
[6] Volatile constituents shall be sampled in accordance with 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[7] Priority pollutants shall be sampled once between **1 July 2018 and 31 December 2018** regardless if the Facility is discharging to Sycamore Creek. Monitoring shall be conducted concurrently with effluent monitoring for priority pollutants and other constituents of concern.
[8] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the receiving water, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.
[9] Reporting levels for priority pollutants shall be equal to the reporting levels specified in Table E-13 of this Monitoring and Reporting Program (Attachment E). If more than one analytical test method is listed for a given parameter in Table E-13, the Discharger must select from the listed methods and corresponding reporting level.
[10] Total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1631 (Revision E) with a reporting level of 0.5 ng/L.
[11] Monitoring is only required for upstream Monitoring Location RSW-001.
[12] The Discharger shall conduct quarterly (1/quarter) monitoring for aluminum, at Monitoring Location RSW-001, regardless if the Facility is discharging to Sycamore Creek.

2. A log shall be kept of the receiving water conditions bounded by Monitoring Locations RSW-001 and RSW-002. The Discharger shall conduct receiving water observations weekly when discharging to Sycamore Creek. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter;
   b. Discoloration;
   c. Bottom deposits
   d. Aquatic life (including plants, fish, shellfish, birds);
   e. Visible film, sheen, or coating;
   f. Fungi, slime, or objectionable growth;
   g. Potential nuisance conditions;
   h. Persons recreating in and around Sycamore Creek downstream of Discharge Point 001; and
   i. Flow upstream of Discharger Point 001.

   Receiving water observations shall be summarized in the monthly self-monitoring report.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected **annually (1/Year)** at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 C.F.R. Part 122, Appendix D, Tables II and III (excluding total phenols).

b. Biosolids monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical methods* (U.S. EPA publication SW-846), as required in 40 C.F.R. 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100% dry weight" or "as is."

c. Sampling records shall be retained for a minimum of **5 years**. A log shall be maintained of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log must be complete enough to serve as a basis for part of the annual report.

B. Municipal Water Supply

1. Monitoring Location SPL-001

a. The Discharger shall monitor the public water supply at Monitoring Location SPL-001 consistent with Table E-10. Sampling stations shall be established where representative samples of the public water supply can be obtained.

Table E-10. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C [1]	µmhos/cm	Grab	1/Quarter	[3]
Standard Minerals [2]	mg/L	Grab	1/Year	[3]

[1] If the water supply is from more than one source, the electrical conductivity shall be reported as a flow weighted average and include copies of supporting calculations.

[2] Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), hardness, and total dissolved solids, and include verification that the analysis is complete (i.e., cation/anion balance).

[3] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

C. Filtration System Monitoring Requirements

1. Monitoring Locations FIL-001

a. The Discharger shall monitor the influent to the filtration system at Monitoring Location FIL-001 as follows only when the Discharger is <u>not</u> using coagulation:

Table E-11. Filtration System Monitoring Requirements – Monitoring Location FIL-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Meter	Continuous [1, 2, 3]	[4]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

[2] If turbidity exceeds 5 NTU at Monitoring Location FIL-001 for more than 15 minutes when not coagulating, the

Discharger shall add chemicals or divert the wastewater. If turbidity exceeds 10 NTU at Monitoring Location FIL-001 when not coagulating and the wastewater is not diverted, the Discharger shall collect a sample as soon as practicable for total coliform at Monitoring Location EFF-001A (if discharging to Sycamore Creek) or Monitoring Location EFF-002A (if discharging to the recycled water Use Area) and report the duration of the turbidity exceedance.

[3] Report daily average turbidity and maximum turbidity.

[4] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

2. **Monitoring Location FIL-002**

a. The Discharger shall monitor the effluent from the filtration system at Monitoring Location FIL-002:

Table E-12. Filtration System Monitoring Requirements – Monitoring Location FIL-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Meter	Continuous [1, 2, 3]	[4]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

[2] If turbidity exceeds 10 NTU at Monitoring Location FIL-002 when coagulation is used or 2 NTU when coagulation is not used, and the wastewater is not diverted, the Discharger shall collect a sample as soon as practicable for total coliform at Monitoring Location EFF-001A (if discharging to Sycamore Creek) or Monitoring Location EFF-002A (if discharging to the recycled water Use Area) and report the duration of the turbidity exceedance.

[3] Report daily average turbidity and maximum turbidity.

[4] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

D. Effluent and Receiving Water Characterization

1. Samples shall be collected from the effluent (Monitoring Location EFF-001A) and upstream receiving water (Monitoring Location RSW-001) once between **1 July 2018 and 31 December 2018** and analyzed for the constituents listed in Table E-13, below. The results of such monitoring shall be submitted to the Central Valley Water Board with the monthly self-monitoring reports in which the samples were taken.

2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

3. **Sample type.** All receiving water samples shall be taken as grab samples. All effluent samples shall be 24-hour composite samples except samples for constituents which 40 C.F.R. 136 indicates composite samples are inappropriate (e.g., volatile organic compounds).

Table E-13. Effluent and Receiving Water Characterization Monitoring

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
1	Antimony	74440360	5	GFAA
			10	FAA
			0.5	ICPMS
			50	ICP
			5	SPGFAA
			0.5	HYDRIDE
			1000	DCP
2	Arsenic	7440382	2	GFAA
			10	ICP
			2	ICPMS

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
			2	SPGFAA
			1	HYDRIDE
			20	COLOR
3	Beryllium	7440417	0.5	GFAA
			2	ICP
			0.5	ICPMS
			1	SFGFAA
			20	FAA
4	Cadmium	7440439	0.5	GFAA
			0.25	ICPMS
			0.5	SPGFAA
5A	Chromium (III)	7440473	--	--
5B	Chromium (VI)	18540299	5	FAA
			10	COLOR
6	Copper	7440508	0.5	ICPMS
			5	GFAA
			2	SPGFAA
7	Lead	7439921	0.5	ICPMS
			2	SPGFAA
8	Mercury [3]	7439976	0.5 (ng/L)	CVAFS
9	Nickel	7440020	5	GFAA
			1	ICPMS
			5	SPGFAA
			20	ICP
			50	FAA
10	Selenium	7782492	5	GFAA
			2	ICPMS
			5	SPGFAA
			1	HYDRIDE
11	Silver	7440224	0.25	ICPMS
			1	GFAA
			2	SPGFAA
12	Thallium	7440280	1	ICPMS
			2	GFAA
			5	SPGFAA
13	Zinc	7440666	1	ICPMS
			20	ICP
			20	FAA
			10	SPGFAA
14	Cyanide	57125	5	COLOR
15	Asbestos	1332214	-- (MFL)	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--	--
17	Acrolein	107028	2	GC
			5	GCMS
18	Acrylonitrile	107131	2	GC
			2	GCMS
19	Benzene	71432	0.5	GC
			2	GCMS
20	Bromoform	75252	0.5	GC
			2	GCMS
21	Carbon tetrachloride	56235	0.5	GC
22	Chlorobenzene (mono chlorobenzene)	108907	0.5	GC
			2	GCMS
23	Dibromochloromethane	124481	0.5	GC

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
			2	GCMS
24	Chloroethane	75003	0.5	GC
			2	GCMS
25	2- Chloroethyl vinyl ether	110758	1	GC
			1	GCMS
26	Chloroform	67663	0.5	GC
			2	GCMS
27	Dichlorobromomethane	75274	0.5	GC
			2	GCMS
28	1,1-Dichloroethane	75343	0.5	GC
			1	GCMS
29	1,2-Dichloroethane	107062	0.5	GC
			2	GCMS
30	1,1-Dichloroethylene	75354	0.5	GC
			2	GCMS
31	1,2-Dichloropropane	78875	0.5	GC
			1	GCMS
32	1,3-Dichloropropylene	542756	0.5	GC
			2	GCMS
33	Ethylbenzene	100414	0.5	GC
			2	GCMS
34	Bromomethane	74839	1	GC
			2	GCMS
35	Chloromethane	74873	0.5	GC
			2	GCMS
36	Dichloromethane	75092	0.5	GC
			2	GCMS
37	1,1,2,2-Tetrachloroethane	79345	0.5	GC
			1	GCMS
38	Tetrachloroethene	127184	0.5	GC
			2	GCMS
39	Toluene	108883	0.5	GC
			2	GCMS
40	trans-1,2-Dichloroethylene	156605	0.5	GC
			1	GCMS
41	1,1,1-Trichloroethane	71556	0.5	GC
			2	GCMS
42	1,1,2-Trichloroethane	79005	0.5	GC
			2	GCMS
43	Trichloroethylene	79016	0.5	GC
			2	GCMS
44	Vinyl chloride	75014	0.5	GC
			2	GCMS
45	2-Chlorophenol	95578	2	GC
			5	GCMS
46	2,4-Dichlorophenol	120832	1	GC
			5	GCMS
47	2,4-Dimethylphenol	105679	1	GC
			2	GCMS
48	4,6-Dinitro-2-methylphenol	534521	10	GC
			5	GCMS

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
49	2,4-Dinitrophenol	51285	5	GC
			5	GCMS
50	2-Nitrophenol	25154557	10	GCMS
51	4-Nitrophenol	100027	5	GC
			10	GCMS
52	4-Chloro-3-methylphenol	59507	5	GC
			1	GCMS
53	Pentachlorophenol	87865	1	GC
			5	GCMS
54	Phenol	108952	1	GC
			1	GCMS
55	2,4,6-Trichlorophenol	88062	10	GC
			10	GCMS
56	Acenaphthene	83329	1	GC
			1	GCMS
			0.5	LC
57	Acenaphthylene	208968	10	GCMS
			0.2	LC
58	Anthracene	120127	10	GCMS
			2	LC
59	Benzidine	92875	5	GCMS
60	1,2-Benzanthracene	56553	5	GCMS
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	LC
62	3,4-Benzofluoranthene	205992	10	GCMS
			10	LC
63	Benzo(g,h,i)perylene	191242	5	GCMS
			0.1	LC
64	Benzo(k)fluoranthene	207089	2	LC
65	Bis(2-chloroethoxy) methane	111911	5	GCMS
66	Bis(2-chloroethyl) ether	111444	1	GCMS
67	Bis(2-chloroisopropyl) ether	39638329	10	GC
			2	GCMS
68	Bis(2-ethylhexyl) phthalate [4]	117817	5	GCMS
69	4-Bromophenyl phenyl ether	101553	10	GC
			5	GCMS
70	Butyl benzyl phthalate	85687	10	GC
			10	GCMS
71	2-Chloronaphthalene	91587	10	GCMS
72	4-Chlorophenyl phenyl ether	7005723	5	GCMS
73	Chrysene	218019	5	LC
74	Dibenzo(a,h)-anthracene	53703	0.1	LC
75	1,2-Dichlorobenzene	95501	2	GC
			2	GCMS
76	1,3-Dichlorobenzene	541731	2	GC
			1	GCMS
77	1,4-Dichlorobenzene	106467	2	GC
			1	GCMS
78	3,3'-Dichlorobenzidine	91941	5	GCMS
79	Diethyl phthalate	84662	10	GC
			2	GCMS
80	Dimethyl phthalate	131113	10	GC
			2	GCMS
81	Di-n-butylphthalate	84742	10	GCMS

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
82	2,4-Dinitrotoluene	121142	5	GCMS
83	2,6-Dinitrotoluene	606202	5	GCMS
84	Di-n-octylphthalate	117840	10	GCMS
85	1,2-Diphenylhydrazine	122667	1	GCMS
86	Fluoranthene	206440	10	GC
			1	GCMS
			0.05	LC
87	Fluorene	86737	10	GCMS
			0.1	LC
88	Hexachlorobenzene	118741	1	GCMS
89	Hexachlorobutadiene	87683	5	GC
			1	GCMS
90	Hexachlorocyclopentadiene	77474	5	GC
			5	GCMS
91	Hexachloroethane	67721	5	GC
			1	GCMS
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	LC
93	Isophorone	78591	10	GC
			1	GCMS
94	Naphthalene	91203	10	GC
			1	GCMS
			0.2	LC
95	Nitrobenzene	98953	10	GC
			1	GCMS
96	N-Nitrosodimethylamine	62759	5	GCMS
97	N-Nitrosodi-n-propylamine	621647	5	GCMS
98	N-Nitrosodiphenylamine	86306	10	GC
			1	GCMS
99	Phenanthrene	85018	5	GCMS
			0.05	LC
100	Pyrene	129000	10	GCMS
			0.05	LC
101	1,2,4-Trichlorobenzene	120821	1	GC
			5	GCMS
102	Aldrin	309002	0.005	GC
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	GC
104	beta-Hexachlorocyclohexane	319857	0.005	GC
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02	GC
106	delta-Hexachlorocyclohexane	319868	0.005	GC
107	Chlordane	57749	0.1	GC
108	4,4'-DDT	50293	0.01	GC
109	4,4'-DDE	72559	0.05	GC
110	4,4'-DDD	72548	0.05	GC
111	Dieldrin	60571	0.01	GC
112	alpha-Endosulfan	959988	0.02	GC
113	beta-Endosulfan	33213659	0.01	GC
114	Endosulfan sulfate	1031078	0.05	GC
115	Endrin	72208	0.01	GC
116	Endrin Aldehyde	7421934	0.01	GC
117	Heptachlor	76448	0.01	GC
118	Heptachlor Epoxide	1024573	0.01	GC

CTR #	Constituent	CAS #	Reporting Level [1]	Method Type [2]
119	PCB-1016	12674112	0.5	GC
120	PCB-1221	11104282	0.5	GC
121	PCB-1232	11141165	0.5	GC
122	PCB-1242	53469219	0.5	GC
123	PCB-1248	12672296	0.5	GC
124	PCB-1254	11097691	0.5	GC
125	PCB-1260	11096825	0.5	GC
126	Toxaphene	8001352	0.5	GC
	cis-1,2-Dichloroethylene	156592	--	--
	Methyl-tert-butyl ether (MTBE)	1634044	--	--
	Trichlorofluoromethane	75694	--	--
	Tributyltin	688733	--	--
	Alachlor	15972608	--	--
	Atrazine	1912249	--	--
	Bentazon	25057890	--	--
	2,4-D	94757	--	--
	Glyphosate	1071836	--	--
	Methoxychlor	72435	--	--
	Diazinon	333415	--	--
	Chlorpyrifos	2921882	--	--
	Foaming Agents (MBAS)		--	--
	Barium	7440393	--	--
	Iron [5]	7439896	--	--
	Manganese [5]	7439965	--	--
	Hardness (as $CaCO_3$)		--	--
	Phosphorus, Total (as P) [5]	7723140	--	--
	Sulfate [5]		--	--

[1] The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP. The units are µg/L unless otherwise noted.

