CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2011-XXXX
NPDES NO. CA0085146

WASTE DISCHARGE REQUIREMENTS FOR THE BEAR VALLEY WATER DISTRICT BEAR VALLEY WASTEWATER TREATMENT FACILITY ALPINE COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	Bear Valley Water District
Name of Facility	Bear Valley Wastewater Treatment Facility
Facility Address	441 Creekside Drive
	Bear Valley, CA 95223
	Alpine County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by the Bear Valley Water District from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Municipal Wastewater	38º 27’ 25” N	120º 02’ 13” W	Bloods Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**<Adoption Date>**
This Order shall become effective on:	**50 days after adoption of this Order**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

I, **Pamela C. Creedon**, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an 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

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	Bear Valley Water District
Name of Facility	Bear Valley Wastewater Treatment Facility
Facility Address	441 Creekside Drive
	Bear Valley, CA 95223
	Alpine County
Facility Contact, Title, and Phone	Julio S. Guerra, General Manager, (209) 753-2112
Mailing Address	PO Box 5027, Bear Valley, CA 95223
Type of Facility	Publically Owned Treatment Works (POTW)
Facility Design Flow	0.50 million gallons per day (MGD)

II. FINDINGS

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

A. Background. Bear Valley Water District (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0139 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0085146. The Discharger submitted a Report of Waste Discharge, dated 11 April 2010, and applied for a NPDES permit renewal to discharge up to 2.5 MGD of treated wastewater from the Bear Valley Wastewater Treatment Facility, hereinafter Facility. The application was deemed complete on 8 October 2010.

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. Facility Description. The Discharger owns and operates the Facility. The treatment system consists of a comminuter, biological treatment in a 12.5 million-gallon aeration pond, disinfection in a 12,000-gallon chlorine contact tank, and effluent storage and polishing in a 106 million-gallon unlined storage/polishing reservoir. Effluent from the storage/polishing reservoir is disposed of through spray irrigation of land leased from C. Bruce Orvis, TBH Partners, and the United States Forest Service (USFS) during the summer months (June through October), which is regulated by Waste Discharge Requirements (WDR) Order No. 5-01-208. During wet winters with heavy snowfall, wastewater may also be discharged from Discharge Point No. 001 (see table on cover page) to Bloods Creek, a water of the United States, and a tributary to North Fork Stanislaus River, upstream of the New Melones Reservoir. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (CWC; commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

D. **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 Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.

E. **California Environmental Quality Act (CEQA).** Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

F. **Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 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 CFR Part 133. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. **Water Quality-based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

   40 CFR 122.44(d)(1)(i) mandates 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, WQBELs must be established using: (1) USEPA 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 40 CFR 122.44(d)(1)(vi).

H. **Water Quality Control Plans.** The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised September 2009)*, for the Sacramento and San Joaquin River Basins (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. The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." The Basin Plan does not specifically identify beneficial uses for Bloods Creek, but does identify present and potential uses for the North Fork Stanislaus River from its source to New Melones Reservoir, to which Bloods Creek is tributary. In addition, the Basin Plan implements State Water Resources Control Board (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. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to Bloods Creek are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Bloods Creek	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).

The Basin Plan includes a 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 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Bloods Creek and the North Fork Stanislaus River upstream of the New Melones Reservoir are not listed on the 303(d) list of impaired water bodies.

Requirements of this Order implement the Basin Plan.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA 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, USEPA 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 water quality criteria for priority pollutants.

J. **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 USEPA 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

USEPA 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.

K. **Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed 10 years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. The Central Valley Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to CWC section 13300 or a Cease and Desist Order pursuant to CWC section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Central Valley Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the effluent limit based on the objective or criteria.

   The Compliance Schedule Policy and the SIP do not allow compliance schedules for priority pollutants beyond 18 May 2010, except for new or more stringent priority pollutant criteria adopted by USEPA after 17 December 2008.

   Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does include compliance schedules and interim effluent limitations for aluminum and ammonia. A detailed discussion of the basis for the compliance schedules and interim effluent limitations is included in the Fact Sheet (Attachment F).

L. **Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The

technology-based effluent limitations consist of restrictions on flow, 5-day biochemical oxygen demand (BOD_5), and total suspended solids (TSS). The WQBELs consist of restrictions on aluminum, ammonia, chlorine residual, copper, iron, lead, manganese, settleable solids, and total coliform organisms. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. 40 CFR 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 No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters 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. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent that those in Order No. R5-2005-0139. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. Endangered Species Act. 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 sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 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. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC 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.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in section VI.A.2.o of this Order 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.

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

U. 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.

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0139 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 CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings 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 CWC.

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and 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 to Bloods Creek between 1 July and 31 December is prohibited.

F. The discharge of treated effluent to Bloods Creek in quantities which do not receive a minimum of 20:1 dilution (receiving water flow : effluent flow) is prohibited.

G. The discharge of treated effluent to Bloods Creek is prohibited when the storage reservoir has more than 35 million gallons of unused effluent storage capacity.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 6. Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	1.0	--	2.5	--	--
Conventional Pollutants						
pH	Standard Units	--	--	--	6.5	8.5
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30	40	60	--	--
	lbs/day[1]	250	330	1,250	--	--
Total Suspended Solids	mg/L	30	40	60	--	--
	lbs/day[1]	250	330	1,250	--	--
Priority Pollutants						

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	0.56	--	1.1	--	--
Lead, Total Recoverable	µg/L	0.082	--	0.16	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	71	--	143	--	--
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--
	lbs/day[1]	9.2	--	44	--	--
Settleable Solids	ml/L	0.1	--	0.2	--	--

[1] Average monthly and average weekly mass-based effluent limitations are based on a permitted average monthly flow of 1.0 MGD. Maximum daily mass-based effluent limitations are based on a permitted maximum daily flow of 2.5 MGD.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

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; and
ii. 90%, median for any three consecutive bioassays.

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

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

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

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

f. Iron, Total Recoverable. For a calendar year, the annual average effluent concentration shall not exceed 300 µg/L.

g. Manganese, Total Recoverable. For a calendar year, the annual average effluent concentration shall not exceed 50 µg/L.

2. Interim Effluent Limitations

a. Effective immediately and ending on **1 August 2016**, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program. These interim effluent limitations shall apply

in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 7. Interim Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	--	--	440	--	--
Ammonia Nitrogen, Total (as N)	mg/L	--	--	7.6	--	--

B. Land Discharge Specifications – Not Applicable

Land discharge specifications are set forth in WDR Order No. 5-01-208.

C. Reclamation Specifications – Not Applicable

Reclamation specifications are set forth in WDR Order No. 5-01-208.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Bloods Creek:

1. **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.

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

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

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

5. **Dissolved Oxygen:**

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

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

c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

7. **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.

8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.

9. **Pesticides:**

a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;

c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;

d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);

e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;

f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, division 4, chapter 15; nor

g. Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity:**

a. Radionuclides to be present in concentrations that are harmful 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.

b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of section 64443 of Title 22 of the California Code of Regulations.

13. **Suspended Sediments.** 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.

14. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

15. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

16. **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 that cause nuisance, or otherwise adversely affect beneficial uses.

17. **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.

18. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

19. **Turbidity.** The turbidity to exceed the following limitations:

    a. Where natural turbidity is less than 1 Nephelometric Turbidity Units (NTU), controllable factors shall not cause the downstream receiving water to exceed 2 NTU;

    b. Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;

    c. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed more than 20 percent;

    d. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU; nor

    e. Where natural turbidity is greater than 100 NTUs, increases shall not exceed more than 10 percent.

    Compliance to be determined based on the difference in turbidity at RSW-001 and RSW-002.

B. Groundwater Limitations – Not Applicable

Groundwater limitations are set forth in WDR Order No. 5-01-208.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) included in Attachment D of this Order.

2. The Discharger shall comply with the following provisions:

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:

- *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.

- *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.

- *Change in sludge use or disposal practice.* Under 40 CFR 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 USEPA 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 USEPA 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 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 CWC, including, but not limited to, sections 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 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. (CWC section 1211).

o. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

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 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 CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, 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 CFR 122.62, including:

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 new chronic toxicity limitation, a new acute toxicity limitation, 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. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents, including aluminum, copper, and lead. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and lead. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. **Dilution/Mixing Zone Study.** In order to allow dilution credits for the calculation of WQBELs, the Discharger must submit an approved Dilution/Mixing Zone Study, in accordance with a workplan submitted to and approved by the Central Valley Water Board, which meets all of the requirements of Section 1.4.2.2 of the SIP. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, the Central Valley Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor.

f. **pH and Ammonia.** If the Discharger performs a study demonstrating there is no reasonable potential for the discharge to cause or contribute to an exceedance of the Basin Plan water quality objectives for pH, or adequately demonstrates a lower instantaneous maximum pH effluent limitation is protective, this Order may be reopened to modify the effluent limitations for pH and/or ammonia.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Chronic Whole Effluent Toxicity.** 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 the Monitoring and Reporting Program (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 exhibits toxicity, as described in subsection ii. below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, 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 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 Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Initial Investigative TRE Workplan.** Within 90 days of the effective date of this Order, the Discharger shall submit to the Central Valley Water Board an

Initial Investigative TRE Workplan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

(a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;

(b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and

(c) A discussion of who will conduct the Toxicity Identification Evaluation (TIE), if necessary (e.g., an in-house expert or outside contractor).

ii. Accelerated Monitoring and TRE Initiation. When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, 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.

iii. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate a TRE is > 1 TU_C (where TU_C = 100/NOEC). 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 toxicity.

iv. 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 (4) chronic toxicity tests conducted once every 2 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 (4) 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 evidence 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 plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) 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 Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance[1].

b. Dechlorination Study. The Discharger shall conduct a study to demonstrate that the effluent discharged to Bloods Creek is adequately dechlorinated to ensure compliance with effluent limitations for chlorine residual in IV.A.1.d, which are in effect upon the effective date of this Order. The Discharger shall comply with the following time schedule to implement and complete a dechlorination study.

Task	Compliance Date
i. Submit Dechlorination Study Workplan/Schedule	1 December 2011
ii. Complete Dechlorination Study	1 December 2012
iii. Submit Technical Report summarizing results of the Dechlorination Study, and recommending additional measures as necessary to comply with final effluent limitations for chlorine residual.	31 March 2013
iv. Implement additional measures, if any, recommended in the Technical Report to ensure compliance with final effluent limitations for chlorine residual.	31 October 2013

c. United States Forest Service (USFS) Request Letter. By **1 June 2014**, the Discharger shall submit to the Central Valley Water Board a copy of a letter to USFS requesting continued use of leased land beyond the existing lease period under USFS Special Use Program Lease No. 1029-01, which expires in 2015.

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

d. Land Disposal Alternatives Evaluation. The Discharger shall prepare and submit an evaluation that identifies additional alternatives to increase land disposal capacity **within 1 year of adoption of this Order**. The Discharger shall implement feasible methods for increasing land disposal capacity identified in the evaluation.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Plan. The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: (1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or (2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the Monitoring and Reporting Program (Attachment E, section X.B.4).

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Central Valley Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Central Valley Water Board including:

(a) All PMP monitoring results for the previous year;

(b) A list of potential sources of the reportable priority pollutant(s);

(c) A summary of all actions undertaken pursuant to the control strategy; and

(d) A description of actions to be taken in the following year.

b. Salinity Evaluation and Minimization Plan. The Discharger shall prepare and implement a salinity evaluation and minimization plan to identify and address sources of salinity from the Facility. The plan shall be completed and submitted to the Central Valley Water Board **within 9 months of the adoption date of this Order** for the approval by the Executive Officer.

4. Construction, Operation and Maintenance Specifications

a. Influent Flow. The annual average daily influent flow into the wastewater treatment plant shall not exceed 100,000 gallons per day (gpd).

b. Maximization of Land Application. The Discharger shall maximize land application of the effluent. Maximizing land application shall include, but is not limited to, irrigation of a minimum of 80 acres between 1 July and 30 September and continued implementation of water conservation measures and an infiltration and inflow (I/I) reduction program. By **1 November**, annually, the Discharger shall submit a report demonstrating maximization of land application has occurred. The report shall include the following:

i. An estimate of the amount of carryover of wastewater in the storage/polishing reservoir beyond 1 October (i.e., an estimate of wastewater volume utilizing storage capacity) and the reason(s) the carryover is necessary;

ii. The number of acres utilized for wastewater irrigation during the summer irrigation season;

iii. The amount of wastewater disposal utilizing controls and pumps; and

iv. A detailed description of the efforts taken during the last year to implement new conservation measures and I/I corrective actions measures.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements

i. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:

(a) Wastes which create a fire or explosion hazard in the treatment works;

(b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;

(c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;

(d) Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

(e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Central Valley Water Board approves alternate temperature limits;

(f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

(g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and

(h) Any trucked or hauled pollutants, except at points predesignated by the Discharger.

ii. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

(a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or

(b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

b. Collection System. On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. By 2 November 2006, the Discharger was required by that Order, not incorporated by reference herein, to apply for coverage under State Water Board Order 2006-0003 for operation of its wastewater collection system.

c. Continuous Monitoring Systems. This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is not staffed on a full time basis. Permit violations or system upsets can go undetected during this period. The Discharger shall establish an electronic system for operator notification for continuous recording device alarms. For any future

facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions

a. Notification of Discharge. The Discharger shall notify the Regional Water Board, the Stockton East Water District, and the Department of Public Health (DPH) Southern California Drinking Water Field Operations Branch by telephone prior to initiating a discharge to Bloods Creek.

7. Compliance Schedules

a. Compliance Schedules for Final Effluent Limitations for Aluminum and Ammonia. This Order requires compliance with the final effluent limitations for aluminum and ammonia by **1 August 2016**. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations:

Task	Date Due
i. Submit and Implement Pollution Prevention Plan (PPP)[1] for Aluminum and Ammonia	Within 1 year after adoption of this Order
ii. Submit report summarizing additional data collection and effluent and receiving water characterization for ammonia and aluminum	1 October 2013
iii. Progress Reports[3]	1 August, annually, after Order adoption until final compliance
iv. Submit Method of Compliance Workplan/Schedule[2]	1 January 2014
v. Full Compliance	1 August 2016

[1] The PPP for aluminum and ammonia shall be prepared and implemented in accordance with CWC section 13263.3(d)(3) as outlined in the Fact Sheet (Attachment F section VII.B.3.c).

[2] The workplan/schedule shall indicate whether collection of data performed under Task ii show that treatment plant upgrades, diffuser installation, or performing a mixing zone study are necessary to comply with effluent limitations and the preferred method of achieving compliance.

[3] The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

VII. COMPLIANCE DETERMINATION

A. **BOD_5 and TSS Effluent Limitations (Section IV.A.1.a and IV.A.1.b).** Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by grab samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.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. **Aluminum Effluent Limitations (Section IV.A.1.a).** Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA'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.

C. **Total Coliform Organisms Effluent Limitations (Section IV.A.1.e.).** 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 example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. 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.

D. **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).

E. **Average Monthly and Annual Average Effluent Limitations (Section IV.A.1).** For average monthly and annual average effluent limitations, including average monthly percent removal limitations for BOD_5 and TSS, if only one sample is collected during the time period associated with the effluent limitation, the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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 = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

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.

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

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 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period 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 RL, but greater than or equal to the laboratory's MDL.

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 USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

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

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 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 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 CFR Part 136, Attachment B, revised as of 3 July 1999.

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.

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

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

Pollutant Minimization Program (PMP)
PMP 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 completion and implementation of a Pollution Prevention Plan, if required pursuant to CWC section 13263.3(d), shall be considered to fulfill the PMP requirements.

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 or Central Valley Water Board.

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

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.

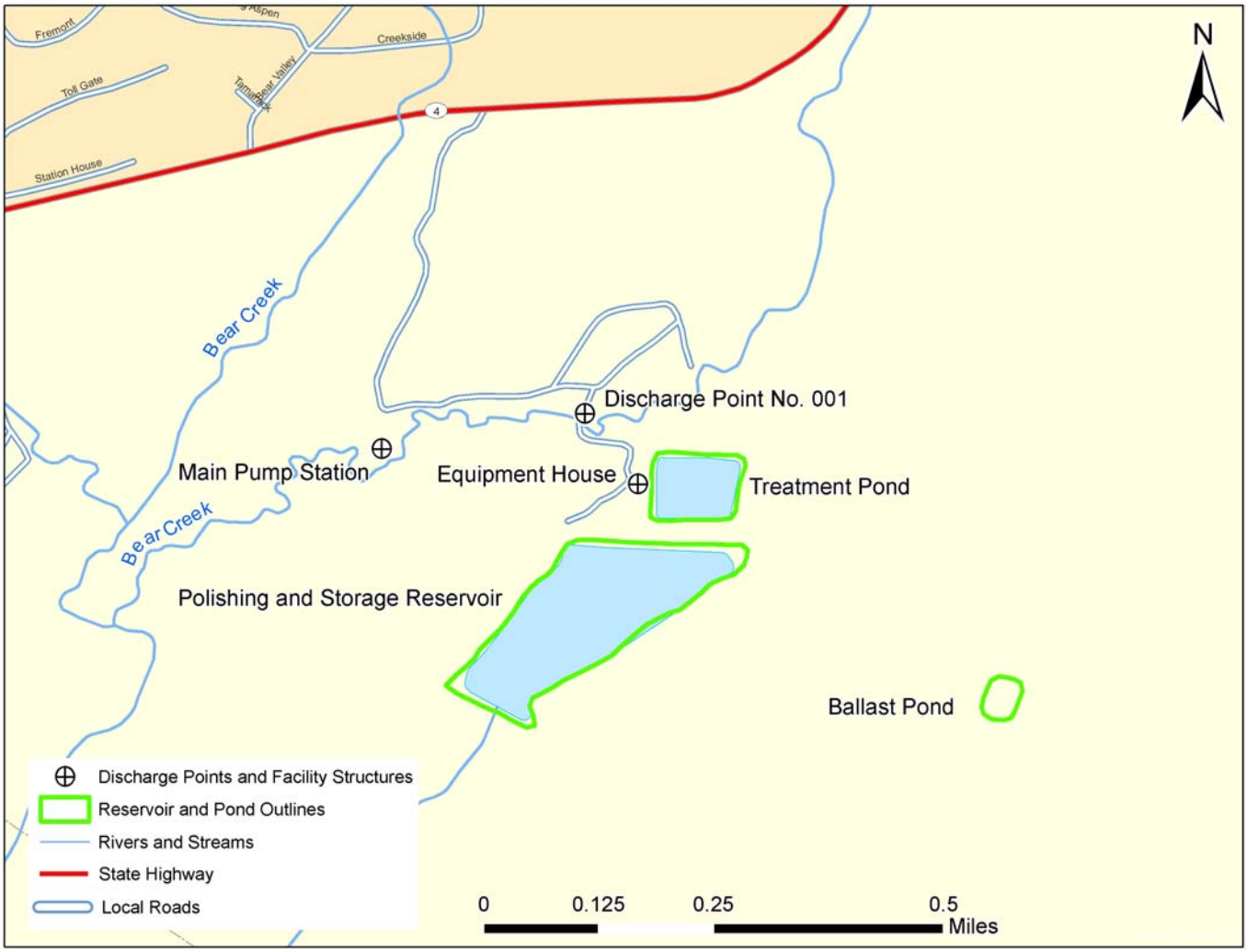
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

where:
x is the observed value;
μ 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.)

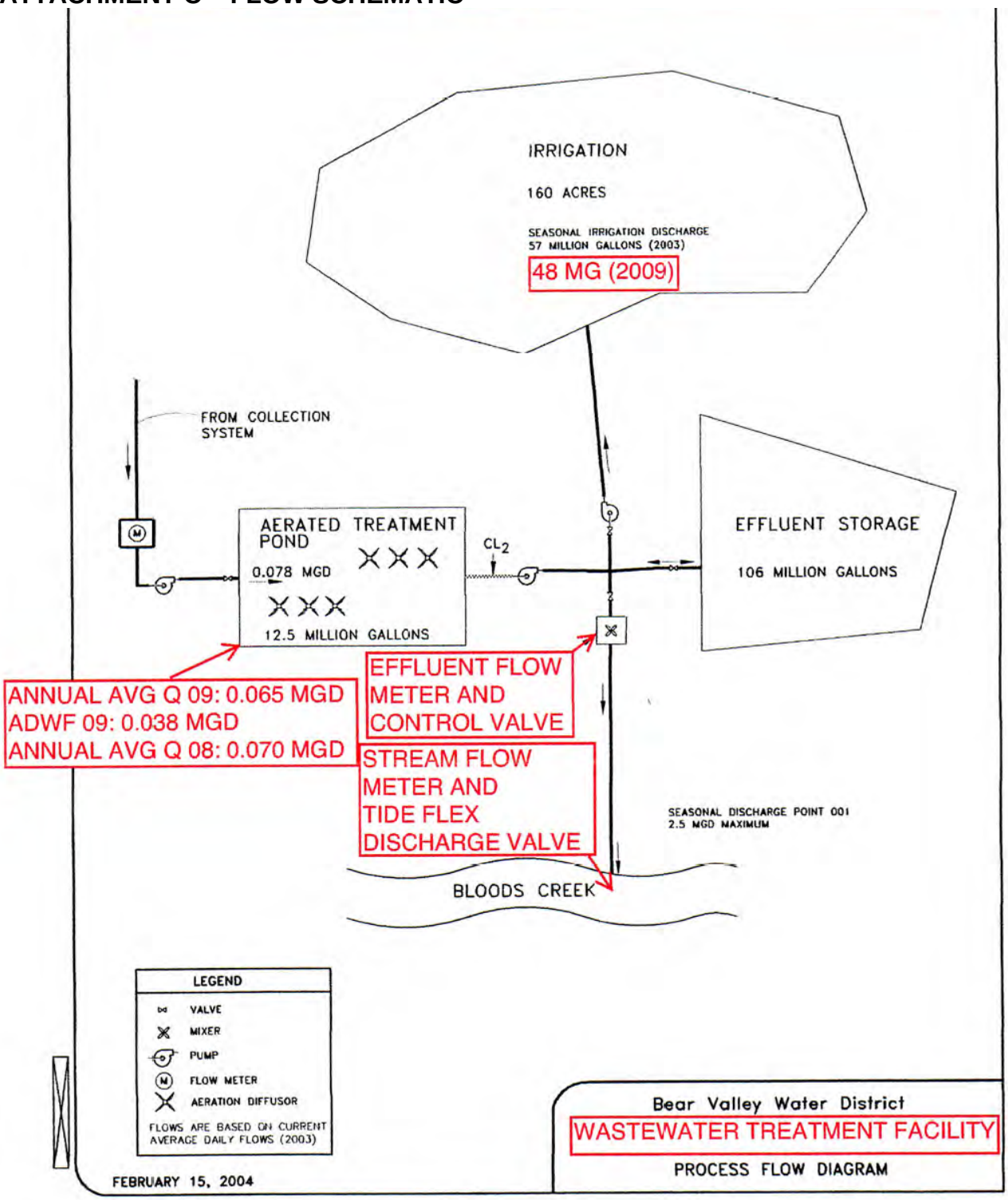
ATTACHMENT B – MAP



SITE LOCATION MAP

BEAR VALLEY WATER DISTRICT
BEAR VALLEY WASTEWATER TREATMENT FACILITY
ALPINE 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 conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)

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 CFR 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 CFR 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 CFR 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 CFR 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR 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 CFR 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, United States Environmental Protection Agency (USEPA), 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 (40 CFR 122.41(i); CWC section 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 (40 CFR 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. (40 CFR 122.41(i)(4).)

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 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 CFR 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 CFR 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 CFR 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 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 CFR 122.41(n)(3)):

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

b. The permitted facility was, at the time, being properly operated (40 CFR 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 CFR 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 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 CFR 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 CFR 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 CFR 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 CWC. (40 CFR 122.41(l)(3) and 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test

procedures have been specified in this Order. (40 CFR 122.41(j)(4) and 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 5 years (or longer as required by 40 CFR 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 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 CFR 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR 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 USEPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or USEPA 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 USEPA copies of records required to be kept by this Order. (40 CFR 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or USEPA 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 CFR 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 USEPA). (40 CFR 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 USEPA 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 CFR 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 CFR 122.22(b)(2)); and

c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 CFR 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 CFR 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 CFR 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 CFR 122.22(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 CFR 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 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this 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 CFR 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 CFR 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 CFR 122.41(l)(5).)

E. Two-Hour and Twenty-Four Hour Reporting

1. The Discharger shall notify the Office of Emergency Services any noncompliance that may endanger health or the environment within 2-hours from the time the Discharger becomes aware of the circumstances. Any information shall be provided by telephone or fax 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 CFR 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 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 CFR 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 CFR 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 40 CFR 122.29(b) (40 CFR 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 CFR 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 CFR 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 General Order requirements. (40 CFR 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 CFR 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 USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 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 CWC, 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 CFR 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 CFR 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 CFR 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 CFR 122.42(b)(3).)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the 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 this 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 Department of Public Health (DPH). 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 dissolved oxygen, pH, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided that the analysis is in accordance with 40 CFR 136 or an USEPA approved alternative test procedure, and 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 dissolved oxygen, pH, 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. The Quality Assurance-Quality Control Program must conform to USEPA 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 DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

G. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

H. 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.

I. 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 the monthly average and the daily maximum discharge flows.

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	Upstream from the last connection through which wastes can be admitted into the treatment pond.
001	EFF-001	Downstream from the last connection through which wastes can be admitted into the outfall from the storage/polishing reservoir.[1]
--	PND-001	Storage/polishing reservoir surface
--	RSW-001	In Bloods Creek, no more than 50 feet upstream of the point of discharge.[2]
--	RSW-002	In Bloods Creek, no more than 200 feet downstream of the point of discharge.[2]
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.

[1] Samples shall be taken at the sample tap on the effluent outfall pipeline.
[2] The Discharger shall report the receiving water monitoring location in the monthly self-monitoring report.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hour Composite[1]	1/Week[3]	[2]
Total Suspended Solids	mg/L	24-Hour Composite[1]	1/Week[3]	[2]

[1] 24-hour flow proportional composite.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[3] Monitoring only required from 1 January through 30 June.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated effluent at Monitoring Location EFF-001 as specified in Table E-3 when discharging to Bloods Creek. If more than one analytical

test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level (ML).

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	2/Week	[1]
	lbs/day	Calculate	2/Week	--
pH	standard units	Meter	Continuous	[1]
Total Suspended Solids	mg/L	Grab	2/Week	[1]
	lbs/day	Calculate	2/Week	--
Turbidity	NTU	Grab	2/Week	[1]
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	[1,2]
Lead, Total Recoverable	µg/L	Grab	1/Month	[1,2]
Priority Pollutants and Other Constituents of Concern[3]	µg/L	Grab	1/Permit Term[4]	[1,2,5,6]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	Grab	1/Month	[1,7]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	2/Week[8,9]	[1]
	lbs/day	Calculate	2/Week	--
Chlorine, Total Residual	mg/L	Meter	Continuous	[1,10]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Week	[1]
Iron, Total Recoverable	µg/L	Grab	1/Month	[1]
Manganese, Total Recoverable	µg/L	Grab	1/Month	[1]
Settleable Solids	ml/L	Grab	2/Week	[1]
Total Coliform Organisms	MPN/100 mL	Grab	2/Week	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month	[1]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month	[1]
Temperature	°F	Grab	2/Week	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

[2] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest ML published in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

[3] See list of Priority Pollutants and Other Constituents of Concern in Attachment I.

[4] Priority pollutants and other constituents of concern shall be sampled once per permit term following the date of permit adoption at Monitoring Location EFF-001 if a discharge to Bloods Creek occurs, and shall be conducted concurrently with upstream receiving water monitoring for priority pollutants, hardness (as $CaCO_3$), and pH. The Discharger is not required to conduct effluent monitoring for priority pollutants that have already been sampled during the same year as the priority pollutant sampling, as required in Table E-3. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.

[5] Volatile constituents shall be sampled in accordance with 40 CFR Part 136.

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

[7] Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA'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.

[8] Concurrent with whole effluent toxicity monitoring.

[9] pH and temperature shall be recorded at the time of ammonia sample collection.

[10] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

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 acute toxicity testing once during the discharge season (i.e., 1 January through 30 June) when discharging to Bloods Creek, concurrent with effluent ammonia sampling. Acute toxicity testing is not required if a discharge to Bloods Creek does not occur during the discharge season.

2. *Sample Types* – For static non-renewal and static renewal testing, 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-001.

3. *Test Species* – Test species shall be rainbow trout (*Oncorhynchus mykiss*).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded

at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. *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 three species chronic toxicity testing once during the term of this Order when discharging to Bloods Creek. If a discharge to Bloods Creek does not occur during the term of this Order, the Discharger is not required to conduct chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in this Monitoring and Reporting Program.

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:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   - The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – 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.

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* –The chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic). Laboratory control water may be used as the diluent for TRE monitoring.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	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 *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), 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 the Special Provision at section VI.C.2.a.iii 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 completion of the test, and shall contain, at minimum:

a. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate;

b. The statistical methods used to calculate endpoints;

c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

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

e. 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 quarterly, monthly, accelerated, or Toxicity Reduction Evaluation (TRE).

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports 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 Workplan.

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

   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

A. Monitoring Location PND-001

1. From 1 December through 30 June, the Discharger shall monitor the surface of the storage/polishing reservoir at Monitoring Location PND-001 as specified in Table E-5. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding ML. Monitoring is only required under certain circumstances (see table footnotes regarding the minimum sampling frequencies).