[2] **GC** = Gas Chromatography
GCMS = Gas Chromatography/Mass Spectrometry
LC = High Pressure Liquid Chromatography
FAA = Flame Atomic Absorption
GFAA = Graphite Furnace Atomic Absorption
Hydride = Gaseous Hydride Atomic Absorption
ICP = Inductively Coupled Plasma
ICPMS = Inductively Coupled Plasma/Mass Spectrometry
SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP = Direct Current Plasma
COLOR = Colorimetric
CVAFS = Clean Vapor Atomic Absorption Fluorescence Spectrometry (i.e., EPA 1630/1631)

[3] Total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks* (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1631 (Revision E) with a reporting level of 0.5 ng/L.

[4] In order to verify if bis (2-ethylhexyl) phthalate is truly present in the effluent discharge and receiving water, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

[5] Monitoring is only required for the upstream receiving water (Monitoring Location RSW-001)

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules – Not Applicable**

4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall continue to submit electronic SMRs (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs). The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs. The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the eSMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly eSMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. eSMRs are to include all new monitoring results obtained since the last eSMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-14. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	Continuous	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week 3/Week 5/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month 2/Month	Permit effective date	1st day of calendar month through last day of calendar month	First day of the second calendar month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May SMR)
1/Year	1 January following (or on) the	January 1 through December	Submit with the monthly SMR

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
	permit effective date	31	in which sample was taken (e.g., if a sample is taken in May, the result must be included in the May SMR)
1/Permit Term	1 July 2018	Once between 1 July 2018 and 31 December 218	Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in July, the result must be included in the July SMR)
1/Year (Acute and Chronic WET Tests)	1 January following the permit effective date	1 January through 31 December	Within 30 days following receipt of the laboratory reports

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

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

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

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

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. **Reporting Requirements.** The Discharger shall submit eSMRs in accordance with the following requirements:

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment under the Attachments tab.

b. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its eSMRs for which sample analyses were performed.

c. Violations must be entered in to CIWQS under the Violations tab for the reporting period in which the violation occurred.

d. The Discharger shall attach or enter a cover letter with each eSMR. The cover letter shall include any information the Discharger would like to convey to Central Valley Water Board staff. If violations have been entered with complete entries on corrective actions and time frames, that information does not need to be repeated in the cover letter.

e. With the exception of flow, all parameters monitored on a continuous basis (metered) shall be reported as daily maximums and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.

f. eSMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), through the CIWQS web site.

g. Reports must clearly show when discharging to Sycamore Creek (Discharge Point 001) and the Use Area (Discharge Point 002). Reports must show the date and time that the discharge started and stopped.

h. The highest daily maximum for the month and monthly averages shall be determined and recorded as needed to demonstrate compliance.

7. **Calculation Requirements.** The following shall be calculated and reported in the SMRs:

a. **12-Month Rolling Average Limitations.** For constituents with effluent limitations specified as “12-month rolling average” (i.e., electrical conductivity), the Discharger shall report the 12-month rolling average in each monthly eSMR. The 12-month rolling average shall be calculated as the average of all samples gathered over the previous 12 months.

b. **Mass Loading Limitations**. For BOD_5 and TSS, the Discharger shall calculate and report the mass loading (lbs/day) in the eSMRs. The mass loading shall be calculated as follows:

Mass Loading (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

c. **Removal Efficiency (BOD_5 and TSS).** The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the eSMRs. The percent removal shall be calculated as specified in Section VII.A. of the Limitations and Discharge Requirements.

d. **Total Coliform Organisms Effluent Limitations**. The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7 day median of total coliform organisms shall be calculated as specified in Section VII.D. of the Limitations and Discharge Requirements.

e. **Monthly Average Daily Dry Weather Flow Effluent Limitation**. The Discharger shall calculate and report the monthly average daily dry weather flow for the effluent at Monitoring Location EFF-001A and Monitoring Location EFF-002A as specified in Section VII.E. of this Order and reported in the monthly eSMRs.

f. **Dissolved Oxygen Receiving Water Limitations**. The Discharger shall calculate and report monthly in the self-monitoring report: i) the dissolved oxygen concentration, ii) the percent of saturation in the main water mass, and iii) the 95th percentile dissolved oxygen concentration.

g. **Turbidity Receiving Water Limitations**. The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.18.a-d. of the Limitations and Discharge Requirements.

h. **Temperature Receiving Water Limitations**. The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at RSW-001 and RSW-002.

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements.

Table E-15. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Salinity Evaluation and Minimization Plan, Submit Plan (Special Provision VI.C.3.a.)	**<180 days from the effective date of this Order>**
Salinity Evaluation and Minimization Plan, Progress Reports (Special Provision VI.C.3.a.)	**1 February**, annually

Special Provision	Reporting Requirements
Priority Pollutant Evaluation Monitoring Plan (Special Provision VI.C.2.b.)	**90 days** from when the priority pollutants and other constituents of concern samples are taken

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by the Special Provisions VI.C. of this order. The Discharger shall submit reports with the first monthly eSMR scheduled to be submitted on or immediately following the report due date.

3. **Reporting Levels Report.** By **<60 days from permit effective date>**, the Discharger shall submit a report outlining reporting levels (RLs), method detection limits (MDLs), and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required RLs for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-13 (Attachment E) provides required maximum reporting levels in accordance with the SIP.

4. **Annual Operations Report.** By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

   b. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.

   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	5D152037001
Discharger	Bear Valley Community Services District and Bear Valley Springs Association
Name of Facility	Bear Valley Community Services District Wastewater Treatment Facility
Facility Location	Section 9, T32S, R31E, MDB&M
	Tehachapi, California 93561
	Kern County
Facility Contact, Title and Phone	Larry Tuma III, Superintendent of Public Works (661) 821-4428
Authorized Person to Sign and Submit Reports	David M. Edmonds, General Manager (661) 821-4428 Larry Tuma III, Superintendent of Public Works (661) 821-4428 Mac Askari, Chief Plant Officer (661) 821-2409
Mailing Address	28999 South Lower Valley Road, Tehachapi, CA 93561
Billing Address	Same as Mailing Address
Type of Facility	POTW
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Recycling Requirements	Producer and User of Title 22 Water
Facility Permitted Flow	0.25 million gallons per day (mgd)
Facility Design Flow	0.25 mgd
Watershed	Tejon Creek Hydrologic Area (556.20)
Receiving Water	Sycamore Creek
Receiving Water Type	Inland surface water

A. The Bear Valley Community Services District (Bear Valley CSD) is the owner and operator of the Bear Valley CSD Wastewater Treatment Facility (hereinafter Facility), a Publicly-Owned Treatment Works (POTW). Bear Valley CSD also owns the Bear Valley Oak Tree Country Club golf course, but leases the golf course to Bear Valley Springs Association (BVSA). Disinfected tertiary-treated wastewater from the Facility is used as recycled water on the golf

course. BVSA maintains the Bear Valley Oak Tree Country Club golf course and is responsible for the application of recycled water on the golf course. Together Bear Valley CSD and BVSA are hereinafter referred to as the Discharger.

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

B. The Facility discharges wastewater to Sycamore Creek, a water of the United States, and recycles disinfected tertiary-treated domestic wastewater on the Bear Valley Oak Tree Country Club golf course and on the landscape surrounding the Facility. For the purpose of this Order, “Use Area" means the Bear Valley Oak Tree Country Club golf course and the landscape around the Facility where recycled water is used. Bear Valley CSD was previously regulated by Order R5-2008-0121 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081213 adopted on 31 July 2008 and expired on 31 July 2013. Attachment B provides maps of the area around the Facility. Attachment C provides a flow schematic of the Facility.

Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. The Discharger filed a report of waste discharge and submitted an application for reissuance of its WDR’s and NPDES permit on 14 December 2012.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Bear Valley Springs and serves a population of approximately 1,100. The design daily average flow capacity of the Facility is 0.25 mgd.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of bar screening, an oxidation ditch, a secondary clarifier, chlorination, two continuous backwash sand filters (used alternately), and a final chlorine contact chamber. Disinfected tertiary-treated wastewater is stored in a 240,000 gallon concrete-lined storage pond. Biosolids/sludge produced from the secondary clarifier is dried in eight concrete-lined sludge drying beds.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 9, T32S, R31E, MDB&M, as shown in Attachment B, a part of this Order.
2. Disinfected tertiary-treated wastewater is either discharged at Discharge Point No. 001 to Sycamore Creek, a water of the United States at a point latitude 35° 10’ 01” N and longitude 118° 39’ 53” W and the Use Area.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the existing Order (Order R5-2008-0121) for discharges from Discharge Points 001 and 002 and representative monitoring data from August 2008 to June 2014 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From August 2008 – June 2014		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow [1]	mgd	0.25			0.11 [14]	--	--
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	10	15	20	4.5	8.7	8.7
	lbs/day	21	31	42	NR	NR	NR
	% removal	85	--	--	98.1	--	--
Total Suspended Solids	mg/L	10	15	20	7.35	19	19
	lbs/day	21	31	42	NR	NR	NR
	% removal	85	--	--	95	--	--
pH		--	--	6.5-8.3 [2]	--	--	6.5 – 8.1 [2]
Copper, Total Recoverable [3, 6]	µg/L	--	--	62	--	--	13
Copper, Total Recoverable [4, 6]	µg/L	11	--	21	15	--	15
Settleable Solids	mL/L	0.1	--	0.2	ND	--	ND
Electrical Conductivity @ 25 °C	µmhos/cm	1,000 [5]	--	--	891 [15]	--	--
Total Residual Chlorine [6]	mg/L		0.01 [8]	0.02 [9]	--	ND	ND
Turbidity	NTU			2/5/10 [7]			1.7/13 [16]
Total Coliform Organisms	MPN/100 mL	23 [10]	2.2 [11]	240 [12]	--	--	170
Acute Whole Effluent Toxicity [6]	%	--	--	70/90 [13]	--	--	100 [17]

NR = Not Reported
ND = Non-detect

1 Monthly average daily dry weather flow.
2 Instantaneous minimum – instantaneous maximum
3 Interim copper effluent limitation effective from 31 July 2008 to 17 May 2010.
4 Final copper effluent limitations effective beginning 18 May 2010.
5 The maximum conductivity of the discharge shall not exceed the source water electrical conductivity plus 400 µmhos/cm/cm or 1,000 µmhos/cm/cm, whichever is less.
6 Effluent limitations only applicable to Discharge Point 001 (discharge to Sycamore Creek)
7 Daily Average/More than 5% of the time within a 24-hour period/At any time
8 4-day average
9 1-hour average
10 No more than once in any 30 day period
11 7-day median
12 At any time
13 Minimum for any one bioassay/Minimum median for any three consecutive bioassays
14 Maximum average monthly flow reported during dry weather months (May – October)
15 Calendar annual average
16 Daily average/instantaneous maximum
17 Minimum reported result

D. Compliance Summary

The following compliance summary applies to the Facility during the term of Order R5-2008-0121 up to September 2014:

1. Based on the data contained in self-monitoring reports from August 2008 to June 2014, the Facility exceeded effluent limitations for copper, total suspended solids, and turbidity.
2. A compliance inspection of the Facility was conducted on 15 April 2012. The major findings from the inspection report are as follows:
   a. The Discharger was not reporting the method detection limit and applicable reporting level in its self-monitoring reports as required.
   b. The Discharger did not record the sample time or specific analyst name for samples analyzed on-site.
   c. The Quality Assurance-Quality Control Program for the on-site, non-certified laboratory did not appear to conform to the United States Environmental Protection Agency (U.S. EPA) guidelines.
   d. The Discharger did not maintain documentation that showed the 15 minute holding time requirement for pH, as specified in 40 C.F.R. 136, was being met.
   e. The Discharger did not maintain adequate documentation to ensure that preventative and routine maintenance items were scheduled, performed, or completed per equipment or treatment unit manufacturer specifications.