Table E-5. Storage/Polishing Reservoir Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Storage/Polishing Reservoir Volume Remaining	million gallons	Estimate	1/Day[1]	--
Storage/Polishing Reservoir Water Surface Elevation	feet	Measurement	1/Day[1]	--
Storage/Polishing Reservoir Freeboard	feet	Measurement	1/Day[1]	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	2/Year[2]	[3]
pH	standard units	Grab	2/Year[2]	[3]
Total Suspended Solids	mg/L	Grab	2/Year[2]	[3]
Turbidity	NTU	Grab	2/Year[2]	[3]
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Year[4]	[3,5]
Lead, Total Recoverable	µg/L	Grab	1/Year[4]	[3,5]
Priority Pollutants and Other Constituents of Concern[6]	µg/L	Grab	1/Permit Term[7]	[3,5,8,9]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	Grab	1/Year[4]	[3,10]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Year[4,11]	[3]
Chlorine, Total Residual	mg/L	Grab	2/Year[2]	[3,12]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year[2]	[3]
Iron, Total Recoverable	µg/L	Grab	1/Year[4]	[3]
Manganese, Total Recoverable	µg/L	Grab	1/Year[4]	[3]
Settleable Solids	ml/L	Grab	2/Year[2]	[3]
Total Coliform Organisms	MPN/100 mL	Grab	2/Year[2]	[3]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	2/Year[2]	[3]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Year[4]	[3]
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Year[4]	[3]
Temperature	°F	Grab	2/Year[2]	[3]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Monitoring is required daily during discharge events to Bloods Creek and weekly when not discharging to Bloods Creek.

[2] Monitoring shall occur once during the month of May and once during the month of June each discharge season. If a discharge to Bloods Creek occurs and the Discharger monitored the effluent discharge for this constituent, monitoring at Monitoring Location PND-001 is not required for this constituent. Analytical data collected at Monitoring Location PND-001 shall not be used for determining compliance with effluent limitations.

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

[4] Monitoring shall occur once between 1 May and 30 June each discharge season. If a discharge to Bloods Creek occurs and the Discharger monitored the effluent discharge for this constituent, monitoring at Monitoring Location PND-001 is not required for this constituent. Analytical data collected at Monitoring Location PND-001 shall not be used for determining compliance with effluent limitations.

[5] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest ML published in Appendix 4 of the SIP is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

[6] See list of Priority Pollutants and Other Constituents of Concern in Attachment I.

[7] Priority pollutants and other constituents of concern shall be sampled once during the permit term at Monitoring Location PND-001, and shall be conducted concurrently with upstream receiving water monitoring for priority pollutants, hardness (as $CaCO_3$), and pH. If a discharge to Bloods Creek occurs during the permit term, and the Discharger conducted monitoring for priority pollutants and other constituents of concern for the effluent discharge, monitoring at Monitoring Location PND-001 is not required. The Discharger is not required to conduct monitoring for priority pollutants that have already been sampled in a given year, as required in Table E-5. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring. Analytical data collected at Monitoring Location PND-001 shall not be used for determining compliance with effluent limitations.

[8] Volatile constituents shall be sampled in accordance with 40 CFR Part 136.

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

[10] The Discharger may monitoring for aluminum using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA'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.

[11] pH and temperature shall be recorded at the time of ammonia sample collection.

[12] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor Bloods Creek at RSW-001 and RSW-002 as specified in Table E-7 when discharging to Bloods Creek.

Table E-7. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous[1]	--
Conventional Pollutants				
pH	standard units	Grab	1/Week[3, 11]	[2,4]
Priority Pollutants				
Priority Pollutants and Constituents of Concern[5]	µg/L	Grab	1/Permit Term[1,6]	[2,7,8,9]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week[11]	[2,4]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week[11]	[2,4]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[10, 11]	[2]
Temperature	°F/°C	Grab	1/Week[11]	[2,3,4]
Turbidity	NTU	Grab	1/Week[11]	[2,4]

1 Monitoring required at Monitoring Location RSW-001 only.

2 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

3 Monitoring for pH and temperature shall be conducted concurrently with effluent ammonia sampling.

4 A hand-held field meter may be used, provided the meter utilizes a USEPA-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 See list of Priority Pollutants and Other Constituents of Concern in Attachment I.

6 Priority pollutants shall be sampled once during the term of the permit at Monitoring Location RSW-001. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

7 If a discharge to Bloods Creek occurs during the term of this Order, the Discharger shall monitor for priority pollutants and constituents of concern during the discharge, concurrent with effluent monitoring at Monitoring Location EFF-001. If a discharge to Bloods Creek does not occur during the permit term, the Discharger shall monitor for priority pollutants and constituents of concern at least once during the permit term during conditions under which a discharge is most likely to occur (i.e., during snowmelt) in the month of May or June, concurrent with monitoring at Monitoring Location PND-001.

8 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; for priority pollutants the methods must meet the lowest MLs specified in Appendix 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Central Valley Water Board or the State Water Board.

9 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 pollutant.

10 Hardness samples shall be collected on the same date as the effluent samples for copper, lead, and aluminum.

11 In addition to the monitoring required during discharge events, monitoring for dissolved oxygen, electrical conductivity, pH, temperature, turbidity, and hardness shall be conducted once during the month of May and once during the month of June each discharge season, regardless if a discharge is occurring to Bloods Creek. If monitoring occurs during May and/or June for these constituents during discharge events, this additional monitoring is not required for the month(s) that monitoring occurred. If an effluent discharge is not occurring at the time of sampling, the analytical data shall not be used for determining compliance with receiving water limitations.

IX. OTHER MONITORING REQUIREMENTS

A. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

Table E-8. 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/Year[3]	[2]

[1] If the water supply is from more than one source, electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
[3] Municipal Water Supply monitoring shall occur once per year, even if there is no discharge to Bloods Creek.

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.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

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. At any time during the term of this permit, the State Water Board or the Central Valley Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. SMRs must be submitted monthly. If no discharge occurs to Bloods Creek, SMRs are still required to be submitted.

2. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. 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. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements (e.g., effluent limitations and discharge specifications, receiving water limitations, special provisions, etc.). The highest daily maximum for the month and monthly and weekly averages shall be determined and recorded as needed to demonstrate compliance. In addition, the following shall be calculated and reported in the SMRs:

   a. **Annual Average Limitations**. For constituents with effluent limitations specified as "annual average" (aluminum, electrical conductivity, iron, and manganese) the Discharger shall report the annual average in the June SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.

   b. **Mass Loading Limitations**. For BOD_5, TSS, and ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. 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 SMRs. 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.C. of the Limitations and Discharge Requirements.

e. **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.

f. **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.17.a-e. of the Limitations and Discharge Requirements.

g. **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.

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

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling.
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.	First day of second calendar month following month of sampling.
1/Week	Permit effective date	Sunday through Saturday	First day of second calendar month following month of sampling.
2/Week	Permit effective date	Sunday through Saturday	First day of second calendar month following month of sampling.
1/Month	Permit effective date	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/Quarter	Permit effective date	1 January through 1 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Year	Permit effective date	1 January through 31 December	1 February
1/Permit Term	Permit effective date	Permit effective date through permit expiration date (see cover page)	First day of second calendar month following month of sampling.

5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported ML and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 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 reported ML 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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). 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 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.

6. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the Central Valley Water Board and the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

7. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, 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.

8. The Discharger shall submit SMRs 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 interim and/or 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.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. SMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

   Regional Water Quality Control Board
   Central Valley Region
   NPDES Compliance and Enforcement Unit
   11020 Sun Center Dr., Suite #200
   Rancho Cordova, CA 95670-6114

9. Reports must clearly show when discharging to Discharge Point No. 001 or other permitted discharge locations. Reports must show the date and time that the discharge started and stopped at each location.

C. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, and TRE/TIE required by Special Provisions VI.C of this Order. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in the Special Provision at section VI.C.7 of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

2. Within 60 days of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.

4. **Annual Operations Report.** By 30 January 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 plant 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.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in the Findings in section II 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	5B020101001
Discharger	Bear Valley Water District
Name of Facility	Bear Valley Wastewater Treatment Facility
Facility Address	441 Creekside Drive
	Bear Valley, CA 95223
	Alpine County
Facility Contact, Title and Phone	Julio S. Guerra, General Manager, (209) 753-2112
Authorized Person to Sign and Submit Reports	Julio S. Guerra, General Manager, (209) 753-2112
Mailing Address	P.O. Box 5027, Bear Valley, CA 95223
Billing Address	Same as Mailing Address
Type of Facility	Publically Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	2.5 million gallons per day (MGD), maximum daily flow 1.0 MGD, average monthly flow
Facility Design Flow	0.50 MGD
Watershed	Upper Stanislaus
Receiving Water	Bloods Creek
Receiving Water Type	Inland surface water

A. Bear Valley Water District (hereinafter Discharger) is the owner and operator of the Bear Valley Wastewater Treatment Facility (hereinafter Facility), a POTW.

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 Bloods Creek, a water of the United States, and is currently regulated by Order No. R5-2005-0139 which was adopted on 20 October 2005 and expired on 1 October 2010. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 11 April 2010. Supplemental information was requested on 23 August 2010 and received on 23 August 2010 and 24 August 2010. A site visit was conducted on 31 August 2010 to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the communities of Bear Valley, Bear Valley Ski Resort, and the Lake Alpine/United States Forest Service, and serves a population of approximately 133 permanent residents and seasonal users. The design flow capacity of the Facility is 0.50 MGD.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system consists of a comminutor; biological treatment in a 12.5 million-gallon aeration pond; disinfection in a 12,000-gallon chlorine contact tank; and effluent storage and polishing in a 106 million-gallon unlined storage/polishing reservoir. The aeration pond is split into two equal sections by a redwood baffle. Aeration is provided for 10 to 12 hours per day by three 30-horsepower (Hp) diffusers installed at the bottom of the pond. Effluent from the aeration pond is disinfected in a chlorine contact tank prior to transfer to the storage/polishing reservoir. Effluent from the storage/polishing reservoir is disposed of through spray irrigation during the summer months (June through October), which is regulated by WDR Order No. 5-01-208. The Facility capacity allows for retention of wastewater for the remainder of the year; however, there may be instances where a discharge to surface water may occur.

The Discharger currently has 160 acres of land available for use in wastewater treatment, storage, and disposal, none of which are owned by the Discharger. The Discharger leases 120 acres from C. Bruce Orvis and TBH Partners. That lease will expire in 2048. The remaining 40 acres are leased from the United States Forest Service (USFS) under Special Use Permit (SUP) No. 1029-01, which expires in 2015. According to USFS staff, the SUP will be renewed in 2015. Of the 160 total acres of leased land, approximately 120 acres comprise the effluent disposal area, only 80 acres of which are suitable for effluent disposal due to topography, crop outcroppings, drainage courses, and desired setbacks. The Discharger previously leased an additional 40 acres from USFS through a temporary amendment to the SUP. Although the temporary amendment for the additional 40 acres expired in June 2011, the Discharger and USFS have agreed to exchange portions of unusable disposal land within the USFS property to maintain the overall current area of productive disposal lands under the existing lease.

The effluent disposal potential of the Facility is less than the amount of total water (i.e., influent wastewater, precipitation, and groundwater entering the system). Additional land for expansion of the existing land disposal and reclamation facilities is not currently available. During some wet years, the Discharger has entered the winter season with a substantial amount of water still in its storage reservoir from the previous winter. This has resulted in unauthorized emergency discharges from the storage/polishing reservoir to Bloods Creek at the end of the snowmelt seasons in the late 1990s, with the most recent discharge occurring in 1999. The Discharger has attributed the unauthorized discharges due to lack of adequate storage capacity, excessive infiltration and inflow (I/I), consecutive wet years, and heavy snowmelt. To address the unauthorized discharges, the Regional Water Quality Control Board (Central Valley Water Board) adopted Cease and Desist Order (CDO) Nos. 5-00-001 and 5-01-209. In response to CDO No. 5-01-209, the Discharger submitted a *Land Disposal Maximization Plan* in February 2002, which evaluated the feasibility of options that would either minimize flow to the land disposal facilities or maximize the land disposal capacity of the Facility. The Discharger chose to implement five options from the plan and concluded that if the chosen plan were implemented, land disposal capacity would be increased by 81 million gallons. The options chosen included design and implementation of a water conservation program, implementation of an I/I program, evaluation for the potential to increase irrigation application by evaluating potential expansion within current permitted land and exploring the addition of previously permitted 10 acres of Orvis Meadow land, and applying for extension of the USFS special use permit amendment beyond 2011. Based on the Discharger's initial steps taken in implementing the plan and the commitment to implement the plan in its entirety, the Central Valley Water Board rescinded CDO No. 5-01-209 on 7 June 2002. The Discharger has continued to implement a water conservation program and I/I program. As discussed above, the Discharger has maintained a total of 80 acres of usable disposal area despite expiration of the USFS special use program amendment in 2011. Use of the Orvis Meadow land for land disposal is infeasible due to the potential for runoff into Bloods Creek.

The Facility has a design treatment capacity of 0.50 MGD. However, consistent with Order No. R5-2005-0139 and as described further in section IV.B.2.b of the Fact Sheet, this Order authorizes the discharge of up to a maximum daily effluent flow of 2.5 MGD and an average monthly effluent flow of 1.0 MGD from the storage/polishing reservoir to Bloods Creek. Discharges to Bloods Creek are allowed only during snowmelt season (i.e.,1 January through 30 June) and only when the effluent receives at least 20:1 dilution from the receiving water.

B. Discharge Points and Receiving Waters

1. The Facility is located in Sections 18 and 19, T7N, R18E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Bloods Creek, a water of the United States and a tributary to the North Fork Stanislaus River which is a source to New Melones Reservoir, at a point latitude 38° 27' 25" N and longitude 120° 02' 13" W.

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

1. Effluent Limitations – Discharge to Storage/Polishing Reservoir

Effluent limitations contained in Order No. R5-2005-0139 for discharges from the aeration pond to the storage/polishing reservoir and representative monitoring data from the term of Order No. R5-2005-0139 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge to Storage/Polishing Reservoir

Parameter	Units	Effluent Limitation[1]			Monitoring Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	14	14	14
Total Suspended Solids	mg/L	10	15	20	37	67	67
Settleable Solids	ml/L	0.1	--	0.2	<1.0	--	<1.0
Total Coliform Organisms[2]	MPN/100 mL	--	2.2[3]	23	--	80	80
Turbidity	NTU	--	--	5/2[4]	11.43[5]	--	NR

NR = Not Reported

1 In accordance with Order No. R5-2005-0139, effluent limitations for discharges to the storage/polishing reservoir were effective 1 October 2008. Therefore, this table represents monitoring conducted between 1 October 2008 and 30 June 2010.

2 The Discharger reported in the ROWD that monitoring for total coliform prior to September 2009 was not representative of the effluent from the aeration pond because the sampling procedure was incorrect. Therefore, monitoring data for total coliform organisms reported in this table is for sampling conducted after October 2009 when the sampling procedure was corrected.

3 Applied as a 7-day median effluent limitation.

4 Applied as a daily average effluent limitation.

5 The Discharger did not report turbidity in the monthly SMRs. This value was reported in section 3.2.3 of the ROWD and occurred in July 2009.

2. Effluent Limitations – Discharge to Bloods Creek at Discharge Point No. 001

Effluent limitations contained in Order No. R5-2005-0139 for discharges from the storage/polishing reservoir to Bloods Creek (Discharge Point No. 001, Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R5-2005-0139 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge to Bloods Creek

Parameter	Units	Effluent Limitation			Monitoring Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	1.0	--	2.5	NR		
pH	standard units	6.5 – 8.5			4.42 – 10.3		
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	40	60	4.9	4.9	4.9
	lbs/day[2]	250	330	1,250	NR	NR	NR
	% Removal	--	--	65	--	--	NR
Total Suspended Solids	mg/L	30	40	60	8.4	14	14
	lbs/day[2]	250	330	1,250	NR	NR	NR
	% Removal	--	--	65	--	--	NR
Total Coliform Organisms	MPN/100 mL	--	23[3,4]	240[3]	--	NR	NR
Settleable Solids	ml/L	0.1	--	0.2[5]	NR	--	NR
Chlorine Residual	mg/L	0.01[6]	--	0.02[7]	NR	--	NR
	lbs/day[2]	0.084[6]	--	0.42[7]	NR	--	NR
Copper	µg/L	16.3[8]	--	--	4.8[9]	--	--
		0.95[10]	--	1.9[10]	1.1[11]	--	1.8[11]
	lbs/day[2]	0.008[10]	--	0.04[10]	NR	--	NR
Iron	µg/L	300	--	--	346	--	--
	lbs/day[2]	2.5	--	--	NR	--	--
Manganese	µg/L	50	--	--	138	--	--
	lbs/day[2]	0.42	--	--	NR	--	--
Acute Toxicity	% Survival	--	--	[12]	--	--	NR

NR = Not Reported

1 Monitoring data reported in this table were collected during the discharge season (1 January through 1 June) between January 2006 and June 2010. No discharges to Bloods Creek occurred during the term of Order No. R5-2005-0139; therefore, monitoring data reported in this table represents data collected at the surface of the storage/polishing reservoir.

2 Mass limitations are based on a maximum flow of 1.0 MGD (for average monthly and average weekly effluent limitations) and 2.5 MGD (for maximum daily effluent limitations) and are calculated as follows: Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor) = lbs/day.

3 Effluent limitations effective until 1 October 2008.

4 Applied as a 7-day median effluent limitation.

5 Applied as a daily average effluent limitation.

6 Applied as a 4-day average effluent limitation.

7 Applied as a 1-hour average effluent limitation.

8 Interim effluent limitation effective until 21 May 2010.

9 Value represents monitoring conducted prior to 21 May 2010.

10 Final effluent limitation effective 22 May 2010.

11 Value represents monitoring data conducted after 22 May 2010.

12 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 or more consecutive bioassays: 90%

D. Compliance Summary

There were no major violations during the term of Order No. R5-2005-0139.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in the Findings in section II of this Order. The applicable plans, policies, and regulations relevant to the discharge include the following:

A. Legal Authorities

This Order is issued pursuant to regulations in the Clean Water Act (CWA) and the California Water Code (CWC) as specified in the Finding contained at section II.C of this Order.

B. California Environmental Quality Act (CEQA)

This Order meets the requirements of CEQA as specified in the Finding contained at section II.E of this Order.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** This Order implements the following water quality control plans as specified in the Finding contained at section II.H of this Order.

   a. *Water Quality Control Plan, Fourth Edition (Revised September 2009), for the Sacramento and San Joaquin River Basins* (Basin Plan)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.

3. **State Implementation Policy (SIP).** This Order implements the SIP as specified in the Finding contained at section II.I of this Order.

4. **Alaska Rule.** This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.

5. **Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

6. **Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.M of this Order.

Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the CWC, 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 (RPA) 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 CWC 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.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 CFR 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. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Stormwater General Order. This Order does not regulate storm water.

9. **Endangered Species Act.** This Order is consistent with the Endangered Species Act as specified in the Finding contained at section II.P of this Order.

10. **Water Reuse Policy.** The Basin Plan's Water Reuse Policy states, "*The Regional Water Board encourages the reclamation and reuse of wastewater…and requires as part of a Report of Waste Discharge an evaluation of reuse and land disposal options as alternative disposal methods. Reuse options should include consideration of the following, where appropriate, based on the quality of the wastewater and the required quality for the specific reuses: industrial and municipal supply, crop irrigation, landscape irrigation, ground water recharge, and wetland restoration*." The purpose of the Water Reuse Policy is to evaluate alternative methods of disposal to prevent unnecessary discharges to surface water.

The Discharger disposes of treated wastewater via spray irrigation of land leased from C. Bruce Orvis, TBH Partners, and USFS. The land discharge is regulated by Order No. 5-01-208. Order No. 5-01-208 requires that the Discharger maintain sufficient storage capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary I/I during the non-irrigation season. As described further in Section II.A of this Fact Sheet, the effluent disposal potential of the Facility is less than the amount of total water (i.e., influent wastewater, precipitation, and groundwater entering the system). During some wet years, the Discharger has entered the winter season with a substantial amount of water still in its storage reservoir from the previous winter, which has resulted in unauthorized emergency discharges from the storage/polishing reservoir to Bloods Creek. The Discharger has attributed the unauthorized discharges due to lack of adequate storage capacity, excessive I/I, consecutive wet years, and heavy snowmelt.

In the February 2002 Land Disposal Maximization Plan, the Discharger evaluated the feasibility of options that would either minimize flow to the land disposal facilities or maximize the land disposal capacity of the Facility, including design and implementation of a water conservation program, implementation of an I/I program, evaluation for the potential to increase irrigation application by evaluating potential expansion within current permitted land and exploring the addition of previously permitted 10 acres of Orvis Meadow land, and applying for extension of the USFS special use permit. Additional land disposal sites are not available at this time. This Order requires the Discharger to prepare and submit an evaluation that identifies additional alternatives to increase land disposal capacity, and implement feasible methods for increasing land disposal capacity identified in the evaluation.

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 12 November 2010 USEPA gave partial approval to California's 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 CFR Part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Bloods Creek and the North Fork Stanislaus River upstream of the New Melones Reservoir are not listed on the 303(d) list of impaired water bodies.

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body

combination. TMDLs have not been adopted for Bloods Creek or the North Fork Stanislaus River upstream of the New Melones Reservoir.

E. Other Plans, Polices and Regulations – Not Applicable

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 CFR 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 CFR 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 CFR 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 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 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 page IV-17.00 contains an implementation policy, "*Policy for 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 CFR 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) USEPA'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 CFR 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-8.00.) 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 a minimum, "…*water designated for use as domestic or municipal supply (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 impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses*."

A. Discharge Prohibitions

1. This Order prohibits discharge of wastewater at a location or in a manner different from that described in the Findings. This prohibition allows the Discharger to discharge waste only in accordance with WDRs. It is based on CWA sections 301 and 402 and CWC section 13263.

2. 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 CFR 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 CFR 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 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 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation, provided that the bypass does not cause violation of effluent and/or receiving water limitations.

3. This Order prohibits creation of a nuisance by the discharge and its treatment. This prohibition is based on CWC section 13050.

4. This Order prohibits the Discharger from allowing pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. This prohibition is necessary to ensure that the wastewater provides proper treatment and that dilution is not used to comply with the requirements of this Order.

5. As described further in section II.A of this Fact Sheet, discharges to Bloods Creek are only necessary to maintain design conditions in the storage/polishing reservoir in

emergency situations during severe wet weather periods and during the snowmelt season. The Discharger has attributed the necessity for these discharges to lack of adequate storage capacity, excessive I/I, consecutive wet years, and heavy snowmelt. Since snowmelt season varies from year to year, the maximum amount of flow in Bloods Creek can occur anytime between December to late June, depending on the timing and depth of snowfall, during which time adequate dilution is available. Therefore, the timing of the discharge to maximize dilution could occur anytime within that window depending on the particular weather patterns for that year. To ensure that the Discharger mitigates the need to discharge to Bloods Creek and that discharges to Bloods Creek occur only when necessary and when diluting flows in Bloods Creek are greatest, this Order prohibits discharges to Bloods Creek between 1 July and 31 December and prohibits discharges to Bloods Creek that do not receive 20:1 dilution. To ensure that the Discharger maximizes land disposal and discharges occur only when necessary, this Order also establishes a prohibition of discharges to Bloods Creek when the storage/polishing reservoir has more than 35 million gallons of available storage capacity (i.e., when the storage/polishing reservoir is two-thirds full).

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 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 CFR Part 133.

Regulations promulgated in 40 CFR 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 USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 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. Order No. R5-2005-0139 established an average weekly effluent limitation (AWEL) and an average monthly effluent limitation (AMEL) of 40 mg/L and 30 mg/L, respectively, for BOD5 and TSS. Federal regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS at 45 mg/L and 30 mg/L, respectively. In accordance with federal anti-backsliding requirements, this Order retains the AWEL of 40 mg/L. Consistent with Order No. R5-2005-0139, a maximum daily effluent limitation (MDEL) of 60 mg/L for BOD_5 and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

40 CFR 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. Due to concerns that the wet weather influent wastestream may contain significantly diluted levels of BOD_5 and TSS, and because the Facility utilizes a waste stabilization pond, Order No. R5-2005-0139 included an average monthly percent removal limitation for BOD_5 and TSS of 65 percent.

40 CFR 133.103(d) allows for less stringent percent removal requirements for influents that have low concentrations of BOD_5 and TSS, provided the less concentrated influent wastewater is not the result of excessive I/I. As described in section 3.1.3 of the April 2010 ROWD, the Discharger estimated that I/I constituted approximately 46 percent of the influent flow during 2009, with the majority of I/I occurring during the snowmelt months of March through June. Due to the amount of I/I, less stringent percent removal limitations pursuant to 40 CFR 133.103(d) are not appropriate.

40 CFR 133.105 allows alternative concentration and percent removal limitations for facilities using trickling filters and waste stabilization ponds that meet the requirements for “equivalent to secondary treatment”, which are defined in 40 CFR 133.101, in part, as facilities where the BOD_5 and TSS effluent concentrations, consistently achievable through proper operation and maintenance of the treatment works, exceed the minimum level required by 40 CFR 133.102(a) and (b). Monitoring data for BOD_5 and TSS indicates that effluent concentrations are consistently below the minimum weekly and monthly average level of effluent quality attainable by secondary treatment at 45 mg/L and 30 mg/L, respectively. Therefore, the Facility does not meet the requirements for equivalent to secondary limitations at 40 CFR 133.105. Therefore, this Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. Flow. The Facility was designed to provide a secondary level of treatment for up to a design flow of 0.50 MGD. However, Order No. R5-2005-0139 established an average monthly flow rate of 1.0 MGD and a maximum daily flow rate of 2.5 MGD to minimize the timeframe for discharge (i.e., allowing the discharge of

a large volume over a short time period when Bloods Creek flows are very high due to snowmelt). These flow limitations will avoid gross over-irrigation of the land disposal area during summer months and will allow the Discharger to maintain reserve capacity in the storage reservoir to handle unexpected situations or make an emergency discharge, when necessary. In accordance with the prohibitions at section III of this Order, discharges to Bloods Creek are only allowed when necessary, during extremely wet weather periods, during snowmelt season, and only when the effluent receives at least 20:1 dilution from Bloods Creek, during which time the public use of Bloods Creek is expected to be minimal.

Prior to adoption of Order No. R5-2005-0139, the Discharger estimated that a maximum volume of 63 million gallons of effluent could be discharged to Bloods Creek while maintaining 20:1 dilution of the effluent. The Discharger has since conducted additional monitoring to update the worst-case hydraulic balances, and submitted a 15 September 2010 memorandum from Gary Ghio, District Engineer, titled *Final District Capacity Determination* and a 24 September 2010 letter from Balance Hydraulics, Inc. titled *Streamflow-Discharge Rating Curve Development and Calculated Total Streamflow for Water Year 2010*. Based on the updated information for a 100-year water balance, the Discharger estimated that a total volume of 136 million gallons of effluent could be discharged to Bloods Creek while still maintaining 20:1 dilution. The Discharger, however, has not requested an increase in the permitted flow rate. Consistent with Order No. R5-2005-0139, this Order includes an average monthly flow effluent limitation of 1.0 MGD and a maximum daily flow effluent limitation of 2.5 MGD as necessary to handle unexpected situations without being forced to over-irrigate the land disposal areas and/or to minimize uncontrolled spillages from the storage/polishing reservoir.

c. **pH.** The secondary treatment regulations at 40 CFR Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	1.0	--	2.5	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	40	60	--	--
	lbs/day[1]	250	330	1,250	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids	mg/L	30	40	60	--	--
	lbs/day[1]	250	330	1,250	--	--
	% Removal	85	--	--	--	--

[1] Mass limits are based on 1.0 MGD for monthly and weekly average effluent limitations and 2.5 MGD for maximum daily effluent limitations.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates 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, WQBELs must be established using: (1) USEPA 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 40 CFR 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated 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 on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial 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 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 CFR sections 131.2 and 131.10, require that all waters of the State 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 CFR, 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 CFR 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

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Bloods Creek, but does identify present and potential uses for the North Fork Stanislaus River from its source to New Melones Reservoir, to which Bloods Creek is tributary. Thus, beneficial uses applicable to Bloods Creek are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Bloods Creek	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); hydropower generation (POW); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).