E. Planned Changes

On 8 March 2012, the Discharger submitted a report of waste discharge (ROWD) and Title 22 Engineering Report to impound recycled water in Four Island Lake. In a letter dated 8 May 2012, the Division of Drinking Water provided comments on the Title 22 Engineering Report which highlighted inadequacies with the Report. Therefore, the Discharger indicated in its 14 December 2012 ROWD that they no longer planned on impounding recycled water in Four Island Lake. However, the Discharger has indicated through recent conversations with Central Valley Water Board staff that they may in the future pursue impounding disinfected tertiary-treated wastewater in Four Island Lake. This Order does not authorize a discharge from the Facility to Four Island Lake.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

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

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

   a. **Basin Plan.** The Central Valley Water Board adopted a *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. Table II-1 of the Basin Plan identifies the beneficial uses of certain specific water bodies. Sycamore Creek is not specifically listed but is considered a West Side Stream, for which beneficial uses are listed in Table II-1 of the Basin Plan. The beneficial uses of Sycamore Creek are listed in Table F-3 below.

   Table II-2 of the Basin Plan also identifies beneficial uses for the groundwater underlying the recycled water Use Area. Groundwater underlying the recycled water Use Area is in the Bear Valley Satellite Basin. The beneficial uses of groundwater for this Basin are also listed in Table F-3 below.

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Sycamore Creek	Existing: Agricultural supply (AGR); Industrial service supply (IND); Industrial process supply (PRO); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Wildlife habitat (WILD): Preservation of rare, threatened or endangered species (RARE); and Groundwater recharge (GWR)
002	Groundwater (Bear Valley Satellite Basin)	Existing: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Water contact recreation (REC-1); Non-contact water recreation (REC-2); and Wildlife habitat (WILD)

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

3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became

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

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("*Statement of Policy with Respect to Maintaining High Quality of Waters in California*"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that *"the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective"*.

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in

any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

8. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. However, the State Water Board does not require wastewater treatment facilities with design flows less than 1 mgd to obtain coverage under the Industrial Storm Water General Order. Therefore, this Order does not regulate storm water.

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011 U.S. EPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 C.F.R. Part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to a WQLS. Point source dischargers will be assigned or allocated a maximum allowable load of critical pollutants*." Sycamore Creek is not listed as a WQLS on the 303(d) list of impaired water bodies.

2. **Total Maximum Daily Loads (TMDLs).** U.S. EPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. TMDLs have not been developed for Sycamore Creek.

E. Other Plans, Polices and Regulations

1. **Title 27, California Code of Regulations (CCR), sections 20005 et seq (hereinafter Title 27)**

   a. The treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27. The exemption of the treatment and storage facilities, pursuant to Title 27, CCR, subsection 20090(a), is based on the following:

      i. The waste consists primarily of domestic sewage and treated effluent;

      ii. The waste discharge requirements are consistent with water quality objectives; and

      iii. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

b. Title 27, CCR, subsection 2009(b) contains an exemption for dischargers of wastewater to land where the discharge is covered by WDRs, the discharge is in compliance with the Basin Plan, and the discharge does not need to be managed as a hazardous waste. The discharge to the recycled water Use Area is exempt pursuant to Title 27, subsection 20090(b) because:

   i. The Central Valley Water Board is issuing WDRs for the discharge to the recycled water Use Area;

   ii. The discharge is in compliance with the Basin Plan; and

   iii. The treated effluent discharged to the recycled water Use Area does not need to be managed as hazardous waste.

c. Section 20090(h) contains a reuse exemption, which contains an unconditional exemption for "[r]*ecycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division.*" The discharge to the recycled water Use Area is exempt from the requirements of Title 27, pursuant to Title 27, CCR, subsection 20090(h) because the discharge is reclaimed tertiary treated wastewater.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality*." Federal regulations, 40 C.F.R. 122.44(d)(1)(vi), further provide that "*[w]here a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at IV-21 contains an implementation policy, "Application of Water Quality Objectives", that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will*

implement the narrative objectives." This Policy complies with 40 C.F.R. 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "*Policy for Application of Water Quality Objectives*") (40 C.F.R. 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-6) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable taste or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.*"

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a report of waste discharge (ROWD) before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at C.F.R. Part 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 which requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on C.F.R. Part 122.41 et seq., which requires the proper design and operation of treatment facilities

5. **Prohibition III.E (No discharge of "hazardous wastes").** This prohibition concerns a category of waste that is subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged, has a high potential for creating a condition that would violate Prohibition III.C. as well.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal Dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal regulations, 40 C.F.R. Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. This Order requires WQBELs that are equal to or more stringent than the secondary technology-based treatment described in 40 C.F.R. Part 133 and are necessary to protect the beneficial uses of the receiving stream. (See section IV.C.3.b of this Attachment for the discussion on pathogens.). In addition, 40 C.F.R. 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. **pH.** The secondary treatment regulations at 40 C.F.R. Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

c. **Flow.** The Facility was designed to provide a tertiary level of treatment for up to 0.25 mgd. Previous Order R5-2008-0121 contained an average monthly dry weather flow limitation of 0.25 mgd. Based on flow data submitted form August 2008 to June 2014, the average discharge flow from the Facility during the months of May through October is 0.07 mgd. Therefore, this Order carries over the discharge flow limitation from Order R5-2008-0121.

Summary of Technology-based Effluent Limitations
Discharge Point No. 001

Table F-4. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) [1]	mg/L	30	45	--	--
	lbs/day	62	94	--	--
	% removal	85	--	--	--
Total Suspended Solids (TSS) [1]	mg/L	30	45	--	--
	lbs/day	62	94	--	--
	% removal	85	--	--	--
pH [1]	standard units	--	--	6.0	9.0
Flow	mgd	0.25 [2]	--	--	--

[1] Note that more stringent WQBELs for BOD_5, TSS, and pH (except for the BOD_5 and TSS percent removal limitations) are applicable and are established as final effluent limitations in this Order (see section IV.C.3. of this Fact Sheet).
[2] Applied as an average monthly daily dry weather discharge flow limitation.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements or other provisions, is discussed in section IV.C.3. in the Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan identifies beneficial uses for West Side Streams, which does not include municipal and domestic supply. Therefore, the municipal and domestic supply beneficial use does not apply to Sycamore Creek.

The Basin Plan on page II-1 states: *"Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water…"* and with respect to disposal of wastewaters states that "...*use of waters for disposal of wastewaters is not included as a beneficial use…and are subject to regulation as activities that may harm protected uses."*

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. **Receiving Water and Beneficial Uses.** Refer to section III.C.1. above for a complete description of the receiving water and beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from August 2008 through June 2014, unless otherwise noted in section IV.C.3. of this Fact Sheet, which includes effluent and ambient background data submitted in SMRs. Additional data outside of this range were also analyzed where there were inadequate data to perform an analysis.

c. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

d. **Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* (CTR) and the *National Toxics Rule* (NTR) contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality

criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2], and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 C.F.R. § 131.38(c)(4)) The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.[3] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10).[4] The CTR also requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge.[5] The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions.

The State Water Board provided direction regarding the selection of hardness in two precedential water quality orders; WQO 2008-0008 for the City of Davis Wastewater Treatment Plant and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant. The State Water Board recognized that the SIP and the CTR do not discuss the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness. (Davis Order, p.10). The State Water Board explained that it is necessary that, "[*t*]*he [hardness] value selected should provide protection for all times of discharge under varying hardness conditions.*" (Yuba City Order, p. 8). The Davis Order also provides that, "[*r*]*egardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions."* (Davis Order, p. 11)

The equation describing the total recoverable regulatory criterion, as established in the CTR[6], is as follows:

$$\text{CTR Criterion} = \text{WER} \times (e^{m[\ln(H)]+b}) \quad \text{(Equation 1)}$$

Where:

H = hardness (as $CaCO_3$)[7]

WER = water-effect ratio

m, b = metal- and criterion-specific constants

[1] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.
[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used.
[3] 40 C.F.R. 131.38 § (c)(4)(ii)
[4] 40 C.F.R. 131.38 § (c)(2)(iii), Table 4
[5] 40 C.F.R. 131.38 § (c)(2)(i)
[6] 40 CFR § 131.38(b)(2).
[7] For this discussion, all hardness values are in mg/L as $CaCO_3$.

The upstream receiving water hardness varied from 106 mg/L to 390 mg/L, based on 19 samples from August 2008 to June 2014. The downstream receiving water hardness varied from 110 mg/L to 320 mg/L, based on 17 samples from August 2008 to June 2014. During significant portions of the year, however, Sycamore Creek is effluent dominated, so the downstream ambient hardness that is consistent with the design low flow conditions is equivalent to the effluent hardness, because the effluent is, in effect, the ambient surface water under these regularly occurring conditions. The effluent hardness varied from 210 mg/L to 500 mg/L based on 10 samples from April 2005 to June 2014.

For calculating the CTR criteria the downstream ambient hardness has been used. The SIP, CTR, and State Water Board do not require use of the minimum observed ambient hardness in the CTR equations. The hardness used must be consistent with design conditions and protective of water quality criteria under all flow conditions. The minimum effluent hardness of 210 mg/L, represents the downstream ambient hardness under the design condition and was considered for use in the CTR equations.

A downstream ambient hardness of 210 mg/L results in CTR criteria that are protective of aquatic life under all flow conditions for copper, zinc, chromium III, nickel, and cadmium (chronic). However, for lead, silver, and cadmium (acute), using this hardness to calculate the CTR criteria is protective during the effluent dominated condition, but lower criteria are necessary to be fully protective of aquatic life under higher flow conditions in the receiving water.

The Facility discharges both hardness and metals, which must be considered in the downstream ambient receiving water to ensure the criteria are protective under all flow conditions. The tables below examine how the downstream ambient conditions change with varying mixtures of effluent and upstream receiving water. The calculations determine whether or not toxicity could result from one or more metals using the selected design ambient hardness to calculate the CTR criteria.

A simple mass balance (Equation 2) is used to model the ambient concentrations of hardness and metals in the receiving water downstream of the discharge for all possible mixtures of effluent and upstream receiving water under all flow conditions.

$$C_{downstream} = C_{upstream} \times (1\text{-}MIX) + C_{effluent} \times (MIX) \quad \text{(Equation 2)}$$ [1]

Where:

$C_{downstream}$ = Downstream receiving water concentration
$C_{upstream}$ = Upstream receiving water concentration
$C_{effluent}$ = Effluent concentration
MIX = Fraction of effluent in downstream ambient receiving water

For each of several downstream ambient mixtures of upstream receiving water and effluent, the potential for toxicity is examined. The hardness of the mixture is calculated, and the resultant water quality criterion is calculated from the CTR equation. The metals concentration is also calculated for the mixture of upstream receiving water and effluent. If the metals concentration complies with the CTR criterion for that mixture, the ambient mixture is not toxic, and “Yes” is indicated in the far right column. If the metals concentration exceeds the CTR criterion for that

[1] U.S. EPA NPDES Permit Writers’ Manual, September 2010 (EPA-833-K-10-001)

mixture, the ambient concentration is toxic, and "No" is indicated in the far right column. The results of these evaluations are summarized in Table F-14.

For this evaluation the following conservative assumptions have been made:

- Upstream receiving water at the lowest observed upstream receiving water hardness (i.e., 106 mg/L)
- No assimilative capacity for each metal in the upstream receiving water (i.e., metals concentration equal to CTR criteria calculated using a hardness of 106 mg/L)
- Effluent hardness at the lowest observed effluent hardness of 210 mg/L

Table F-5, below, is an example for lead where a design ambient hardness of 210 mg/L (i.e., downstream receiving water hardness at design low flow conditions) was used to calculate the CTR criteria. In this example, the mixed downstream ambient lead concentrations exceed the mixed CTR criteria at some mixtures. This example demonstrates that using a design ambient hardness of 210 mg/L to calculate the CTR criteria for lead is not fully protective under the reasonable worst-case conditions described above. The CTR criteria for silver and cadmium (acute) act in the same manner as lead. Tables are not provided in this discussion for these metals, but the results are similarly non-compliant with the CTR criteria. Based on the conservative assumptions discussed above, an iterative method was used to determine the applicable design ambient hardness that results in fully protective criteria for lead, silver, and cadmium (acute).