In reviewing whether the existing and/or potential uses of the North Fork Stanislaus River from the source to the New Melones Reservoir apply to Bloods Creek, the Central Valley Water Board has considered the following facts:

i. Domestic Supply and Agricultural Supply

The Central Valley Water Board is required to apply the beneficial uses of municipal and domestic supply to Bloods Creek based on State Water Board Resolution No. 88-63 which was incorporated in the Basin Plan pursuant to Central Valley Water Board Resolution No. 89-056. In addition, the State Water Board has issued water rights to existing water users along the North Fork Stanislaus River downstream of the discharge for domestic and irrigation uses. Bloods Creek is an ephemeral stream and the North Fork Stanislaus River likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water.

ii. Water Contact and Non-contact Recreation

The Central Valley Water Board finds that Bloods Creek generally flows through cow pasture and at some places flows along camping and

recreational areas. There is ready public access to Bloods Creek, exclusion of the public is unrealistic and contact recreational activities currently exist along the North Fork Stanislaus River (downstream of discharge point) and these uses are likely to increase as the population in the area grows. Prior to flowing into the North Fork Stanislaus River, Bloods Creek flows through areas of general public access, meadows, camping areas, and parks. While access during the discharge season may be limited during typical years due to snow and wet conditions, the potential for public contact with the receiving water is possible, especially during dry years. The North Fork Stanislaus River and the New Melones Reservoir also offer recreational opportunities.

iii. Groundwater Recharge

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Bloods Creek is at times dry, it is reasonable to assume that the stream water is lost by evaporation, flow downstream and percolation to groundwater providing a source of municipal and irrigation water supply.

iv. Freshwater Replenishment

When water is present in Bloods Creek, there is hydraulic continuity between Bloods Creek and the North Fork Stanislaus River. During periods of hydraulic continuity, Bloods Creek adds to the water quantity and may impact the quality of water flowing downstream in the Stanislaus River.

v. Preservation and Enhancement of Fish, Wildlife, and Other Aquatic Resources

Bloods Creek flows to the North Fork Stanislaus River and then into the New Melones Reservoir. The Basin Plan (Table II-1) designates the New Melones Reservoir as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold freshwater habitat designation applies to Bloods Creek. The cold freshwater habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L.

Upon review of the flow conditions, habitat values, and beneficial uses of Bloods Creek, and the facts described above, the Central Valley Water Board finds that the beneficial uses identified in the Basin Plan for the North Fork Stanislaus River from the source to New Melones Reservoir are applicable to Bloods Creek.

b. Effluent and Ambient Background Data. The RPA, as described in section IV.C.3 of this Fact Sheet, was based on effluent[1] and receiving water data from

[1] Since there has been no surface water discharge during the last permit term, water quality samples collected from the storage/polishing pond has been used to characterize the effluent. Throughout the Fact Sheet where the term “effluent” data is used, this is referring to the water quality data collected from the storage/polishing pond.

the 2008, 2009, and 2010 discharge seasons, submitted in the monthly SMRs and ROWD. In accordance with discharge prohibition A.1 from Order No. R5-2005-0139, only data collected during the discharge seasons (1 January – 30 June of each year) was used to conduct the RPA.

Because no discharges to Bloods Creek have occurred during the term of Order No. R5-2005-0139, the Discharger historically monitored the surface of the aeration pond to characterize the effluent. However, as part of an outfall project completed in 2007, the Discharger installed a sample tap in the equipment house which is connected to the outfall pipe from the storage/polishing reservoir to Bloods Creek. The intake from the storage/polishing reservoir is a 12-inch high density polyethylene (HDPE) flexible hose attached to a float, designed to keep the intake suspended approximately 4 feet below the surface. This configuration allows for effluent to be drawn from the uppermost zone (i.e., the epilimnion), rather than the lowermost zone (i.e., the hypolimnion), which is of lower quality.

In December 2009, the Discharger began sampling the storage/polishing reservoir from both the surface and the sample tap. Monitoring data collected from these two sampling locations are inconsistent. The Discharger believes that the higher pollutant concentrations observed at the sample tap can be attributed to substrate growth in the effluent pipeline and the use of iron pipe[1]. This contamination is not expected to be observed during an actual discharge event due to the large amount of effluent that would be discharged, compared to the small amount that enters the pipeline during sampling at the sample tap. Due to the possible contamination of effluent samples taken from the sample tap, only monitoring data collected from the surface of the storage/polishing reservoir was used to conduct the RPA. Storage/polishing reservoir data used to conduct the RPA is limited to monitoring from the surface of the storage/polishing reservoir conducted during the 2008, 2009, and 2010 discharge seasons, which included up to 14 samples for certain constituents and one priority pollutant scan.

c. Priority Pollutant Metals

i. Hardness-dependent CTR Metals. The *California Toxics Rule* and the *National Toxics Rule* 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[2], the

[1] This was demonstrated by the data for iron, manganese, CBOD, TSS, TDS, EC, and alkalinity. (see Dischargers June 2010 Self-Monitoring Report, page 4)

[2] 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.

CTR[1] 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 CFR § 131.38(c)(4)) 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. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id*., p.10.). Guidance on the selection of the appropriate ambient hardness was provided by the State Water Board in Order No. WQO 2008-0008 (City of Davis).

The State Water Board allows, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent. (Order WQO 2008-0008, p. 11.) Regional water boards have considerable discretion in determining ambient hardness as long as the hardness values are protective under all flow conditions. (*Id*., pp. 10-11.)

As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces hardness-dependent CTR criteria based on the reasonable worst-case downstream ambient hardness that ensure these metals do not cause receiving water toxicity under any downstream receiving water condition. Under this methodology, the Central Valley Water Board considers all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body[2]. This ensures that effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location, and throughout the water body including at the point of discharge into the water body.

(a) Reasonable Potential Analysis. The SIP in Section 1.3 states, "The RWQCB shall…determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the maximum effluent concentration (MEC) and maximum ambient

[1] 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. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

[2] All effluent discharges will change the ambient downstream metals concentration and hardness. It is not possible to change the metals concentration without also changing the hardness. The Court concluded, "Stated differently, the criteria should be based on the upstream receiving water hardness, adjusted, as necessary, for effects of the effluent." (*Id*. at 14)

background concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

(1) The SIP requires a WQBEL if the MEC exceeds the applicable criterion, adjusted for hardness. For comparing the MEC to the applicable criterion, the "fully mixed" reasonable worst-case downstream ambient hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for comparing the MEC to the applicable criterion, the reasonable worst-case downstream ambient hardness was used to adjust the criterion. For this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection (b), below.

(2) The SIP requires a WQBEL if the receiving water is impaired upstream (outside the influence) of the discharge, i.e., if the Maximum Ambient Background Concentration of a pollutant exceeds the applicable criterion, adjusted for hardness[1]. For comparing the Maximum Ambient Background Concentration to the applicable criterion, the reasonable worst-case upstream ambient hardness was used to adjust the criteria. This is appropriate, because this area is outside the influence of the discharge. Since the discharge does not impact the upstream hardness, the effect of the effluent hardness was not included in this evaluation.

(b) Calculation of WQBELs. The remaining discussion in this section relates to the development of WQBELs when it has been determined that the discharge has reasonable potential to cause or contribute to an exceedance of the CTR hardness-dependent metals criteria in the receiving water.

A 2006 Study[2] developed procedures for calculating the effluent concentration allowance (ECA)[3] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and

[1] The pollutant must also be detected in the effluent.
[2] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.
[3] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP.

metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. This method is superior to relying on downstream receiving water samples alone because it captures all possible mixed conditions in the receiving water. Both receiving water and effluent hardness vary based on flow and other factors, but the variability of receiving water and effluent hardness is sometimes independent. Using a calculated hardness value ensures that the Central Valley Water Board considers all possible mixed downstream values that may result from these two independent variables. Relying on receiving water sampling alone is less likely to capture all possible mixed downstream conditions.

The equation describing the total recoverable regulatory criterion, as established in the CTR[1], is as follows:

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

Where:

H = hardness (as $CaCO_3$)[2]

WER = water-effects ratio

m, b = metal- and criterion-specific constants

In accordance with the CTR, the default value for the WER is 1. A WER study must be conducted to use a value other than 1. The constants “m” and “b” are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The equation for the ECA is defined in Section 1.4, Step 2, of the SIP and is as follows:

$$\text{ECA} = C \text{ (when } C \leq B)^{3} \qquad \text{(Equation 2)}$$

Where:

C = the priority pollutant criterion/objective, adjusted for hardness (see Equation 1, above)

B = the ambient background concentration

[1] 40 CFR § 131.38(b)(2).
[2] For this discussion, all hardness values are in mg/L as $CaCO_3$.
[3] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).

The 2006 Study demonstrated that the relationship between hardness and the calculated criteria is the same for some metals, so the same procedure for calculating the ECA may be used for these metals. The same procedure can be used for chronic cadmium, chromium III, copper, nickel, and zinc. These metals are hereinafter referred to as "Concave Down Metals". "Concave Down" refers to the shape of the curve represented by the relationship between hardness and the CTR criteria in Equation 1. Another similar procedure can be used for determining the ECA for acute cadmium, lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

ECA for Chronic Cadmium, Chromium III, Copper, Nickel, and Zinc – For Concave Down Metals, the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria[1]. The 2006 Study proves that regardless of whether the effluent hardness is lower or greater than the upstream hardness, the reasonable worst-case flow condition is the effluent dominated condition (i.e., no receiving water flow)[2]. Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 6.9 mg/L to 121 mg/L, based on nine samples from January 2010 to June 2010. The upstream receiving water hardness varied from 10 mg/L to 91 mg/L, based on seven samples from January 2010 to June 2010. There is no downstream receiving water hardness data, since there has been no discharge since 1999. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 6.9 mg/L. As demonstrated in the example shown in Table F-6, below, using this hardness to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all flow conditions, from the effluent dominated condition to high flow condition.

This example for copper assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 10 mg/L), and
- Upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

[1] 2006 Study, p. 5700

[2] There are two typographical errors in the 2006 Study in the discussion of Concave Down Metals when the effluent hardness is less than the receiving water hardness. The effluent and receiving water hardness were transposed in the discussion, but the correct hardness values were used in the calculations. The typographical errors were confirmed by the author of the 2006 Study, by email dated 1 April 2011, from Dr. Robert Emerick to Mr. James Marshall, Central Valley Water Board.

Using these reasonable worst-case receiving water conditions, a simple mass balance (as shown in Equation 3, below) accounts for all possible mixtures of effluent and receiving water under all flow conditions.

$C_{MIX} = C_{RW} \times (1\text{-}EF) + C_{Eff} \times (EF)$ (Equation 3)

Where:

C_{MIX} = Mixed concentration (e.g., metals or hardness)

C_{RW} = Upstream receiving water concentration

C_{Eff} = Effluent concentration

EF = Effluent fraction

In this example, for copper, for any receiving water flow condition (high flow to low flow[1]), the fully-mixed downstream ambient copper concentration is in compliance with the CTR criteria[2].

[1] This Order requires at least 20:1 dilution, therefore, the term "low flow" in this case is representative of the area near the point of discharge prior to mixing with the receiving water.

[2] This method considers the actual lowest upstream hardness and actual lowest effluent hardness to determine the reasonable worst-case ambient downstream hardness under all possible receiving water flow conditions. Table F-6 demonstrates that the receiving water is always in compliance with the CTR criteria at the fully-mixed location in the receiving water. It also demonstrates that the receiving water is in compliance with the CTR criteria for all mixtures from the point of discharge to the fully-mixed location. Therefore, a mixing zone is not used for compliance.

Table F-6. Copper ECA Evaluation

Lowest Observed Effluent Hardness	**6.9 mg/L**
Lowest Observed Upstream Receiving Water Hardness	**10 mg/L**
Highest Assumed Upstream Receiving Water Copper Concentration	**1.3 µg/L[1]**
Copper $ECA_{chronic}$[2]	**0.95 µg/L**

Effluent Fraction[6]		**Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	9.9	1.3	1.3	Yes
	5%	9.8	1.3	1.3	Yes
	15%	9.5	1.3	1.3	Yes
	25%	9.2	1.2	1.2	Yes
	50%	8.5	1.1	1.1	Yes
Low Flow	75%	7.7	1.0	1.0	Yes
	100%	6.9	0.95	0.95	Yes

1 Higheset assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 6.9 mg/L.
2 ECA calculated using Equation 1 for copper criterion at a hardness of 6.9 mg/L.
3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction.
6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

ECA for Acute Cadmium, Lead, and Acute Silver – For Concave Up Metals, the relationship between hardness and the metals criteria is different than for Concave Down Metals. The 2006 Study demonstrates that for Concave Up Metals, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may contain metals concentrations that exceed the CTR criteria and could cause toxicity. For these metals, the 2006 Study provides a mathematical approach to calculate the ECA that is protective of aquatic life, in all areas of the receiving water affected by the discharge, under all discharge and receiving water flow (see Equation 4, below).

The ECA, as calculated using Equation 4, is based on the reasonable worst-case upstream receiving water hardness, the lowest observed effluent hardness, and assuming no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion). Equation 4 is not used in place of the CTR equation (Equation 1). Rather, Equation 4, which is derived using the CTR equation, is used as a direct approach for calculating the ECA. This replaces an iterative approach for calculating the ECA. The CTR equation has been used to evaluate the receiving water downstream of the

discharge at all discharge and flow conditions to ensure the ECA is protective (e.g., see Table F-7).

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \quad (\textit{Equation } 4)$$

Where:

m, b = criterion specific constants (from CTR)

H_e = minimum observed effluent hardness

H_{rw} = reasonable worst-case upstream receiving water hardness

An example is shown below for a Concave Up Metal. As previously mentioned, the lowest observed effluent hardness is 6.9 mg/L, while the upstream receiving water hardness ranged from 10 mg/L to 91 mg/L.

Using the assumption of no assimilative capacity at the maximum upstream receiving water hardness results in a negative ECA, which means no mixture of the effluent and receiving water is in compliance with the CTR criteria. However, calculating the ECA assuming no assimilative capacity at the maximum upstream receiving water hardness is not supported by the data. The maximum upstream receiving water hardness is 91 mg/L, which corresponds to a chronic CTR criterion for lead of 2.8 µg/L. Based on two samples in the receiving water, lead was not detected in the receiving water with a method detection limit (MDL) of 0.10 µg/L, which demonstrates there is assimilative capacity under those conditions. Under these circumstances, the 2006 Study recommends an iterative approach for calculating the ECA assuming some assimilative capacity exists in the receiving water. Therefore, the ECA has been iteratively determined assuming the lowest observed upstream receiving water hardness, a maximum upstream lead concentration of 0.10 µg/L, and the effluent at the lowest observed hardness. This results in a chronic ECA for lead of 0.10 µg/L.