Table F-5. Lead Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Lead Concentration					**3.4 µg/L[1]**
				Lead Chronic Criterion[2]	**8.2 µg/L**
Mix[6]		**Mixed Downstream Ambient Concentration**			**Complies with CTR Criteria?**
		Hardness [3] (mg/L)	**CTR Criteria [4] (µg/L)**	**Lead [5] (µg/L)**	
High Flow	1%	107	3.47	3.47	**Yes**
	5%	111	3.64	3.67	**No**
	15%	122	4.08	4.14	**No**
	25%	132	4.53	4.62	**No**
	50%	158	5.70	5.81	**No**
	75%	184	6.91	7.01	**No**
Low Flow	100%	210	8.18	8.18	**Yes**

The following tables (Tables F-6 through F-13) demonstrate that the selected design ambient hardness used to calculate the CTR criteria result in protective criteria for all flow conditions (i.e., the mixed downstream ambient metals concentrations do not exceed the CTR criteria). Table F-14 summarizes the design ambient hardness for each metal.

Table F-6. Lead Evaluation (Design Ambient Hardness = 194 mg/L)

Assumed Upstream Receiving Water Lead Concentration					**3.4 µg/L[1]**
				Lead Chronic Criterion[2]	**7.4 µg/L**
Mix[6]		**Mixed Downstream Ambient Concentration**			**Complies with CTR Criteria?**
		Hardness [3] (mg/L)	**CTR Criteria [4] (µg/L)**	**Lead [5] (µg/L)**	
High Flow	1%	107	3.5	3.5	**Yes**
	5%	111	3.6	3.6	**Yes**
	15%	122	4.1	4.0	**Yes**
	25%	132	4.5	4.4	**Yes**
	50%	158	5.7	5.4	**Yes**
	75%	184	6.9	6.4	**Yes**
Low Flow	100%	210	8.2	7.4	**Yes**

Table F-7. Copper Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Copper Concentration					**9.8 µg/L[1]**
				Copper Chronic Criterion[2]	**18 µg/L**
Mix[6]		**Mixed Downstream Ambient Concentration**			**Complies with CTR Criteria?**
		Hardness [3] (mg/L)	**CTR Criteria [4] (µg/L)**	**Copper [5] (µg/L)**	
High Flow	1%	107	9.9	9.9	**Yes**
	5%	111	10	10	**Yes**
	15%	122	11	11	**Yes**
	25%	132	12	12	**Yes**
	50%	158	14	14	**Yes**
	75%	184	16	16	**Yes**
Low Flow	100%	210	18	18	**Yes**

Table F-8. Chromium III Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Chromium III Concentration					**220 µg/L[1]**
				Chromium III Chronic Criterion[2]	**380 µg/L**
Mix[6]		**Mixed Downstream Ambient Concentration**			**Complies with CTR Criteria?**
		Hardness [3] (mg/L)	**CTR Criteria [4] (µg/L)**	**Chromium III [5] (µg/L)**	
High Flow	1%	107	219	219	**Yes**
	5%	111	226	225	**Yes**
	15%	122	243	242	**Yes**
	25%	132	260	258	**Yes**
	50%	158	301	299	**Yes**
	75%	184	341	339	**Yes**
Low Flow	100%	210	380	380	**Yes**

Table F-9. Cadmium (Chronic) Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Cadmium Concentration					2.6 µg/L[1]
				Cadmium Chronic Criterion[2]	4.4 µg/L
Mix[6]		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Cadmium[5] (µg/L)	
High Flow	1%	107	2.6	2.6	Yes
	5%	111	2.7	2.7	Yes
	15%	122	2.9	2.9	Yes
	25%	132	3.1	3.0	Yes
	50%	158	3.5	3.5	Yes
	75%	184	4.0	4.0	Yes
Low Flow	100%	210	4.4	4.4	Yes

Table F-10. Cadmium (Acute) Evaluation (Design Ambient Hardness = 203 mg/L)

Assumed Upstream Receiving Water Cadmium Concentration					4.8 µg/L[1]
				Cadmium Acute Criterion[2]	10 µg/L
Mix[6]		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Cadmium[5] (µg/L)	
High Flow	1%	107	4.9	4.9	Yes
	5%	111	5.1	5.1	Yes
	15%	122	5.6	5.6	Yes
	25%	132	6.2	6.1	Yes
	50%	158	7.6	7.4	Yes
	75%	184	9.0	8.7	Yes
Low Flow	100%	210	10	10	Yes

Table F-11. Nickel Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Nickel Concentration					55 µg/L[1]
				Nickel Chronic Criterion[2]	98 µg/L
Mix[6]		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Nickel[5] (µg/L)	
High Flow	1%	107	55	55	Yes
	5%	111	57	57	Yes
	15%	122	61	61	Yes
	25%	132	66	66	Yes
	50%	158	77	76	Yes
	75%	184	87	87	Yes
Low Flow	100%	210	98	98	Yes

Table F-12. Silver (Acute) Evaluation (Design Ambient Hardness = 156 mg/L)

Assumed Upstream Receiving Water Silver Concentration					4.5 µg/L[1]
Silver Acute Criterion[2]					8.7 µg/L
Mix[6]		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Silver[5] (µg/L)	
High Flow	1%	107	4.6	4.5	Yes
	5%	111	4.9	4.7	Yes
	15%	122	5.7	5.1	Yes
	25%	132	6.5	5.5	Yes
	50%	158	8.9	6.6	Yes
	75%	184	11.6	7.6	Yes
Low Flow	100%	210	14.5	8.7	Yes

Table F-13. Zinc Evaluation (Design Ambient Hardness = 210 mg/L)

Assumed Upstream Receiving Water Zinc Concentration					126 µg/L[1]
Zinc Chronic Criterion[2]					220 µg/L
Mix[6]		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness[3] (mg/L)	CTR Criteria[4] (µg/L)	Zinc[5] (µg/L)	
High Flow	1%	107	127	127	Yes
	5%	111	131	131	Yes
	15%	122	141	141	Yes
	25%	132	152	151	Yes
	50%	158	176	175	Yes
	75%	184	200	200	Yes
Low Flow	100%	210	220	220	Yes

Footnotes for CTR Hardness-dependent Metals Tables (F-5 through F-13):

1 Highest assumed upstream receiving water metals concentration calculated using CTR equation (Equation 1) for chronic/ acute criterion at a hardness of 106 mg/L.

2 CTR Criteria calculated using CTR equation (Equation 1) for chronic/acute criterion at the design ambient hardness for the particular metal (see Table F-14).

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable mixture using Equation 2.

4 Mixed downstream ambient criteria are the chronic/acute criteria calculated using the CTR equation (Equation 1) at the mixed hardness.

5 Mixed downstream ambient metals concentration is the mixture of the receiving water and effluent metals concentrations at the applicable mixture using Equation 2.

6 The mixture percentage represents the fraction of effluent in the downstream ambient receiving water. The mixture ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Table F-14. Summary of Design Ambient Hardness and California Toxics Rule Criteria for Hardness-Dependent Metals

CTR Metals	Design Ambient Hardness (mg/L)	CTR Criteria (µg/L, total recoverable)[1]	
		acute	chronic
Copper	210	28	18
Chromium III	210	3200	380
Cadmium	203 (acute) 210 (chronic)	10	4.4
Lead	194	190	7.4
Nickel	210	880	98
Silver	156	8.7	--
Zinc	210	220	220

[1] Metal criteria rounded to two significant figures in accordance with the CTR.

3. Determining the Need for WQBELs

a. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents that were not detected in the effluent or receiving water at or above criteria/objectives); however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding appropriate effluent limitations.

Most constituents with no reasonable potential are not discussed in this Order. However, the following constituents were found to have no reasonable potential after assessment of the data:

i. **Aluminum**

(a) **WQO.** The Code of Federal Regulations (C.F.R.) promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 *Establishment of Numeric Criteria for Priority Pollutants for the State of California* (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBELs in the Central Valley Region's NPDES permits are based on the Basin Plan's narrative toxicity objective. The Basin Plan's *Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "*on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations… In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Regional Water Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining*

compliance with the narrative objective." (Basin Plan, IV-22). Relevant information includes, but is not limited to the following: (1) U.S. EPA Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, (2) National U.S. EPA Ambient Water Quality Criteria (NAWQC), (3) NAWQC-Correction, (4) site-specific aluminum studies conducted by dischargers within the Central Valley Region, and (5) site specific conditions at the Facility.

U.S. EPA's NAWQC. U.S. EPA recommended the NAWQC aluminum acute criterion of 750 µg/L based on test waters with a pH of 6.5 to 9.0. U.S. EPA also recommended in the NAWQC an aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as $CaCO_3$.

(1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is U.S. EPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the chronic criterion of 87 µg/L recommended in the NAWQC.

(2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for U.S. EPA's chronic criterion. Though this test study shows chronic toxic effects of 4% reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day exposure; so again, the applicability of the NAWQC chronic criterion of 87 µg/L is questionable.

Site-specific Conditions. As described above, U.S. EPA developed the chronic criterion of 87 µg/L under low pH and hardness conditions. The table below compares the test conditions for the applicability of the chronic criterion to site-specific water quality conditions.

Monitoring data for the Facility's effluent and Sycamore Creek indicate that the pH and hardness values within the effluent and the receiving water are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table F-15, below, and therefore, the Central Valley Water Board does not expect aluminum to be as reactive in the Sycamore Creek as in the previously described toxicity tests.

For the reasons listed below, the Central Valley Water Board believes the U.S. EPA's chronic criterion of 87 µg/L is overly stringent for the Facility's discharge to Sycamore Creek:

1) The Central Valley Water Board does not expect aluminum to be as reactive in Sycamore Creek as in the previously described toxicity tests since the pH and hardness values are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed. The pH in Sycamore Creek, downstream of the Facility's discharge point, ranged from 6.3 to 8.6 with an average of 7.1 based on 79 monitoring results obtained between February 2009 and February 2013. The hardness in Sycamore Creek, downstream of the Facility's discharge point, ranged from 110 mg/L to 320 mg/L with an average of 231 mg/L based on 17 monitoring results obtained between February 2009 and February 2013.

Table F-15. Site Specific pH and Hardness Characteristics

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Sycamore Creek (upstream of Discharge Point 001)
pH	standard units	6.0 – 6.5	6.5 – 8.1	6.2 – 8.7
Hardness, Total (as $CaCO_3$)	mg/L	12	210 - 500	106 - 390

2) As described above, the U.S. EPA's aluminum chronic criterion was lowered to 87 µg/L in the NAWQC for aluminum due to the results of two independent aluminum toxicity tests for striped bass and brook trout. The Central Valley Water Board does not expect striped bass or brook trout to be located in Sycamore Creek. Sycamore Creek goes significant periods of time with minimal to no flow. Upstream of the Facility's discharge point to Sycamore Creek is Four Island Lake. Four Island Lake is a man-made lake that is supplemented with groundwater. According to the Discharger, water is only released into Sycamore Creek from Four Island Lake during significant storm events. Therefore, due to the conditions in Sycamore Creek, staff does not expect either striped bass or brook trout to be found within Sycamore Creek. In addition, the Tulare Lake Basin Plan does not designate cold freshwater habitat (COLD) as a beneficial use for Sycamore Creek.

Local Environmental Conditions. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. As shown in the following table, all EC_{50} toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in surface waters within the Central Valley Region, including the Sycamore Creek, are less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that U.S. EPA used for the basis of establishing the chronic criterion of 87 µg/L.

Table F-16. Central Valley Region Site Specific Toxicity Data

Discharger (City)	Species	Test Waters	Hardness Value	pH	Total Aluminum EC_{50} Value	WER
Auburn	*Ceriodaphnia dubia*	Effluent	99	7.44	>5270	>19.3
	" "	Surface Water	16	7.44	>5160	>12.4
Manteca	" "	Surface Water/Effluent	124	9.14	>8000	N/C
	" "	Effluent	117	7.21	>8700	>27.8
	" "	Surface Water	57	7.58	7823	25.0
	" "	Effluent	139	7.97	>9500	>21.2
	" "	Surface Water	104	8.28	>11000	>24.5
	" "	Effluent	128	7.78	>9450	>25.0
	" "	Surface Water	85	7.85	>9700	>25.7
	" "	Effluent	106	7.66	>11900	>15.3
	" "	Surface Water	146	7.81	>10650	>13.7
Modesto	" "	Surface Water/Effluent	120/156	8.96	31604	211
Yuba City	" "	Surface Water/Effluent	114/164[1]	7.60/7.46	>8000	>53.5
Placer County	" "	Effluent	150	7.4 – 8.7	>5000	>13.7
Manteca	*Daphnia magna*	Surface Water/Effluent	124	9.14	>8350	N/C
Modesto	" "	Surface Water/Effluent	120/156	8.96	>11900	>79.6
Yuba City	" "	Surface Water/Effluent	114/164[1]	7.60/7.46	>8000	>53.5
Manteca	*Oncorhynchus mykiss* (rainbow trout)	Surface Water/Effluent	124	9.14	>8600	N/C
Auburn	" "	Surface Water	16	7.44	>16500	N/C
Modesto	" "	Surface Water/Effluent	120/156	8.96	>34250	>229
Yuba City	" "	Surface Water/Effluent	114/164 [1]	7.60/7.46	>8000	>53.5

N/C = Not calculated

[1] Hardness values may be biased high because the EDTA titrimetic method is subject to interferences that measure as hardness (barium, cadmium, lead, manganese, strontium, and zinc are measured as hardness) producing hardness numbers that are likely to be greater than the calculation of hardness based upon the ICP analysis of calcium and magnesium. Upstream receiving water hardness ranged from 30 to 50.9 mg/L as $CaCO_3$ between January 2008 and August 2011. Furthermore, the upstream receiving water hardness was 37 mg/L as $CaCO_3$ on 4 October 2005, seven days prior to the Feasibility Assessment (first phase of a Water Effects Ratio study) sample collection date of 11 October 2005. It is likely that matrix interferences from other metals were responsible for the unexpected hardness values reported by Pacific EcoRisk.