Table F-7. Lead ECA Evaluation

Lowest Observed Effluent Hardness	**6.9 mg/L**
Highest Observed Upstream Receiving Water Hardness	**91 mg/L**
Highest Assumed Upstream Receiving Water Lead Concentration	**0.17 µg/L[1]**
Lead $ECA_{chronic}$[2]	**-0.50 µg/L**

Effluent Fraction[6]		**Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	90	2.8	2.8	Yes
	5%	87	2.7	2.7	Yes
	15%	78	2.3	2.3	Yes
	25%	70	2.0	2.0	Yes
	50%	49	1.3	1.2	Yes
Low Flow	75%	28	0.63	0.33	Yes
	100%	6.9	0.11	-0.50	Yes

1 Highest assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 91 mg/L (as $CaCO_3$).
2 ECA calculated using Equation 4 for chronic criteria.
3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.
6 The effluent fraction 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-8. Lead ECA Evaluation

Lowest Observed Effluent Hardness	**6.9 mg/L**
Lowest Observed Upstream Receiving Water Hardness	**10 mg/L**
Highest Assumed Upstream Receiving Water Lead Concentration	**0.10 µg/L[1]**
Lead $ECA_{chronic}$[2]	**0.10 µg/L**

Effluent Fraction[6]		**Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	10	0.17	0.10	Yes
	5%	9.8	0.17	0.10	Yes
	15%	9.5	0.16	0.10	Yes
	25%	9.2	0.15	0.10	Yes
	50%	8.5	0.14	0.10	Yes
Low Flow	75%	7.7	0.12	0.10	Yes
	100%	6.9	0.11	0.10	Yes

1 Highest assumed upstream receiving water lead concentration based on the upstream receiving water lead method detection limit because lead was not detected in Bloods Creek.
2 ECA determined iteratively until all mixtures of effluent and receiving water are in compliance with the CTR criteria.
3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.
4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction using Equation 3.
6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

In this case for lead, the lowest possible fully-mixed downstream hardness is 6.9 mg/L (see last row of Table F-8), which corresponds to a total recoverable chronic ECA of 0.11 µg/L, using Equations 1 and 2. However, a lower chronic ECA is required to ensure the discharge does not cause toxicity at any location in the receiving water, at or downstream of the discharge, which would be a violation the Basin Plan's narrative toxicity objective[1]. This is because for concave up metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in CTR criterion exceedances[2]. As shown in Table F-8, a chronic ECA of 0.10 µg/L is necessary to be protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

1 "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, p. III-8.01.)
2 Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill. (p. 5702)

Using the procedures discussed above to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-8 for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. Therefore, these procedures have been used to calculate the ECA for all Concave Up Metals in this Order.

Based on the procedures discussed above, Table F-9 lists all the CTR hardness-dependent metals and the associated ECA used in this Order.

Table F-9. Summary of ECA Evaluations for CTR Hardness-Dependent Metals

CTR Metals	ECA (µg/L, total recoverable)	
	Acute	Chronic
Copper	1.1	0.95
Chromium III	194	23
Cadmium	0.22	0.30
Lead	0.10	2.6
Nickel	49	5
Silver	0.04	--
Zinc	12	12

ii. **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. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

d. Assimilative Capacity/Mixing Zone

Based on the available information, Bloods Creek is an ephemeral stream; however, this Order requires the Discharger to control the effluent discharge rate such that the effluent is diluted by at least 20:1 by Bloods Creek. The SIP allows for the granting of mixing zones and dilution credits where assimilative capacity is available; however, the Discharger has not submitted a dilution/mixing zone study that meets the requirements of SIP section 1.4.2.2. Therefore, effluent limitations in this Order have been calculated without credit for dilution and must be met at the end-of-pipe. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Should the Discharger submit an approved dilution/mixing zone study that meets the requirements of section 1.4.2.2 of the SIP, the Central Valley Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor.

3. Determining the Need for WQBELs

a. The Central Valley Water Board conducted the RPA in accordance with section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Central Valley Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency*." Therefore, in this Order, unless otherwise stated, the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs.

b. Constituents with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; 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 an appropriate effluent limitation.

i. Salinity

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity, total dissolved solids, sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity (EC), total dissolved solids (TDS), sulfate, and chloride.

Table F-10. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[2]	Effluent[3]	
			Average	Maximum
EC (µmhos/cm)	Varies[4]	900, 1600, 2200	126	144
TDS (mg/L)	Varies	500, 1000, 1500	140	378
Sulfate (mg/L)	Varies	250, 500, 600	NR	NR
Chloride (mg/L)	Varies	250, 500, 600	8.5	18

NR = Not Reported

1 Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

2 The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

3 Average and maximum values based on data collected during the discharge seasons from January 2008 until June 2010.

4 The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 µmhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

[1] See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

(1) Chloride. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

(2) Electrical Conductivity. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 µmhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 µmhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(3) Sulfate. The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(4) Total Dissolved Solids. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially

harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(b) RPA Results

(1) Chloride. Chloride concentrations in the effluent ranged from <0.50 mg/L to 18 mg/L, with an average of 8.5 mg/L. These levels do not exceed the agricultural water goal. Background concentrations in Bloods Creek ranged from 0.96 mg/L to 8.6 mg/L, with an average of 3.6 mg/L, based on six samples collected by the Discharger.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports show an average effluent EC of 126 µmhos/cm, with a range from 107 µmhos/cm to 144 µmhos/cm. These levels do not exceed the agricultural water goal. The background receiving water EC averaged 69 µmhos/cm.

(3) Sulfate. Effluent and receiving water monitoring data for sulfate was not available.

(4) Total Dissolved Solids. The average TDS effluent concentration was 140 mg/L with concentrations ranging from 38 mg/L to 378 mg/L. These levels do not exceed the applicable water quality objectives. The background receiving water TDS ranged from 30 mg/L to 142 mg/L, with an average of 61 mg/L.

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, due to the Region-wide effort to address salinity in the Central Valley, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

c. 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 aluminum, ammonia, BOD_5, chlorine residual, copper, iron, manganese, pathogens, pH, settleable solids, and TSS. 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. Aluminum

(a) WQO. USEPA developed National Recommended Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for aluminum. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L,

respectively, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The most stringent of these criteria, the chronic criterion of 87 µg/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$). The receiving water pH ranged from 5.2 to 7.0. The receiving stream has been measured to have a low hardness—typically between 10 mg/L and 91 mg/L as $CaCO_3$. This condition is supportive of the applicability of the NAWQC chronic criteria for aluminum, according to USEPA's development document.

(b) RPA Results. The MEC for aluminum was 141 µg/L while the maximum observed upstream receiving water concentration was 100 µg/L. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

(c) WQBELs. This Order contains a final AMEL and maximum daily effluent limitation (MDEL) for aluminum as shown in Table F-12 of this Fact Sheet based on the Basin Plan's narrative objective.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 141 µg/L is less than the applicable MDEL; however, monitoring data indicates that three out of the six months sampled during the term Order No. R5-2005-0139 were above the AMEL. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. The Discharger submitted an infeasibility analysis on 28 April 2011. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order.

ii. Ammonia

(a) WQO. The NAWQC for the protection of freshwater aquatic life for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because Bloods Creek has a beneficial use of cold freshwater habitat and early life stages of fish are likely present during the permitted period of

discharge, the recommended criteria for waters where salmonids and early life stages are present were used.

The maximum permitted effluent pH is 8.5, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L.

A chronic criterion was calculated for each day when paired temperature and pH were measured using receiving water and effluent data for temperature and pH recorded during the discharge season from the Discharger's monthly monitoring reports from August 2007 through June 2010. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting 30-day CCC is 6.75 mg/L (as N) for the receiving water and 3.43 mg/L (as N) for the effluent. The lower of these 30-day CCC's were used in this OrderThe 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 3.43 mg/L (as N), the 4-day average concentration that should not be exceeded is 8.58 mg/L (as N).

(b) RPA Results. Untreated domestic wastewater contains ammonia. 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. 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 would violate the Basin Plan narrative toxicity objective. The MEC for ammonia was 5.6 mg/L while the maximum observed upstream receiving water concentration was 0.67 mg/L. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) WQBELs. The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest

LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and MDEL for ammonia as shown in Table F-12 of this Fact Sheet, based on protection of the Basin Plan's narrative toxicity objective.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that three out of the nine samples taken over the term of the previous permit exceeded the MDEL, and four out of the five months sampled exceeded the AMEL. Analysis of the effluent data shows that the MEC of 5.6 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. The Discharger submitted an infeasibility analysis on 28 April 2011. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order.

iii. Chlorine Residual

(a) WQO. USEPA 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 µg/L and 0.019 µg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) RPA Results. The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Currently, the Discharger does not have dechlorination facilities to dechlorinate the effluent prior to discharge to Bloods Creek. Due to the existing chlorine use and the potential for chlorine to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) WQBELs. The USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to AMELs and MDELs based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 µg/L and 0.019 µg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) Plant Performance and Attainability. Effluent data for chlorine residual is not available to assess whether or not compliance with the effluent limitations is feasible. Due to the potential for inadequate dechlorination, the existing permit established effluent limitations for chlorine residual for discharges to Bloods Creek, and included a compliance schedule allowing until 1 January 2006, or prior to initiation of discharge, to install dechlorination facilities for discharges to Bloods Creek. The Discharger has not yet installed dechlorination facilities. Monitoring for chlorine residual on the surface of the storage/polishing reservoir, from which effluent to be discharged will be drawn, has not been conducted to determine if the natural process in the storage/polishing reservoir provides adequate dechlorination.

At the time that Order No. R5-2005-0139 was adopted, the 12-inch transfer pipe used to transfer chlorinated wastewater from the aeration pond to the storage reservoir was also to be used to discharge effluent to Bloods Creek, which allowed for the potential for short-circuiting. However, during the term of Order No. R5-2005-0139, the Discharger has installed a new 6-inch outfall pipeline and the existing 12-inch pipeline is used exclusively for transferring chlorinated wastewater from the aeration pond to the storage/polishing reservoir, reducing the potential for short-circuiting. Furthermore, due to the long detention time of wastewater in the reservoir and the conditions under which a discharge to surface water is likely to occur (i.e., during snowmelt when at least 20:1 dilution is available), the storage/polishing reservoir may provide natural dechlorination. However, due to the lack of monitoring data, it is uncertain if discharges from the storage/polishing reservoir can comply with the effluent limitations for chlorine residual. Therefore, this Order includes a provision that requires the Discharger to conduct a study to demonstrate that the Facility can comply with effluent limitations for chlorine residual.

iv. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.c.i(a)(1), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 1.1 µg/L and 0.9 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.c.i(a)(2), the applicable acute (1-hour average) and chronic (4-day average) criteria for the receiving water are 1.6 µg/L and 1.3 µg/L, respectively, as total recoverable.

(b) RPA Results. The MEC for copper was 5.6 µg/L and copper was not detected in the background receiving water. Because the MEC exceeds the chronic criterion for the effluent, copper in the discharge

has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. As described in section IV.C.2.c.i of the Fact Sheet, the ECA_{acute} and $ECA_{chronic}$ were determined using the reasonable worst-case downstream ambient hardness of 6.9 mg/L, which is protective under all discharge and mixing conditions. This results in an ECA_{acute} and an $ECA_{chronic}$ for copper of 1.1 µg/L and 0.95 µg/L, respectively. This Order contains a final AMEL and MDEL for copper as shown in Table F-12 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 5.6 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for copper are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the copper effluent limitations is established in TSO No. R5-2011-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

v. Iron

(a) WQO. The Secondary MCL – Consumer Acceptance Limit for iron is 300 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) RPA Results. The maximum annual average effluent and receiving water concentrations were used to evaluate reasonable potential to exceed the Secondary MCL based on input from the Department of Public Health (DPH) and the fact that MCLs are designed to protect human health over long exposure periods. The maximum effluent annual average for iron was 245 µg/L, while the maximum upstream receiving water annual average was 2,509 µg/L. Therefore, iron in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the secondary MCL.

(c) WQBELs. This Order contains a final annual average effluent limitation for iron as shown in Table F-12 of this Fact Sheet, based on

the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the maximum effluent annual average of 245 µg/L is less than the annual average effluent limitation of 300 µg/L. The Central Valley Water Board concludes, therefore, that compliance with these effluent limitations is feasible.

vi. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Using the default conversion factors and the reasonable worst-case measured hardness as described in section IV.C.2.c.i(a)(1), the applicable acute (1-hour average) and chronic (4-day average) criteria for the effluent are 2.6 µg/L and 0.10 µg/L, respectively, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness as described in section IV.C.2.c.i(a)(2), the applicable acute (1-hour average) and chronic (4-day average) criteria for the receiving water are 4.4 µg/L and 0.17 µg/L, respectively.

(b) RPA Results. The MEC for lead was 0.10 µg/L and lead was not detected in the background receiving water. Because the MEC is equivalent to the chronic criterion for the effluent, lead in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. This Order contains a final AMEL and MDEL for lead as shown in Table F-12 of this Fact Sheet, based on the CTR criterion for the protection of freshwater aquatic life.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 0.10 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for lead are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the lead effluent limitations is established in TSO No. R5-2011-**XXXX** in accordance with CWC section 13300, that

requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

vii. Manganese

(a) WQO. The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(b) RPA Results. The maximum annual average effluent and receiving water concentrations were used to evaluate reasonable potential to exceed the Secondary MCL based on input from DPH and the fact that MCLs are designed to protect human health over long exposure periods. The maximum effluent annual average for manganese was 48 µg/L, while the maximum upstream receiving water annual average was 552 µg/L. Therefore, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the secondary MCL.

(c) WQBELs. This Order contains an annual average effluent limitation for manganese as shown in Table F-12 of this Fact Sheet, based on the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the maximum effluent annual average of 48 µg/L is less than the annual average effluent limitation of 50 µg/L. The Central Valley Water Board concludes, therefore, that compliance with these effluent limitations is feasible.

viii. Pathogens

The Central Valley Water Board, when developing NPDES permits, implements recommendations by DPH for the appropriate disinfection requirements for the protection of MUN, REC-1 and AGR. The disinfection requirements in the proposed Order implement the DPH recommendations and are fully protective of the beneficial uses of the receiving water.

(a) WQO. In 1987, the Department of Health Services (DHS) (now the Department of Public Health, or DPH) issued the "Uniform Guidelines for the Disinfection of Wastewater" (Uniform Guidelines), which included recommendations to the Regional Water Board regarding the appropriate level of disinfection for wastewater discharges to surface waters. In a letter to the Regional Water Board dated 8 April 1999, DPH indicated it would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than

20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30 day period. In a subsequent letter dated 1 July 2003, DPH states that a "filtered and disinfected effluent should be required in situations where critical beneficial uses (i.e. food crop irrigation or body contact recreation) are made of the receiving waters unless a 20:1 dilution ratio is available. In these circumstances, a secondary, 23 MPN discharge is acceptable." DPH considers such discharges to be essentially pathogen-free.

On 27 September 2005, a comment letter from Joseph Spano of DHS on the revised Tentative Order recommended tertiary treatment for this discharge to protect waters reaching the south delta and San Joaquin River via its tributaries. Consequently, Order No. R5-2005-0139 was adopted with late revisions that included Title 22-level limitations for discharges to the storage/polishing reservoir, including a 7-day median limitation for total coliform organisms of 2.2 MPN/100 mL. Order No. R5-2005-0139 also included effluent limitations for surface water discharges to Bloods Creek consisting of a 7-day median effluent limitation for total coliform organisms of 23 MPN/100 mL.