The Discharger has not conducted a toxicity test for aluminum; however, as shown in Table F-16, toxicity tests for aluminum were done in receiving waters with similar water quality characteristics as Sycamore Creek. Therefore, the aluminum toxicity test studies are relevant and appropriate in this case for use in determining the specific numerical criteria to be used in determining compliance with the Basin Plan's narrative toxicity objective. The City of Auburn toxicity test in the Auburn Ravine resulted in the most stringent site-specific aluminum objective. The Auburn Ravine aluminum toxicity study resulted in a site-specific aluminum objective of 1,080 µg/L. This new information, and review of the toxicity tests U.S.

EPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to Sycamore Creek.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions in the discharge, the Central Valley Water Board has used best professional judgment in determining the appropriate method for this non-priority pollutant constituent.

For protection of acute toxicity to aquatic life, the NAWQC recommends the acute criterion of 750 µg/L. The MEC for aluminum from November 2008 to December 2013 is 320 µg/L, as total recoverable. The maximum reported upstream receiving water concentration for aluminum, from February 2009 to February 2013, is 2,400 µg/L, as total recoverable. Table F-17 provides a summary of the upstream receiving water data reported between February 2009 to February 2013.

Table F-17. Upstream Aluminum Receiving Water Data

Location	Parameter	Qualifier	Result (µg/L)	Sampling Date
Upstream Receiving Water	Aluminum, Total	=	80	2/20/2009
Upstream Receiving Water	Aluminum, Total	ND	(MDL = 50)	3/2/2009
Upstream Receiving Water	Aluminum, Total	=	340	1/20/2010
Upstream Receiving Water	Aluminum, Total	=	260	2/8/2010
Upstream Receiving Water	Aluminum, Total	=	200	3/3/2010
Upstream Receiving Water	Aluminum, Total	=	400	4/7/2010
Upstream Receiving Water	Aluminum, Total	=	180	5/5/2010
Upstream Receiving Water	Aluminum, Total	=	170	6/9/2010
Upstream Receiving Water	Aluminum, Total	=	440	11/24/2010
Upstream Receiving Water	Aluminum, Total	=	33	12/8/2010
Upstream Receiving Water	Aluminum, Total	=	**2400**	1/5/2011
Upstream Receiving Water	Aluminum, Total	=	600	2/2/2011
Upstream Receiving Water	Aluminum, Total	=	71	3/4/2011
Upstream Receiving Water	Aluminum, Total	=	170	4/6/2011
Upstream Receiving Water	Aluminum, Total	=	89	5/6/2011
Upstream Receiving Water	Aluminum, Total	=	310	6/10/2011
Upstream Receiving Water	Aluminum, Total	=	**1600**	4/6/2012
Upstream Receiving Water	Aluminum, Total	=	680	5/4/2012
Upstream Receiving Water	Aluminum, Total	=	34	1/9/2013
Upstream Receiving Water	Aluminum, Total	ND	(MDL = 26)	2/27/2013

ND = Non-Detect
MDL = Method Detection Level

As shown in Table F-17, two of the reported upstream aluminum receiving water results (5 January 2011 and 6 April 2012) exceed the NAWQC for aluminum of 750 µg/L. Central Valley Water Board staff evaluated both results since they are significantly higher than any of the other reported results.

When evaluating ambient background concentrations, Section 1.4.3.1 of the SIP states that the Water Board has discretion to consider samples invalid that have been taken during peak flows of significant storm events. As previously mentioned, aluminum is not a CTR constituent; therefore, the Central Valley Water Board is not required to follow the procedures in the SIP. However, Central Valley Water Board staff looked at the historical precipitation data around 5 January 2011 and 6 April 2012. The historical precipitation data does show a large storm event on 29 December 2010 which resulted in approximately 1.9 inches of rain and approximately 4 inches of snow. This significant storm event likely caused the high reported aluminum concentration on 5 January 2011.

On 6 April 2012, the Discharger also sampled the effluent and downstream receiving water for aluminum. The downstream receiving water concentration was 160 µg/L. The effluent concentration was 260 µg/L. Both the corresponding effluent and downstream receiving results were significantly lower than the reported upstream receiving water result on 6 April 2012. Therefore, the 6 April 2012 upstream receiving water result is highly suspicious and does not appear to be a valid result.

The Central Valley Water Board concludes that both the 5 January 2011 and 6 April 2012 upstream receiving water samples are inadequate to use in the RPA. Both samples have significantly high results that may be attributable to conditions (i.e., weather and improper sample collection) that render them invalid for use in the RPA. In addition, the Discharger reported 16 downstream receiving water aluminum results (excluding the 5 January 2011 result). All of the reported downstream receiving water aluminum results (excluding the 5 January 2011 result for reasons mentioned above) were below the 750 µg/L aluminum acute criterion. Therefore, based on the effluent and upstream and downstream receiving water aluminum data, aluminum in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria or objectives.

ii. **Copper**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the receiving water and effluent.

(b) **RPA Results.** Section IV.C.2 of this Fact Sheet includes procedures for conducting the RPA for hardness-dependent CTR metals, such as copper. The CTR includes hardness-dependent criteria for copper for the receiving water. The maximum observed upstream receiving water copper concentration was 4.8 µg/L, based on 12 samples collected between February 2009 and February 2013. The RPA was conducted using the upstream receiving water hardness to calculate the criteria for comparison to the maximum ambient background concentration, and likewise using the reasonable worst-case downstream hardness to compare the

maximum effluent concentration. The table below shows the specific criteria used for the RPA.

	CTR Chronic Criterion (Total Recoverable)	Maximum Concentration (Total Recoverable)	Reasonable Potential? (Y/N)
Upstream Receiving Water	9.8 µg/L[1]	4.8 µg/L	No [3]
Design Ambient Hardness	18 µg/L[2]	15 µg/L	No [4]

[1] Based on lowest observed upstream hardness of 106 mg/L (as $CaCO_3$)
[2] Based on reasonable worst-case downstream hardness of 210 mg/L (as $CaCO_3$)
[3] Per Section 1.3, step 4 of the SIP.
[4] Per Section 1.3, step 6 of the SIP.

Based on the available data, copper in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

iii. **Chromium (VI)**

(a) **WQO.** The CTR includes maximum 1-hour average and 4-day average criteria of 16 µg/L and 11 µg/L, respectively, for total recoverable chromium (VI) for the protection of freshwater aquatic life.

(b) **RPA Results.** Previous Order R5-2008-0121 required the Discharger to monitor for chromium (VI) because the maximum observed upstream receiving water chromium (VI) of 54 µg/L exceeded the applicable CTR criteria. The Discharger reported 44 effluent chromium (VI) results between November 2008 and December 2013. The maximum reported chromium (VI) result was 2.2 µg/L. The Discharger also reported 23 upstream receiving water chromium (VI) results between February 2009 and February 2013. The maximum reported upstream receiving water results was 0.41 µg/L.

Based on the chromium (VI) data reported, the Facility's discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life.

iv. **Cyanide**

(a) **WQO.** The CTR includes maximum 1-hour average and 4-day average criteria of 22 µg/L and 5.2 µg/L, respectively, for cyanide for the protection of freshwater aquatic life.

(b) **RPA Results.** The Discharger reported three effluent and three receiving water monitoring results for cyanide. The maximum reported effluent cyanide concentration was 1.7 µg/L (estimated value, RL = 5 µg/L). The maximum reported upstream receiving water result was 4.2 µg/L (estimated value, RL = 5 µg/L). Therefore, based on the reported results for cyanide, the Facility's discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide.

v. **Dibromochloromethane**

(a) **WQO.** The CTR includes a dibromochloromethane criterion of 34 µg/L for the protection of human health and is based on a one-a-million cancer risk for waters from which organisms are consumed.

(b) **RPA Results.** The Discharger reported three effluent and three receiving water monitoring results for dibromochloromethane. The maximum reported effluent result was 7.8 µg/L. All three of the receiving water results were non-detect (lowest method detection level equaled 0.13 µg/L). Therefore, based on the reported results for dibromochloromethane, the Facility's discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dibromochloromethane.

vi. **Selenium**

(a) **WQO.** The CTR includes a maximum 4-day average criterion of 5.0 µg/L for total recoverable selenium for the protection of freshwater aquatic life.

(b) **RPA Results.** The Discharger reported three effluent and three receiving water monitoring results for selenium. The maximum reported effluent result for selenium was 2.2 µg/L. The maximum reported receiving water result for selenium was 0.62 µg/L (estimated value, RL = 2.0 µg/L). Therefore, based on the reported results for selenium, the Facility's discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for selenium.

b. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for un-ionized ammonia, BOD_5, pH, total coliform, total suspended solids and total residual chlorine. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Ammonia**

(a) **WQO.**

(1) **Total Ammonia (as N).** In August 2013, U.S. EPA updated its National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia[1]. The 2013 NAWQC for ammonia recommends acute (1-hour average; criteria maximum concentration or CMC) and chronic (30-day average; criteria continuous concentration or CCC) standards that vary based on pH and temperature. U.S. EPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. The 2013 NAWQC for ammonia takes into account data for several sensitive freshwater mussel species and non-pulmonate snails that had not previously been tested.

[1] *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, published August 2013 [EPA 822-R-13-001]

U.S. EPA found that as pH and temperature increased, both the acute and chronic toxicity of ammonia increased for invertebrates. However, U.S. EPA found that only pH significantly influenced acute and chronic ammonia toxicity for fish. Therefore, the 2013 acute NAWQC for ammonia is primarily based on the ammonia effects on species in the genus *Oncorhyncus* (salmonids) at lower temperatures and invertebrates at higher temperatures. However, due to the significant sensitivity unionid mussels have to the chronic toxicity effects of ammonia, the 2013 chronic NAWQC for ammonia is determined primarily by the effects of mussels.

The 2013 ammonia NAWQC document states that "*unionid mussel species are not prevalent in some waters, such as the arid west.*" The 2013 ammonia NAWQC also states that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*" The 2013 ammonia NAWQC document, therefore, includes a recalculation procedure for acute and chronic criteria for waters where mussels are not present. The 2013 ammonia NAWQC also provides criteria for waters where *Oncorhynchus* species are not present and where protection of early life stages of fish genera is unnecessary.

A report prepared by The Nature Conservancy, *Sensitive Freshwater Mussel Surveys in the Pacific Southwest Region: Assessment of Conservation Status (*published August 2010), demonstrates the results of a strategic mussel study and survey conducted during 2008-2009. The study does not contain any survey information for Sycamore Creek in the vicinity of the Facility discharge. However, the study surveyed two sites within Kern County and both reported no mussels present.

The receiving water conditions also likely prohibit mussels being present in Sycamore Creek. Freshwater mussels require freshwater to survive. Sycamore Creek is dry the majority of the time since the Facility only discharges to Sycamore Creek when the recycled water Use Area does not require recycled water. In addition, water is only released into Sycamore Creek from Four Island Lake when significant storm events occur. Therefore, the significant dry periods that occur in Sycamore Creek likely inhibit mussels being present in or downstream of Sycamore Creek.

On 3 April 2014, the Central Valley Water Board issued a Water Code Section 13267 Order to the Discharger which requires additional information from the Discharger to evaluate the presence of mussels in Sycamore Creek. Depending on the results of the information submitted, this Order may be reopened to modify the effluent limitations for ammonia. However, since the Central Valley Water Board is not aware of any documentation available recording the presence of mussels in Sycamore Creek and the receiving water

conditions, the site-specific ammonia criteria for waters where mussels are absent were used.

Sycamore Creek also does not contain the beneficial uses of cold freshwater habitat (COLD) or spawning, reproduction, and/or early development (SPWN). In addition, the Central Valley Water Board is not aware of any documentation available indicating the presence of salmonids or early fish life stages in Sycamore Creek downstream of the Facility's discharge point. Therefore, the recommended ammonia criteria for waters were salmonids and early life stages are absent were used.

The acute criterion was calculated using the paired pH (8.1) and temperature (9°C) set that resulted in the most stringent acute criterion (7.2 mg/L). The chronic criterion was calculated using the paired 30-day running average effluent pH (7.7) and temperature (20°C) set that resulted in the most stringent chronic criterion (4.5 mg/L). Based on the calculated acute criterion, the applicable maximum daily and average monthly total ammonia WQBELs are 7.2 mg/L and 2.0 mg/L, respectively.

(2) **Un-ionized Ammonia (as N).** The Basin Plan includes a water quality objective that states "[w]*aters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH_3) to exceed 0.025 mg/L (as N) in receiving waters*."

(b) **RPA Results.** The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to fish and would violate the Basin Plan narrative toxicity objective and the Basin Plan water quality objective if discharged to the receiving water. Reasonable potential therefore exists and effluent limitations are required as explained in more detail below.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative*

assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters)." U.S. EPA's *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991 (TSD) also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, U.S. EPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems*." (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan narrative toxicity objective. Although the Discharger nitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged in concentrations that would cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.

(c) **WQBELs.**

(1) **Total Ammonia (as N).** This Order contains an effluent limitation for un-ionized ammonia (as N), which is more stringent than effluent limitations for total ammonia (as N).

(2) **Un-ionized Ammonia (as N).** This Order includes a final average weekly effluent limitation (AWEL) of 0.025 mg/L for un-ionized ammonia (as N) based on the Basin Plan water quality objective. This Order also includes an average monthly effluent limitation (AMEL) of 0.015 mg/L. The un-ionized AMEL is based on the ammonia Basin Plan water quality objective and calculated in accordance with the procedures of section 1.4 of the SIP.

(d) **Plant Performance and Attainability.** The Discharger did not report un-ionized ammonia for the effluent during the previous Permit term.

However, based on staff calculations from submitted effluent ammonia, temperature, and pH data, the Discharger did not exceed a 0.015 mg/L un-ionized ammonia (as N) concentration. Therefore, the Central Valley Water Board concludes that immediate compliance with the un-ionized ammonia effluent limitations is feasible.

ii. **Chlorine Residual**

(a) **WQO.** U.S. EPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, U.S. EPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems."* (TSD, p. 50)

The Discharger uses chlorine for disinfection, which is extremely toxic to

aquatic organisms. Although the Discharger uses sodium metabisulfite to dechlorinate the effluent prior to discharge to Sycamore Creek, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) **WQBELs.** The U.S. EPA's TSD contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can be monitored continuously (the Discharger is currently not required to monitor for total residual chlorine continuously, but the Central Valley Water Board may at a later date require continuous monitoring for total residual chlorine) it is impracticable to set average monthly, average weekly, or maximum daily effluent limitations that are protective of the receiving water beneficial uses. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively, based on U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) **Plant Performance and Attainability.** Treated wastewater is discharged to a 250,000 gallon concrete-lined effluent storage pond prior to discharge to Sycamore Creek. The storage pond allows the Discharger to only discharge to Sycamore Creek when the residual chlorine is below the applicable effluent limitations (i.e., non-detect). In addition, the Discharger can add sodium metabisulfite to dechlorinate if needed. Therefore, the Central Valley Water Board concludes that immediate compliance with the final chlorine effluent limitations is feasible.

iii. **Pathogens**

(a) **WQO.** The Division of Drinking Water has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as *"…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the Division of Drinking Water's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The

stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) **RPA Results.** Raw domestic wastewater inherently contains human pathogens that threaten human health and life, and constitute a threatened pollution and nuisance under Water Code Section 13050 if discharged untreated to the receiving water. Reasonable potential for pathogens therefore exists and WQBELs are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "State *implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters)*." U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The beneficial uses of Sycamore Creek include water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBELs are required.

(c) **WQBELs.** Consistent with the level of disinfection required by Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

The tertiary treatment process, or equivalent, is capable of reliably treating wastewater to a turbidity level of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the Division of Drinking Water recommended Title 22 disinfection criteria, weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity of 2 NTUs as a daily average; 5 NTUs, not to be exceeded more than 5 percent of the time within a 24-hour period; and 10 NTUs as an instantaneous maximum.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

This Order contains effluent limitations for BOD_5, total coliform, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements, and previously established these limitations in Order R5-2008-0121.

(d) **Plant Performance and Attainability.** The Facility is designed to provide tertiary treatment, including chlorine disinfection. The Central Valley

Water Board, therefore, concludes that immediate compliance with these effluent limitations is feasible.

iv. **pH**

(a) **WQO.** The Basin Plan includes a water quality objective for surface waters that "*[t]he pH of water shall not be depressed below 6.5, raised above 8.3...*"

(b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBELs are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or* ***may*** *be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

Order R5-2008-0121 stated that compliance with the pH effluent limitation was to be assessed at Monitoring Location EFF-001A (treated effluent after the chlorine contact chamber prior to discharge to the storage pond). The effluent pH at Monitoring Location EFF-001A ranged from 6.5 to 8.1 based on 1,567 monitoring results reported between August 2008 and June 2014. Although it appears the Discharger has proper pH controls in place, the Facility's influent pH varies due to the nature of domestic

sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.

(c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.3 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** Based on 1,567 samples taken from August 2008 to June 2014, the effluent pH was maintained between 6.5 and 8.1. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

c. **Basin Plan Salinity Effluent Limitations**

i. **Limits.** The Basin Plan at page IV-10 includes effluent limitations for discharges to navigable waters. The Basin Plan requires at a minimum, discharges to surface waters, including stream channels, to comply with the following effluent limitations:

(a) The maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent;

(b) A chloride content of 175 mg/L; and

(c) A boron content of 1.0 mg/L.

ii. **Data Analysis Results**

(a) **Electrical Conductivity.** The Discharger submitted 69 effluent monitoring results for electrical conductivity (@ 25°C) between August 2008 and June 2014. The average reported electrical conductivity effluent concentration was 876 µmhos/cm, with a range from 723 µmhos/cm and 1,070 µmhos/cm.

(b) **Chloride.** The Discharger submitted seven effluent monitoring results for chloride between August 2008 and June 2014. The average reported chloride effluent concentration was 88 mg/L, with a range from 64 mg/L and 110 mg/L.

(c) **Boron.** The Discharger submitted seven effluent monitoring results for boron between August 2008 and June 2014. The average reported boron effluent concentration was 453 µg/L, with a range from 280 µg/L and 630 µg/L.

Table F-18. Basin Plan Salinity Effluent Limitations

Parameter	Basin Plan Effluent Limitations	Effluent Results	
		Average	Maximum
Electrical Conductivity (µmhos/cm)	1,000 [1]	876	1070
Chloride (mg/L)	175	88	110
Boron (mg/L)	1.0	0.453	0.630

[1] The maximum electrical conductivity of a discharge shall not exceed the quality of the source water plus 500 umhos or 1,000 µmhos/cm, whichever is more stringent.

(d) **WQBELs**. Previous Orders R5-2002-0113 and R5-2008-0121 included an annual average electrical conductivity (@ 25°C) effluent limitation of source water plus 400 µmhos/cm/cm or a maximum of 1,0000 µmhos/cm, whichever less. The incremental increase limit of 400 µmhos/cm is more stringent than the Basin Plan limitation. The previous Orders determined that the Discharger could comply with a more stringent electrical conductivity effluent limitation than required by the Basin Plan and, therefore, included a source water plus 400 µmhos/cm electrical conductivity effluent limitation. Central Valley Water Board staff evaluated the source water and effluent electrical conductivity data reported during the previous Permit term. Based on the available data, the Facility's discharge, at times, was over 400 µmhos/cm greater than the reported source water electrical conductivity. Therefore, the electrical conductivity incremental increase effluent limitation is relaxed to 500 µmhos/cm, in accordance with the Basin Plan.

This Order also establishes effluent limitations for chloride and boron that implement the Basin Plan effluent limitations for discharges to navigable waters. The chloride (175 mg/L) and boron (1.0 mg/L) Basin Plan effluent limitations are included as average monthly effluent limitations.

(e) **Plant Performance and Attainability.** The electrical conductivity effluent limitation is included as a 12-month rolling average. The maximum reported effluent 12-month rolling average for electrical conductivity, based on data reported from August 2008 to June 2014, was 900 µmhos/cm. The Discharger did not consistently report source water electrical conductivity data. However, based on the available data reported from the previous Permit term, it appears that the Discharger can immediately comply with the electrical conductivity 500 µmhos/cm plus source water effluent limitation. Therefore, the Central Valley Water Board concludes that immediate compliance with the electrical conductivity effluent limitation included in this order is feasible.

As previously mentioned, the Discharger reported a maximum chloride and born effluent concentration of 88 mg/L and 0.453 mg/L, respectively. Neither the maximum reported chloride or boron effluent concentration from August 2008 to June 2014 exceeded the applicable effluent limitations included in this Order. Therefore, the Central Valley Water Board concludes that immediate compliance with the chloride and boron effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for un-ionized ammonia, BOD_5, boron, chloride, electrical conductivity, pH, total coliform organisms, total residual chlorine, and total suspended solids. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below.

b. **Effluent Concentration Allowance.** For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

ECA = C + D(C – B) *where C>B, and*
ECA = C *where C≤B*

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

c. **Basin Plan Objectives.** For non-priority pollutant WQBELs based on site-specific numeric Basin Plan objectives (e.g., unionized ammonia), the effluent limitations are applied directly as the ECA as an AWEL and an AMEL is calculated using statistical multipliers based on a 95th percentile.

d. **Basin Plan Limits.** The Basin Plan includes effluent limitations for discharges to surface water for electrical conductivity, chloride, and boron. These limitations are included as either a 12-month rolling average limitation or average monthly limitation in this Permit. The statistical procedures included in the SIP and TSD are for calculating WQBELs from water quality objectives/criteria. Therefore, since the Basin Plan specifies limitations, not objectives, for these constituents it is impracticable to statistically develop other limitations.

e. **Aquatic Toxicity Criteria.** Priority pollutant WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutant WQBELs based on acute and chronic aquatic toxicity criteria, an average weekly effluent limitation is calculated, instead of a MDEL, using a statistical multiplier based on a 98th percentile, unless impracticable.

f. **Human Health Criteria.** WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to ECA and a statistical multiplier was used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where:

$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Summary of Water Quality-Based Effluent Limitations
Discharge Point No. 001

Table F-19. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	20	--	--
	lbs/day	21	31	42	--	--
Total Suspended Solids (TSS)	mg/L	10	15	20	--	--
	lbs/day	21	31	42	--	--
pH	standard units	--	--	--	6.5	8.3
Ammonia, un-ionized (as N)	mg/L	0.015	0.025	--	--	--
Boron	mg/L	1.0	--			
Chloride	mg/L	175	--			
Total Coliform Organisms	MPN/100 mL	23 [1]	2.2 [2]	--		240 [3]
Total Residual Chlorine	mg/L	--	0.011 [4]	--	--	0.019 [5]
Electrical Conductivity @ 25°C	µmhos/cm	1,000 [6]	--	--	--	--

[1] More than once in any 30-day period.
[2] Applied 7-day median.
[3] At any time.
[4] Applied as a 4-day average.
[5] Applied as a 1-hour average.
[6] The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic*

life." (Basin Plan at page III-6) The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*"

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA . U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "*Guidance for NPDES Permit Issuance*", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Consistent with Order R5-2008-0121, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay ---------- 70%
Median for any three consecutive bioassays ---------- 90%

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at page III-6) Based on a chronic WET test performed on January 2009, the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective, as shown in Table F-20 below.

Table F-20. Whole Effluent Chronic Toxicity Testing Results

	Fathead Minnow *Pimephales promelas*	**Water Flea** *Ceriodaphnia dubia*	**Green Algae** *Selenastrum capricornutum*

Date	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
January 2009	1	1	1	1	1

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.*" The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 C.F.R. 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E section V.). If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R. 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 C.F.R. 122.45(f)(1),

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the design flow (Average Dry Weather Flow) permitted in section IV.A.1.g. of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, U.S. EPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) For BOD_5, pH, total residual chlorine, total suspended solids, and total coliform organisms, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

The Clean Water Act specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for copper, electrical conductivity, settleable solids, and turbidity. The effluent limitations for these pollutants are less stringent than those in Order No. R5-2008-0121. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

   i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDLs or WLAs will assure the attainment of such water quality standards.