On 1 February 2011, the Discharger submitted updated water balance projections to characterize potential discharges to Bloods Creek under various precipitation water year assumptions. WDR Order No. 5-01-208, which regulates the discharge to land, includes an influent flow limit of 100,000 gallons per day (gpd) as an annual average. Based on this limitation, the Discharger provided water balances to determine the climatic conditions that would result in a discharge to Bloods Creek. Based on the water balances, the Discharger does not anticipate a discharge to Bloods Creek until the water precipitation year approaches or exceeds a 1-in-25 year precipitation level. The Discharger developed water balances for several water year precipitation events. During wet years when a discharge is required, the water balances showed that the storage/polishing reservoir is predominantly rain/snowmelt. The storage/polishing reservoir contains at most only 30 percent wastewater under these conditions. The Discharger recently provided water quality data collected from its storage/polishing reservoir that corroborated the large dilution in the storage/polishing reservoir. Water quality samples were collected during May and June 2010, which is the time of year when a discharge may occur under wet years. Although the Facility provides only secondary treatment, the water quality characteristics of the wastewater are at tertiary levels (see Table F-10). At the time of sampling, the storage reservoir was only about one-half full, so under actual discharge conditions it would presumably contain more snowmelt providing even more dilution.

Table F-12. Storage/Polishing Reservoir Data

Pollutant	Units	May 2010	June 2010
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	<1	<1
Total Suspended Solids	mg/L	<5	<5
Total Coliform Organisms	MPN/100 mL	<2	2
Turbidity	NTU	0.36	0.75

Based on the updated information, DPH provided an updated recommendation to the Central Valley Water Board in a letter dated 1 March 2011 stating that they would forgo the tertiary treatment recommendation provided that certain requirements are included in this Order. This Order addresses the recommendations from DPH as follows:

(1) Allow discharge only as a last resort – In order to assure that discharges to Bloods Creek occur only when necessary, this Order requires the Discharger to maximize land application of the effluent and, consistent with Order No. R5-2005-0139, prohibits discharges to Bloods Creek between 1 July and 31 December. This Order also establishes a prohibition of discharges to Bloods Creek when the storage/polishing reservoir has more than 35 million gallons of available storage capacity (i.e., when the storage/polishing reservoir is less than two-thirds full).

(2) Shorten the allowed discharge season – Consistent with Order No. R5-2005-0139, this Order retains the discharge season of 1 January through 30 June. Although the Regional Water Board recognizes that discharges to Bloods Creek, when necessary, will most likely occur towards the end of the discharge season (e.g., May through June), the Regional Water Board is concerned that shortening the discharge season may inhibit the Discharger from discharging when necessary if severe wet weather or snowmelt occurs earlier in the discharge season. However, other provisions established by this Order will ensure discharges to Bloods Creek occur only when necessary and when diluting flows in Bloods Creek are greatest.

(3) Require an I/I study – This Order requires the Discharger to maximize land application of the effluent, which includes continued implementation of water conservation measures and an I/I reduction program. The special provision at section VI.C.4.e.iv of this Order requires the Discharger to provide a detailed description of the efforts taken during the last year to implement new conservation measures and I/I corrective actions measures on an annual basis.

(4) Require an evaluation of alternatives to increase land disposal capacity – The special provision at section VI.C.2.d requires the Discharger to provide an evaluation of additional alternatives to increase land disposal capacity on an annual basis.

(5) Require water quality sampling of the storage reservoir during the discharge season – Section VI.A.1 of the Monitoring and Reporting Program (Attachment E) requires the Discharger to monitor the surface of the storage/polishing reservoir at Monitoring Location PND-001 if a discharge to Bloods Creek does not occur within the discharge season (1 January to 30 June) during the permit term. The Discharger is required to collect samples during conditions under which a discharge to Bloods Creek is most likely to occur (i.e., during snowmelt) in May or June.

(6) Require notification of DPH whenever a discharge is planned – The special provision at section VI.C.6.a of this Order requires the Discharger to notify the Regional Water Board, the Stockton East Water District, and DPH by telephone prior to initiating a discharge to Bloods Creek.

There are no numeric water quality objectives for pathogens applicable to the receiving water for the protection of MUN. The applicable narrative water quality objective that applies to surface waters is the bacteria objective in the Basin Plan, which states, "*In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*."

(b) RPA Results. MUN, AGR, and REC-1 are beneficial uses of Bloods Creek. Domestic wastewater contains pathogens that could impact these beneficial uses. Therefore, effluent discharged to Bloods Creek must be adequately disinfected.

(c) WQBELs. Pursuant to guidance from DPH, this Order includes effluent limitations for total coliform organisms of 23 MPN/100 mL as a 7-day median and 240 MPN/100 mL, not to be exceeded more than once in a 30-day period.

(d) Plant Performance and Attainability. Analysis of the effluent data indicates that compliance with these effluent limitations is feasible.

ix. pH

(a) WQO. The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the *"…pH shall not be depressed below 6.5 nor raised above 8.5*."

(b) RPA Results. The Discharger began accelerated monitoring during the 2010 discharge season to characterize the water quality of the storage/polishing pond for pH. The initial monitoring results for pH in the storage/polishing reservoir indicate high variability, ranging from

4.85 to 10.3. The Discharger attributes these fluctuations to the low alkalinity of the water in the reservoir due to rainfall, snowmelt, and I/I that allows for substantial increases in pH with comparatively little algae growth and photosynthesis, and the natural acidity of the geologic features in concert with depressed pH resulting from acidic precipitation. Receiving water monitoring during the 2010 discharge season indicated that the receiving water appears to have naturally low pH values, ranging between 5.18 and 7.0.

Although the effluent may exceed the Basin Plan's water quality objectives for pH, due to the large dilution it is likely that the discharge has little impact on the receiving water pH. However, without a specific study demonstrating that the discharge is not causing or contributing to an exceedance of the Basin Plan's water quality objectives for pH, a determination of reasonable potential must be made.

(c) WQBELs. Instantaneous minimum and maximum effluent limitations for pH of 6.5 and 8.5, respectively, are included in this Order based on the Basin Plan objectives for pH.

(d) Plant Performance and Attainability. Although some pH data from the storage/polishing pond exceed the effluent limits for pH, the Discharger can install facilities before the next discharge season to control pH sufficiently to comply with the limits.

x. Settleable Solids

(a) WQO. For inland surface waters, the Basin Plan states that "[w]*ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.*"

(b) RPA Results. The discharge of secondary treated wastewater has reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids. Therefore, effluent limitations for settleable solids are included in this Order.

(c) WQBELs. In accordance with Step 7 of SIP section 1.3, this Order contains an AMEL and MDEL for settleable solids that are based on best professional judgment to ensure that the treatment works operate in accordance with design capabilities. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

(d) Plant Performance and Attainability. The effluent limitations for settleable solids are retained from Order No. R5-2005-0139. Effluent

monitoring data for settleable solids is not available; however, compliance with the applicable effluent limitations is expected.

4. WQBEL Calculations

a. This Order includes WQBELs for aluminum, ammonia, chlorine residual, copper, iron, lead, manganese, settleable solids, and total coliform organisms. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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 and MCLs. For WQBELs based on site-specific numeric Basin Plan objectives or MCLs, the effluent limitations are applied directly as the ECA as either an MDEL, AMEL, or average annual effluent limitations, depending on the averaging period of the objective.

d. Aquatic Toxicity Criteria. 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.

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

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

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

$$\text{MDEL}_{\text{HH}} = \left(\frac{\text{mult}_{\text{MDEL}}}{\text{mult}_{\text{AMEL}}}\right)\text{AMEL}_{\text{HH}}$$

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 $LTA_{chronic}$

See Section IV.D of this Fact Sheet for a summary of WQBELs contained in this Order.

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. The Order also requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

b. 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-8.00). The Basin Plan also states that, *"…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*". USEPA 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.*"

The Discharger conducted one acute toxicity test in July 2009 that showed 100% survival. The July 2009 test occurred outside of the discharge season when the Discharger was not discharging to surface waters. Consistent with Order No. R5-

2005-0139, to ensure protection of aquatic life, 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%

c. **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-8.00). Two chronic toxicity tests were conducted during the term of Order No. R5-2005-0139 in June 2007 and July 2009. The June 2007 testing event did not indicate that the discharge was toxic. The July 2009 testing event did indicate impacts to *Ceriodaphnia dubia* reproduction. However, the July 2009 testing event may not be representative of potential discharge conditions, as it was conducted outside the discharge period of 1 January through 30 June, there was minimal flow in Bloods Creek, the influent sampler was used to collect samples, and the storage/polishing reservoir was experiencing an algae bloom that had to be filtered from the samples. Therefore, adequate chronic toxicity data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's toxicity objective.

Due to the infrequency of discharges to Bloods Creek, the Monitoring and Reporting Program of this Order revises chronic WET monitoring from annually to once during the term of this Order, for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a of the Order requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

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

[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).

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 CFR 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). Furthermore, the Special Provision contained at VI.C.2.a of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. 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 workplan. 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 Limitations

Table F-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	1.0	--	2.5	--	--	DC
Conventional Pollutants							
pH	Standard Units	--	--	--	6.5	8.5	BP
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	40	60	--	--	CFR
	lbs/day[2]	250	330	1,250	--	--	
	% Removal	85	--	--	--	--	CFR

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Total Suspended Solids	mg/L	30	40	60	--	--	CFR
	lbs/day[2]	250	330	1,250	--	--	
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
Copper, Total Recoverable	µg/L	0.56	--	1.1	--	--	CTR
Lead, Total Recoverable	µg/L	0.082	--	0.16	--	--	CTR
Non-Conventional Pollutants							
Aluminum, Total Recoverable	µg/L	71	--	143	--	--	NAWQC
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--	NAWQC
	lbs/day[2]	9.2	--	44	--	--	
Chlorine, Total Residual	mg/L	0.011[3]	--	0.019[4]	--	--	NAWQC
Iron, Total Recoverable	µg/L	300[5]	--	--	--	--	SEC MCL
Manganese, Total Recoverable	µg/L	50[3]	--	--	--	--	SEC MCL
Settleable Solids	ml/L	0.1	--	0.2	--	--	BP
Total Coliform Organisms	MPN/100 mL	--	23[6]	240[7]	--	--	Title 22

[1] DC – Based on the design capacity of the Facility.
BP – Based on water quality objectives contained in the Basin Plan.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
SEC MCL – Based on the Secondary Maximum Contaminant Level.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] Average monthly and average weekly effluent limitations are based on a flow of 1.0 MGD; maximum daily effluent limitations are based on a design flow of 2.5 MGD.

[3] Applied as a 4-day average effluent limitation.

[4] Applied as a 1-hour average effluent limitation.

[5] Applied as an annual average effluent limitation.

[6] Applied as a 7-day median effluent limitation.

[7] The total coliform organisms concentration shall not exceed 240 MPN/100 mL more than once in any 30-day period.

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 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 CFR 122.45(f)(1), 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 have been established in this Order for ammonia, BOD_5, and TSS because they are oxygen-demanding substances. Mass limits are based on 1.0 MGD for monthly and weekly average effluent limitations and 2.5 MGD for maximum daily effluent limitations. Average monthly and average weekly mass-based effluent limitations were calculated based upon the permitted average monthly effluent flow allowed in section IV.A.1.a of the Limitations and Discharge Requirements. Maximum daily mass-based effluent limitations were calculated based upon the permitted maximum daily effluent flow allowed in section IV.A.1.a of the Limitations and Discharge Requirements.

Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

40 CFR 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, USEPA recommends the use of a maximum daily effluent limitation in lieu of AWELs 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) This Order utilizes MDELs in lieu of AWELs for aluminum, ammonia, copper, and lead as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for chlorine residual, total coliform organisms, and pH, AWELs 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.

For effluent limitations for non-priority pollutants based on Primary and Secondary MCLs this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California

Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate AWELs and AMELs.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order, with the exceptions as described below.

The AMELs contained in Order No. R5-2005-0139 for iron and manganese have been revised to annual average effluent limitations consistent with input from DPH and the fact that MCLs are designed to protect human health over long exposure periods. Removal of the WQBELs in the previous permit is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the removal of WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of the WQBELs is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

Order No. R5-2005-0139 established final mass-based effluent limitations for chlorine residual, copper, iron, and manganese. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitations for chlorine residual, copper, iron, and manganese established in this Order are based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.45(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with Federal Regulations. In addition to concentration-based effluent limitations for these constituents, this Order includes a flow limitation. Compliance with the flow limit and concentration-based limits will ensure that significantly less mass of the pollutants is discharged to the receiving water. Therefore, removal of mass limitations will not result in an increase in mass loading to the receiving water. Discontinuing mass-based effluent limitations for these parameters is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant. Therefore, relaxation of effluent limitations is allowed under CWA section 303(d)(4).

Order No. R5-2005-0139 established limitations for BOD_5, TSS, settleable solids, total coliform organisms, and turbidity for discharges to the storage/polishing reservoir. Order No. R5-2005-0139 also required discharges to the storage/polishing reservoir to receive tertiary treatment and be oxidized, coagulated, filtered, and disinfected, or equivalent treatment provided. These requirements were adopted as

late revisions to Order No. R5-2005-0139 based on a 27 September 2005 comment letter from Joseph Spano of DHS on the revised Tentative Order that recommended tertiary treatment to protect waters reaching the south delta and San Joaquin River via its tributaries. 40 CFR 122.44(l)(2)(i)(B)(1) allows for backsliding from permit conditions where 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 less stringent permit requirements at the time of permit issuance. As described further in section IV.C.3.c.viii.(a) of this Fact Sheet, the Discharger submitted updated water balance projections to characterize potential discharges to Bloods Creek under various precipitation water year assumptions on 1 February 2011. Based on the updated information, DPH provided an updated recommendation to the Regional Water Board in a letter dated 1 March 2011 stating that they would forgo their tertiary treatment recommendation provided certain requirements are included in this Order. The specific requirements recommended by DPH have been included in this Order, as described further in section IV.C.3.c.ix of this Fact Sheet. In accordance with 40 CFR 122.44(l), this Order does not retain permit conditions for discharges to the storage/polishing reservoir based on the updated data and the updated recommendation from DPH. 40 CFR 122.44(l)(2)(ii) does not allow for backsliding that would result in a violation of a water quality standard. This Order retains secondary treatment-level effluent limitations for discharges to Bloods Creek. WDR Order No. 5-01-208 for land discharges also contains secondary treatment level effluent limitations for BOD_5, TSS, and total coliform organisms for discharges to the storage/polishing reservoir. The effluent limitations in this Order are protective of water quality and will not result in a violation of a water quality standard.

4. Satisfaction of Antidegradation Policy

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with 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 CFR 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.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, BOD_5, and TSS. The WQBELs consist of restrictions on aluminum, ammonia, chlorine residual, copper, iron, lead, manganese, settleable solids, and total coliform organisms. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 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.