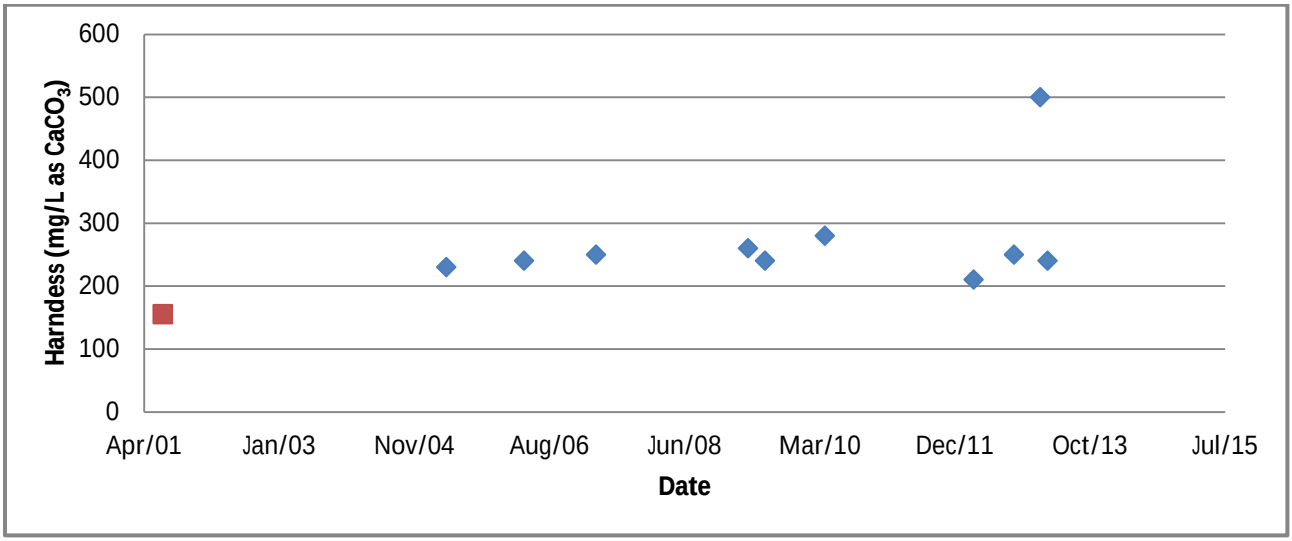
   ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

Sycamore Creek is considered an attainment water for copper, electrical conductivity, and settleable solids because the receiving water is not listed as impaired on the 303(d) list for this constituent.[1] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation/removal of the effluent limitations for copper, electrical conductivity, and settleable solids from Order R5-2008-0121 meets the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations contained in section 402(o)(1). CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

i. **Copper.** As described further in section IV.C.2.d. of this Fact Sheet, copper is a hardness dependent metal. Order R5-2008-0121 used a worst-case hardness of 155 mg/L to calculate the copper criteria. The 155 mg/L (as $CaCO_3$) effluent hardness result was the minimum of only four effluent samples collected between 2001 and 2007. The 155 mg/L was the result of an effluent sample collected on July 2001. The Discharger reported seven hardness results from August 2008 to June 2014. The lowest reported effluent hardness was 210 mg/L (as CaCO3). As illustrated in the graph below, all the effluent hardness results reported after July 2001 are higher than the July 2001 hardness result of155 mg/L. Therefore, the Central Valley Water Board concludes that the effluent hardness result collected in 2001 is unrepresentative of the Facility's current discharge and the next lowest reported hardness result (210 mg/L) was used to calculate the applicable copper criteria. As described in section IV.C.2.d. of this Fact Sheet, when a hardness of 210 mg/L is used to calculate the applicable copper criteria, the Facility's discharge does not show reasonable potential to cause or contribute to an exceedance of the applicable CTR copper criteria.

[1] "*The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list.*" State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.



ii. **Settleable Solids.** Effluent monitoring data collected between August 2008 to June 2014 for settleable solids indicate that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative objective for settleable solids.

iii. **Electrical Conductivity.** Previous Order R5-2008-0121 included an effluent maximum electrical conductivity effluent limitation of 400 µmhos/cm plus source water. This electrical conductivity limitation in Order R5-2008-0121 was carried over from Order R5-2002-0013. Order R5-2002-0013 determined that the Discharger could meet a more stringent electrical conductivity effluent limitation than required by the Basin Plan and, therefore, included a maximum electrical conductivity effluent limitation of 400 µmhos/cm over source water.

As described in section IV.C.3.c. of this Fact Sheet, the Central Valley Water Board determined that the Discharger can no longer comply with the electrical conductivity 400 µmhos/cm plus source water maximum effluent limitation. Based on effluent electrical conductivity monitoring data from August 2008 to June 2014, the effluent electrical conductivity incremental increase is at times greater than 400 µmhos/cm.

Thus, the removal of the effluent limitations for settleable solids and copper and relaxation of the effluent limitations for electrical conductivity from previous Order R5-2008-0121 is in accordance with CWA 402(o)(2)(B)(i), which allows for the relaxation and removal of effluent limitations based on information that was not available at the time of permit issuance.

c. **Turbidity.** Order R5-2008-0121 contained effluent limitations for turbidity. The prior limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains operational turbidity specifications to be met in lieu of effluent limitations and does not include effluent limitations for turbidity. However, the performance-based specification in this Order is an equivalent limit that is not less

stringent, and therefore does not constitute backsliding.

The revised operational specifications for turbidity are the same as the effluent limitations in Order R5-2008-0121. These revisions are consistent with State regulations implementing recycled water requirements. The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 C.F.R. 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order R5-2008-0121 and, therefore, does not allow degradation.

4. Antidegradation Policies

The Central Valley Water Board found in Order R5-2008-0121 that "*[t]he permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution 68-16.*" This Order does not allow for an increase in flow to the receiving water from previous Order R5-2008-0121. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order removes existing effluent limitations for settleable solids. The Central Valley Water Board finds the removal of the effluent limitations is not expected to result in an increase in pollutants or any additional degradation of the receiving water since (1) the Facility provides tertiary treatment and (2) the monitoring data during the previous Permit term showed that the effluent settleable solids concentration was consistently non-detect (i.e., below analytical levels). Thus, the removal of the settleable solids effluent limitations in this Order is consistent with antidegradation provision 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16.

This Order also removes the existing effluent limitations for copper. As described in section IV.D.3. of this Fact Sheet, a worst-case hardness of 210 mg/L (as $CaCO_3$) was used to calculate the CTR criteria for copper, as opposed to 155 mg/L (as $CaCO_3$) used in Order R5-2008-0121. The 155 mg/L hardness result was based on a 2001 sample. The Central Valley Water Board concludes that the 155 mg/L hardness value is unrepresentative of the Facility's current discharge. The copper effluent limitations were removed since the Facility's discharge did not show reasonable potential to cause or contribute to an exceedance of the CTR criteria when a 210 mg/L hardness was used to calculate the applicable copper criteria. The Discharger indicated, through written correspondences with the Central Valley Water Board, that no specific actions were taken to minimize the copper concentration in the effluent since the copper effluent monitoring data did not exceed the applicable limits. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations is not expected to result in an increase in pollutants or any additional degradation of the receiving water. Consequently, the removal of the copper effluent limitations is consistent with the antidegradation provision 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16.

This Order relaxes the electrical conductivity effluent limitation. As described in section IV.D.3. of this Fact Sheet, the discharge incremental increase over source water is

relaxed from 400 µmhos/cm to 500 µmhos/cm since the monitoring data showed, at times, that the incremental increase was greater than 400 µmhos/cm. However, this Order carries over the 1,000 µmhos/cm maximum effluent limitation. In addition, there are no known industries that discharge to the Facility collection system that could cause an increase in the in the Facility's influent electrical conductivity concentration. Therefore, the Central Valley Water Board finds the relaxation of the electrical conductivity limitation is not expected to result in an increase in pollutants or any additional degradation of the receiving water. Consequently, the relaxation of the electrical conductivity effluent limitation is consistent with the antidegradation provision 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for BOD_5 and TSS. Restrictions on these are discussed in IV.B.2. of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Point No. 001

Table F-21. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10	15	20	--	--	TTC
	lbs/day	21	31	42	--	--	
	% removal	85	--	--	--	--	CFR
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day	21	31	42	--	--	

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
	% removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.3	BP
Ammonia, un-ionized (as N)	mg/L	0.015	0.025	--	--	--	BP
Boron	mg/L	1.0	--	--	--	--	BP
Chloride	mg/L	175	--	--	--	--	BP
Total Residual Chlorine	mg/L	--	0.011 [2]	0.019 [3]	--	--	BP, NAWQC
Total Coliform Organisms	MPN/ 100 mL	23 [4]	2.2 [5]	--	--	240 [6]	BP (Title 22)
Average Dry Weather Flow	mgd	0.25	--	--	--	--	DF
Electrical Conductivity	µmhos/cm	1,000 [7]	--	--	--	--	BP
Acute Whole Effluent Toxicity	% Survival	--	--	[8]	--	--	BP

[1] **DF** – Based on the design flow of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated treatment plant.
BP – Based on water quality objectives contained in the Basin Plan.
CFR – Based on secondary treatment standards contained in 40 C.F.R. Part 133.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
Title 22 – Based on the Division of Drinking Water Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] Applied as a 4-day average.
[3] Applied as a 1-hour average.
[4] No more than once in any 30-day period.
[5] Applied as a 7-day median.
[6] At any time.
[7] The 12-month rolling average electrical conductivity (@ 25°C) of the discharge shall not exceed the 12-month rolling average electrical conductivity (@ 25°C) of the source water plus 500 µmhos/cm, or a maximum of 1,000 µmhos/cm, whichever is more stringent.
[8] Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
i. 70%, minimum for any one bioassay.
ii. 90%, median for any three consecutive bioassays.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications

The Discharger distributes and uses recycled water produced at the Facility for landscape irrigation around the Facility and irrigation of the Bear Valley Oak Tree Country Club golf course. This Order includes recycled water specifications, which are necessary to ensure that the use of recycled water does not unreasonably affect present and anticipated uses of groundwater and surface water.

Title 22 of the CCR requires disinfected tertiary recycled water for unrestricted access golf courses and other areas of similar public access. As the recycled water produced at the Facility will be used to irrigate the unrestricted access golf course (i.e., Bear Valley Oak Tree Country Club golf course) and the landscape around the outside of the Facility, disinfected tertiary treatment is required pursuant to Title 22 of the CCR. This Order contains water recycling specifications pursuant to Title 22 of the CCR.

Table 5 in section IV.C.1.a. of this Order includes the following effluent limitations applicable to the Facility's discharge when recycled on the Use Area:

1. **BOD_5, TSS, and BOD_5 and TSS Percent Removal.** The recycling specifications for BOD_5, TSS, and BOD_5 and TSS percent removal are based on limitations that are achievable since the Facility is a tertiary treatment system, consistent with requirements established for other tertiary treatment systems, and consistent with the "best practicable treatment or control" provision of State Water Board Resolution No. 68-16. These specifications are carried over from Order R5-2008-0121.

2. **Total Coliform and Turbidity.** The Division of Drinking Water promulgated water recycling criteria in Title 22, CCR, Division 4, Chapter 3, to ensure reuse of wastewater does not pose an unacceptable health risk in various reuse situations. Title 22 requires that for irrigation of unrestricted access golf courses and landscapes, recycled water must be adequately disinfected, oxidized, coagulated (under certain circumstances), clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median, not exceed 23 MPN/100 mL in more than one sample in any 30-day period, and never exceed 240 MPN/100 mL. This Order carries over the recycled water effluent limitations for total coliform from Order R5-2008-00121.

   Title 22, CCR, Section 60301.320 contains filtration requirements for sand filters. These requirements specify the turbidity of the filter effluent (when coagulation is used) shall not exceed an average of 2 NTUs within a 24-hour period, 5 NTUs more than 5 percent of the time within a 24-hour period, and 10 NTUs at any time. When coagulation is not used, the requirements specify the effluent after the filters shall not exceed 2 NTUs and that the influent to the filters shall not exceed 5 NTUs for more than 15 minutes and never exceed 10 NTUs. This Order includes these requirements as operational specification in section VI.C.4.a. of this Order.

3. **pH.** It is expected that a portion of the recycled water applied to the recycled water Use Area will percolate to groundwater. The Basin Plan includes a water quality objective for groundwater that "[g]*round waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses*." U.S. EPA has a Secondary Maximum Contaminant Level for drinking water pH of 6.5 to 8.5 units. A pH recycled water limitation range of 6.5 to 8.5 is included in this Order. This pH limitation helps to ensure that the Discharger's wastewater treatment activities do not cause the groundwater taste and odor objective to be violated. In addition, potential corrosion and deposits caused by a pH outside the range of 6.5 to 8.5 could adversely affect the beneficial use of industrial service supply and may disrupt the ability of bacteria to effectively break down certain wastewater constituents. Furthermore, low pH values cause metals to dissolve, allowing them to percolate into groundwater in concentrations that may affect beneficial uses.

4. **Salinity.** The Basin Plan identifies the greatest long term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has been accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan includes effluent specifications for wastewater treatment facilities that discharge to

land. The following are limits included in the Basin Plan for salinity to protect groundwater: (1) a maximum electrical conductivity shall not exceed the electrical conductivity of the source water plus 500 µmhos/cm and (2) discharges to areas that may recharge good quality groundwater shall not exceed an electrical conductivity of 1,000 µmhos/cm, a chloride content of 175 mg/L, and a boron content of 1.0 mg/L. Therefore, this order includes recycled water effluent specifications for boron, chloride, and electrical conductivity.

5. **Flow.** The Facility was designed to provide a tertiary level of treatment for up to 0.25 mgd. Previous Order R5-2008-0121 contained a monthly dry weather flow recycled water specification of 0.25 mgd. Based on flow data submitted form August 2008 to June 2014, the average discharge flow from the Facility during the months of May through October is 0.07 mgd. Therefore, this Order carries over the discharge flow recycled water limitation from Order R5-2008-0121.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for un-ionized ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The Basin Plan states that "[g]*round waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses*." The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, water contact and non-contact recreation, and wildlife habitat.

2. The Tulare Lake Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Tulare Lake Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Tulare Lake Basin Plan also requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or

bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE) if toxicity is detected in the chronic whole effluent monitoring required by this Order. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

b. **Site-Specific Ammonia Criteria.** If it is determined that the receiving water conditions warrant more stringent ammonia WQBELs to protect the beneficial uses applicable to Sycamore Creek, this Order may be reopened and modified effluent limitations added for ammonia.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-6) Based on whole effluent chronic toxicity testing performed by the Discharger on January 2009, the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of **> 1** TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.*" Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

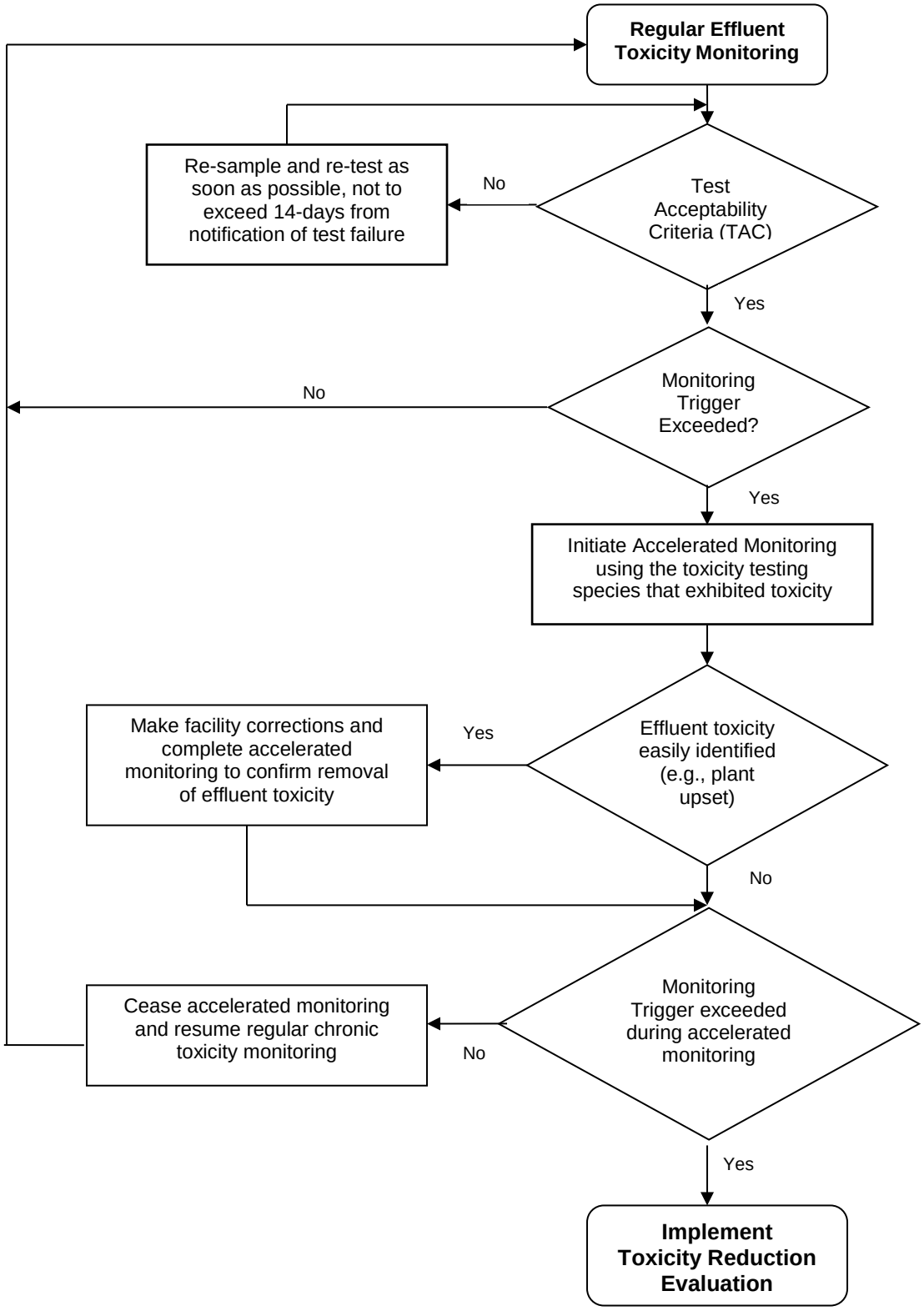
See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Workplan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833-B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*, EPA/600/2-88/070, April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/003, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA/600/R-92/080, September 1993.

- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



b. **Priority Pollutant Evaluation.** Section IX.D. of the Monitoring and Reporting Program (Attachment E) requires the Discharger to monitor for priority pollutants and other constituents of concern in the effluent and upstream receiving water once during the permit term. The Discharger is required to submit, for Executive Officer approval, a monitoring plan for the constituents detected in the effluent and/or receiving water when conducting the priority pollutant and other constituents of concern monitoring. The purpose of the monitoring plan is to evaluate and adequately characterize the detected priority pollutants and other constituents of concern in the effluent and/or receiving water.

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare and implement a salinity evaluation and minimization plan to identify and address sources of salinity to and from the Facility, including, but not limited to, 1) the chemicals used for drinking water and wastewater treatment, 2) the contribution of salinity from sewer users (e.g., the use of water softeners in the community), and 3) the source water (i.e., potable water supply wells). The plan shall be completed and submitted to the Central Valley Water Board by **<180 days from the Order effective date>** for the approval by the Executive Officer. The Discharger shall provide annual reports demonstrating reasonable progress in the reduction/minimization of salinity in its discharge to Sycamore Creek. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, section X.D.1.)

4. Construction, Operation, and Maintenance Specifications

a. **Filtration System Operating Specifications.** Operational specifications for turbidity are included as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity lower than 2 NTUs. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specifications for turbidity included in this Order are specified in Title 22, CCR, section 60301.320 and 60304.

b. **Storage Pond Operating Requirements.** The operation and maintenance specifications for the storage pond are necessary to prevent nuisance conditions.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Biosolids.** The use and disposal of biosolids is regulated under federal and State laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. part 503. The Discharger is required to comply with standards and time schedules contained in 40 C.F.R. part 503.

Title 27, CCR, division 2, subdivision 1, section 20005, et seq. establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. This Order includes requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations.

b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ

(General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The Discharger is enrolled under the General Order.

6. Other Special Provisions

a. Title 22, CCR requires disinfected tertiary recycled water to be oxidized, coagulated (in some instances), filtered, and adequately disinfected.

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for BOD_5 and TSS (1/week) have been retained from Order R5-2008-0121. Electrical conductivity influent monitoring (1/week) is required to characterize the wastewater and to track the relative contribution of salinity at the Facility.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. Two effluent monitoring locations for Discharge Point 001 to Sycamore Creek are included in this Order (Monitoring Locations EFF-001A and EFF-001B). This Order also includes two effluent monitoring locations for Discharge Point 002 to the recycled water Use Area in this Order (Monitoring Locations EFF-002A and EFF-002B).
3. Effluent monitoring for BOD_5, TSS, and pH (1/week) and flow (continuously) at Monitoring Locations EFF-001A and EFF-002A have been included in this Order to determine compliance with the applicable effluent limitations for these parameters.
4. Effluent monitoring for un-ionized ammonia (1/week) and total coliform organisms (3/week) at Monitoring Locations EFF-001A have been included in this Order to determine compliance with the applicable effluent limitations for these parameters.

5. Monitoring for temperature at Monitoring Location EFF-001A (1/week) and at Monitoring Location EFF-001B (5/week) is included to calculate the un-ionized ammonia concentration and to characterize the effluent.

6. Monitoring for chlorine contact time (1/day) at Monitoring Location EFF-002A is included to determine compliance with the modal contact time requirement specified in Title 22, CCR, section 60301.230.

7. Monitoring for total coliform organisms at Monitoring Location EFF-002A (5/week) is included in this Order in accordance with Title 22, CCR and to determine compliance with the effluent limitations for total coliform organisms.

8. Monitoring for pH 5/week at Monitoring Locations EFF-001B and EFF-002B and standard minerals 1/year at Monitoring Location EFF-001B is included to adequately characterize the effluent after storage in the storage pond.

9. Total residual chlorine monitoring at EFF-001B is included 1/day to determine compliance with the applicable effluent limitations.

10. Monitoring for hardness (1/quarter) at Monitoring Locations EFF-001B and EFF-002B and aluminum (1/year) at Monitoring Location EFF-001B is included to characterize the effluent.

11. The effluent monitoring requirements for electrical conductivity, boron, and chloride at Monitoring Locations EFF-001B and EFF-002B are required to determine compliance with the applicable effluent limitations.

12. The 2/month total kjeldahl nitrogen, nitrite, and nitrate monitoring requirements at Monitoring Location EFF-002B are included to determine the nitrogen loading on the recycled water Use Area.

13. Effluent monitoring data collected over the previous permit term for chromium (VI), copper, and settleable solids did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific effluent monitoring requirements for these parameters have not been retained from Order R5-2008-0121.

14. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order relaxes the effluent monitoring for priority pollutants and other constituents of concern from three times a permit term to once a permit term.

15. California Water Code section 13176, subdivision (a), states: "*The analysis of any material required by* [Water Code sections 13000-16104] *shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code*." The Division of Drinking Water certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

    Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the Clean Water Act. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with Clean Water Act requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Annual (1/year) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Annual (1/year) chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Recycling Monitoring

1. Recycled water loading calculations are required to ensure compliance with the recycled water specifications contained in section IV.C. of this Order and the groundwater limitations in section V.B. of this Order.

E. Surface Water

1. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

F. Other Monitoring Requirements

1. **Biosolids Monitoring**

   Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in the in section VI.C.5.a. of this Order. Biosolids disposal requirements are imposed pursuant to 40 C.F.R. Part 503 to protect public health and prevent groundwater degradation.

2. **Water Supply Monitoring**

   Water supply monitoring is required to evaluate the source of constituents in the wastewater and assess compliance with the electrical conductivity effluent limitation.

3. **Filtration System Monitoring**

   This Order establishes monitoring locations at Monitoring Locations FIL-001 and FIL-002 at the influent to and effluent from the filtration system, respectively. This Order requires continuous monitoring for turbidity to determine compliance with the operational specifications in Special Provision VI.C.4.a. Continuous turbidity monitoring at the influent to the filters (Monitoring Location FIL-001) is only required when the Discharger is not using coagulation.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following <**Describe Notification Process (e.g., newspaper name and date)**>

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

http://www.swrcb.ca.gov/centralvalley/board_decisions/tentative_orders/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Officer at the Central Valley Water Board at:

California Regional Water Quality Control Board, Central Valley Region – Fresno Office
1685 "E" Street, Suite 100
Fresno, CA 93706-2007

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on <**Date**>.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date:	5/6 February 2015
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the Central Valley Water Board's action:

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

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

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:00 a.m. and 4:30 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116. Our office is located at 1685 "E" Street, Fresno, CA 93706.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Alexander Mushegan at (559) 448-4397 or at Alexander.Mushegan@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Org. Only	Basin Plan	Reasonable Potential
Aluminum	µg/L	320	680 [1]	750	750 [2]	--	--	--	No
Ammonia (as N), Un-ionized	mg/L	0.006 [3]	N/A	0.025	--	--	--	0.025	Yes [4]
Boron	mg/L	0.630	N/A	1.0	--	--	--	1.0	Yes [4]
Chloride	mg/L	110	N/A	175	--	--	--	175	Yes [4]
Chromium (VI)	µg/L	2.2	0.41	11	16	11	--	--	No
Copper, Total Recoverable	µg/L	15	4.8	18 [5] 9.8 [6]	28 [5] 15 [6]	18 [5] 9.8 [6]	--	--	No
Cyanide	µg/L	1.7 (DNQ)	4.2 (DNQ)	5.2	22	5.2	220,000	--	No
Dibromochloromethane	µg/L	7.8	ND	34	--	--	34	--	No
Electrical Conductivity @ 25°C	µmhos/cm	1,070	907	1,000 or source + 500	--	--	--	1,000 or source + 500	Yes [4]
Selenium, Total Recoverable	µg/L	2.2	0.6 (DNQ)	5.0	--	5.0	--	--	No

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
NA = Not Available
ND = Non-detect
DNQ = Detected but not quantified

Footnotes:
(1) See section IV.C.3. of the Fact Sheet (Attachment F) for detailed discussion.
(2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic life Protection, 1-hour
(3) Calculated by Central Valley Water Board staff using the reported effluent total ammonia (as N), pH, and temperature.
(4) See section IV.C.3. of the Fact Sheet (Attachment F) for detailed discussion.
(5) Criterion applicable to the maximum effluent concentration (MEC).
(6) Criterion applicable to the maximum upstream receiving water concentration (B).

ATTACHMENT H – RECYCLED WATER SIGNAGE

From Title 22, California Code of Regulations, Figure 60310-A