E. Interim Effluent Limitations

1. **Compliance Schedule for Aluminum and Ammonia.** The permit limitations for aluminum and ammonia are more stringent than the limitations previously imposed. These new limitations are based on a new interpretation of the narrative objective for toxicity. The Discharger submitted a *Infeasibility Report for the Bear Valley Water District Wastewater Treatment Plant* (Infeasibility Report) on 28 April 2011 requesting compliance schedules for aluminum and ammonia. The Discharger's Infeasibility Report has complied with the application requirements in paragraph 4 of the State Water Board's Compliance Schedule Policy, and the Discharger's application demonstrates the need for additional time to implement actions to comply with the new limitations, as described below. Therefore, a compliance schedule for compliance with the effluent limitations for aluminum and ammonia is established in the Order.

   a. **Demonstration that the Discharger needs time to implement actions to comply with a more stringent permit limitation specified to implement a new, revised, or newly interpreted water quality objective or criterion in a water quality standard.** Table 1 of the Infeasibility Report identifies constituents with the potential to exceed effluent limitations in the proposed NPDES Permit based on monitoring data collected between January 2010 through June 2010, including aluminum and ammonia. A compliance schedule is necessary because the Discharger must implement actions, including collection of additional effluent and receiving sampling, designing and constructing treatment plant upgrades, diffuser installation, and/or mixing zone studies, if necessary, to comply with a more stringent permit limitation specified to implement a new, revised, or newly interpreted water quality objective or criterion in a water quality standard. Construction includes related activities such as the securing funding and purchase and installation of necessary equipment.

   b. **Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts.** Although no discharges to Bloods Creek occurred

during the term of Order No. R5-2005-0139, the Discharger has made substantial efforts to characterize pollutant concentrations in the storage/polishing reservoir during the 2010 and 2011 discharge seasons. The Infeasibility Report identified potential sources of aluminum as the water supply, the domestic wastewater, and sediments containing clay that enter the collection system via I/I. The Infeasibility Report identified the potential source of ammonia as the domestic wastewater.

c. **Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established.** Section 4 of the Infeasibility Report states that the Discharger has not conducted pollution prevention activities because the Facility service area contains primarily residential and commercial users. However, the Discharger states that the Discharger's ordinances include prohibitions against discharges to the sewer system that contain substances or have characteristics that would impact the Facility and set uniform requirements for discharges into the wastewater collection and treatment system.

d. **A proposed schedule for additional source control measures or waste treatment.** The Infeasibility Analysis indicated that achieving full compliance with aluminum and ammonia will require treatment plant modifications which would involve engineering design, and construction of the proposed improvements at the Facility. Table 3 of the Infeasibility Report provided a proposed compliance schedule for aluminum and ammonia, which includes intensive sampling of the storage/polishing reservoir and the receiving water by 1 August 2013; source control and pollutant minimization by 1 August 2013; and determination of preferred compliance measures (e.g., treatment plant upgrades, diffuser installation, and/or mixing zone studies) by 1 December 2013. If the sampling indicates that treatment plant upgrades or diffuser installation are necessary, the Discharger proposed to complete design by 1 August 2014; obtain bids, project funding, and award construction contract by 1 October 2014; construct improvements by 1 April 2016; complete start-up and performance testing by 1 July 2016; and obtain final compliance by 1 August 2016. If the sampling indicates that assimilative capacity is available and a mixing zone is necessary to achieve compliance, the Discharger proposed to submit a mixing zone study by 1 July 2016. If the sampling indicates that additional compliance measures are not necessary, final compliance is required by 1 December 2013.

e. **Data demonstrating current treatment facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim permit effluent limit to apply if a schedule of compliance is granted.** Table 5 of the Infeasibility Report proposed interim effluent limitations for aluminum and ammonia based on the observed MECs. However, the interim effluent limitations included in this Order were determined using the procedures described in section IV.E.2, below.

f. **The highest discharge quality that can reasonably be achieved until final compliance is attained.** Compliance with the interim effluent limitations will ensure that the Discharger maintains the discharge at existing levels.

g. The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs. The Discharger determined in the Infeasibility Report that the compliance schedules are as short as possible. The estimated durations for each task and estimated completion dates were included in Table 3 of the Infeasibility Report. An eight month design period is included in the compliance schedule which may be difficult to complete due to the time of year when survey and design work would need to be accomplished. A two month time period for obtaining bids, project funding, and award of construction contract is anticipated due to significantly lower costs associated with anticipated treatment plant modifications. A 19-month construction period is included in the compliance schedule due to the severely reduced construction time periods of summertime (3 or 4 months) and because the wastewater treatment plant upgrades must be constructed while the existing treatment facilities remain in service. Upon completion of construction, 3 months has been provided to start up, test, and optimize the treatment process, as well as perform a mixing zone study if necessary.

Interim performance-based limitations have been established in this Order. The interim limitations were determined as described in section IV.E.2, below, and are in effect until the final limitations take effect. In addition, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3). The interim numeric effluent limitations and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. **Interim Limitations for Interim Limits for Aluminum and Ammonia.** The Compliance Schedule Policy requires the Regional Water Board to establish interim requirements and dates for their achievement in the NPDES permit. Interim numeric effluent limitations are required for compliance schedules longer than 1 year. Interim effluent limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent.

The interim limitations for aluminum and ammonia in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than 10 sampling data points available, the EPA *Technical Support Document for Water Quality-based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained

in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5 2).

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved. The limited, short-term degradation associated with the compliance schedule is consistent with State and federal policies and is authorized by 40 CFR 122.47 and the Compliance Schedule Policy.

The following table summarizes the calculations of the interim effluent limitations for aluminum and ammonia:

Table F-13. Interim Effluent Limitation Calculation Summary

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation
Aluminum, Total Recoverable	µg/L	141	71	43	9	440
Ammonia Nitrogen, Total (as N)	mg/L	5.6	1.9	1.7	10	7.6

F. Land Discharge Specifications – Not Applicable

Land discharge specifications are set forth in WDR Order No. 5-01-208.

G. Reclamation Specifications – Not Applicable

Reclamation specifications are set forth in WDR Order No. 5-01-208.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and 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 requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the MCLs in Title 22, CCR. The tastes and odors objective states that

surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

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 bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

a. pH. Order No. R5-2005-0139 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan, and allowed a 1-month averaging period for calculating pH change. The Central Valley Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

In Finding No. 14 of Resolution No. R5-2007-0136 the Central Valley Water Board found that the change in the pH receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

Ammonia is the only constituent in the discharge regulated by this Order directly related to pH. The fixed ammonia effluent limitations in this Order are based on reasonable worse-case conditions. Although ammonia criteria are based on pH, and the pH receiving water limitations are more lenient in this Order than in the previous permit, the fixed ammonia limits are new limits, and are developed to

protect under worse case pH conditions. Therefore the relaxation of the pH receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the pH receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current USEPA recommended criteria and is fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in pH when pH is maintained within the range of 6.5 to 8.5 are neither beneficial nor adverse and, therefore, are not considered to be degradation in water quality. Attempting to restrict pH changes to 0.5 pH units would incur substantial costs without demonstrable benefits to beneficial uses. Thus, any changes in pH that would occur under the revised pH limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore the proposed amendment will not violate antidegradation policies.

b. **Turbidity.** Order No. R5-2005-0139 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution No. R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution No. R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not

expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

B. Groundwater – Not Applicable

Groundwater limitations are set forth in WDR Order No. 5-01-208.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the 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 flow (continuous), BOD_5 (once per week), and TSS (once per week) have been retained from Order No. R5-2005-0139. Influent monitoring requirements for pH, electrical conductivity, aluminum, copper, iron, fluoride, and manganese have not been retained from Order No. R5-2005-0139 as they are not necessary to determine compliance with permit requirements.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 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. In order to collect sufficient data to determine compliance with effluent limitations, effluent monitoring shall be conducted at Monitoring Location EFF-001 when the Facility is discharging to Bloods Creek. The Facility only discharges to Bloods Creek in emergency situations and thus limited monitoring data is available to characterize the effluent. Therefore, this Order requires periodic monitoring of the storage/polishing reservoir at Monitoring Location PND-001 to characterize the effluent. If a discharge to Bloods Creek occurs, monitoring at Monitoring Location PND-001 is not required for the remainder of the discharge season.

3. 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 Department of Public Health 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 remote 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.

4. As described in section IV.C.2.b of this Fact Sheet, monitoring data collected at the sample tap from the storage/polishing reservoir and the surface of the storage/polishing reservoir is inconsistent. The Discharger believes that the higher pollutant concentrations observed at the sample tap can be attributed to substrate growth in the effluent pipeline and the use of iron pipe. This contamination is not expected to be observed during an actual discharge event due to the large amount of effluent that would be discharged, compared to the small amount that enters the pipeline during sampling at the sample tap. Due to the possible contamination of effluent samples taken from the sample tap when effluent is not being discharged, the Discharger shall collect representative samples from the surface of the storage/polishing reservoir at Monitoring Location PND-001. However, the Discharger shall monitor the effluent from the storage/polishing reservoir at

Monitoring Location EFF-001, located at the sample tap, when discharging to Bloods Creek.

5. Effluent monitoring frequencies for Monitoring Location EFF-001 for flow (continuous), pH (continuous), BOD_5 (twice per week), TSS (twice per week), copper (once per month), aluminum (once per month), ammonia (twice per week), chlorine residual (continuous), electrical conductivity (twice per week), hardness (once per month), iron (once per month), manganese (once per month), settleable solids (twice per week), total coliform organisms (twice per week), and temperature (twice per week) have been retained from Order No. R5-2005-0139 to determine compliance with effluent limitations for these parameters. Due to the nature of the discharge from the storage/polishing reservoir, which provides significant detention time of the wastewater, this Order revises the sample type from 24-hour composite to grab for settleable solids, BOD_5, TSS, hardness, aluminum, copper, iron, and manganese.

6. Specific monitoring requirements for fluoride and standard minerals have not been retained from Order No. R5-2005-0139 because they are not necessary to determine compliance with effluent limitations.

7. Monitoring data collected over the term of Order No. R5-2005-0139 for lead indicates reasonable potential to exceed water quality criteria and effluent limitations have been established in this Order. Therefore, monthly effluent monitoring for lead at Monitoring Location EFF-001 has been established in this Order to determine compliance with effluent limitations.

8. This Order establishes monthly monitoring at Monitoring Location EFF-001 for nitrate nitrogen and nitrite nitrogen to monitor concentrations in the wastewater.

9. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2005-0139, and was used to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Consistent with Order No. R5-2005-0139, this Order requires priority pollutant monitoring at Monitoring Location EFF-001 once during the term of this Order during discharge to Bloods Creek in order to collect data to conduct an RPA for the next permit renewal. The Discharger shall monitor the surface of the storage/polishing reservoir at Monitoring Location PND-001 once during the permit term. However, if a discharge to Bloods Creek occurs during the permit term, monitoring at Monitoring Location PND-001 is not required. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

10. This Order requires monitoring at Monitoring Location PND-001 for BOD_5, pH, TSS, chlorine residual, electrical conductivity, settleable solids, total coliform organisms, hardness, and temperature twice per year (i.e., once during the month of May and once during the month of June. This Order also requires monitoring for copper, lead, aluminum, ammonia, iron, manganese, nitrate, and nitrite once per year (i.e., once during the month of May or June). If a discharge to Bloods Creek occurs, monitoring

at Monitoring Location PND-001 is not required for the remainder of the discharge season.

11. To ensure compliance with the discharge prohibition at section III.H of this Order, this Order requires the Discharger to estimate the volume of wastewater, measure the surface elevation, and measure the freeboard of the storage/polishing reservoir on a daily basis during discharge events and twice per month during months when discharges to Bloods Creek do not occur.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** 96-hour bioassay testing is required once per discharge season when discharging to Bloods Creek in order to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Chronic WET testing is required once during the term of this Order when a discharge to Bloods Creek occurs in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

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

b. Receiving water monitoring is only required when discharging to Bloods Creek except priority pollutants (see below).

c. Receiving water monitoring frequencies and sample types for fecal coliform organisms (quarterly), flow (continuous), pH (weekly), dissolved oxygen (weekly), electrical conductivity (weekly), hardness (monthly), temperature (weekly), and turbidity (weekly) have been retained from Order No. R5-2005-0139.

d. This Order discontinues annual receiving water monitoring for standard minerals, as it is no longer necessary to characterize the receiving water or determine compliance with receiving water limitations.

e. Consistent with the effluent monitoring requirements, monitoring for priority pollutants upstream of Discharge Point No. 001 at RSW-001 is required once during the term of this Order to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The hardness (as $CaCO_3$) of the upstream receiving water shall also be monitored concurrently with the priority pollutants as well as pH to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP. If a discharge to Bloods Creek occurs during the term of this Order, the Discharger shall monitor for priority pollutants and constituents of concern during the discharge,

concurrent with effluent monitoring at Monitoring Location EFF-001. If a discharge to Bloods Creek does not occur during the permit term, the Discharger shall monitor for priority pollutants and constituents of concern at least once during the permit term during conditions under which a discharge is most likely to occur (i.e., during snowmelt) in the month of May or June, concurrent with monitoring at Monitoring Location PND-001. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

Groundwater monitoring requirements are set forth in WDR Order No. 5-01-208.

E. Other Monitoring Requirements

1. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. This Order retains the monitoring frequencies and sample types for electrical conductivity from Order No. R5-2005-0139. This Order does not retain water supply monitoring for aluminum and standard minerals, as it is no longer necessary to determine compliance with effluent or receiving water limitations.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

40 CFR 122.41(a)(1) and (b) through (n) 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. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC 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 TRE. 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. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents, including aluminum, copper, and lead. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and lead. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

c. **Dilution/Mixing Zone Study.** Significant dilution may occur during and immediately following high rainfall and/or snowmelt events. This Order requires the Discharger to control the effluent discharge rate such that the effluent is diluted by at least 20:1 by Bloods Creek. Therefore, dilution credits for WQBELs in this Order may be appropriate. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, the Central Valley Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor. The Discharger shall submit a workplan for Central Valley Water Board approval prior to conducting the study which may include, but is not limited to, receiving water flow monitoring and methods for conducting the study.

d. **pH and Ammonia.** Reasonable potential for pH was determined based on excursions of the Basin Plan water quality objectives for pH in the storage/polishing pond. However, due to the large dilution in the receiving water, it is likely the discharge has little effect on the pH of the receiving water and may not need water quality-based effluent limitations. If the Discharger performs a study demonstrating there is no reasonable potential for the discharge to cause or contribute to an exceedance of the Basin Plan water quality objectives for pH in Bloods Creek, this reopener provision allows the permit to be opened to modify or remove the effluent limits for pH. In addition, the Discharger requested a lower instantaneous maximum pH effluent limit in order to have a less stringent ammonia effluent limits. If the Discharger provides sufficient information demonstrating the Facility can comply with the lower instantaneous maximum pH effluent limit, this reopener provision allows the permit to be opened to modify the effluent limits 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-8.00). Adequate data is not available to determine if the discharge has 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, this provision requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. 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 toxicity is repeatedly or periodically present before requiring the implementation of a TRE.

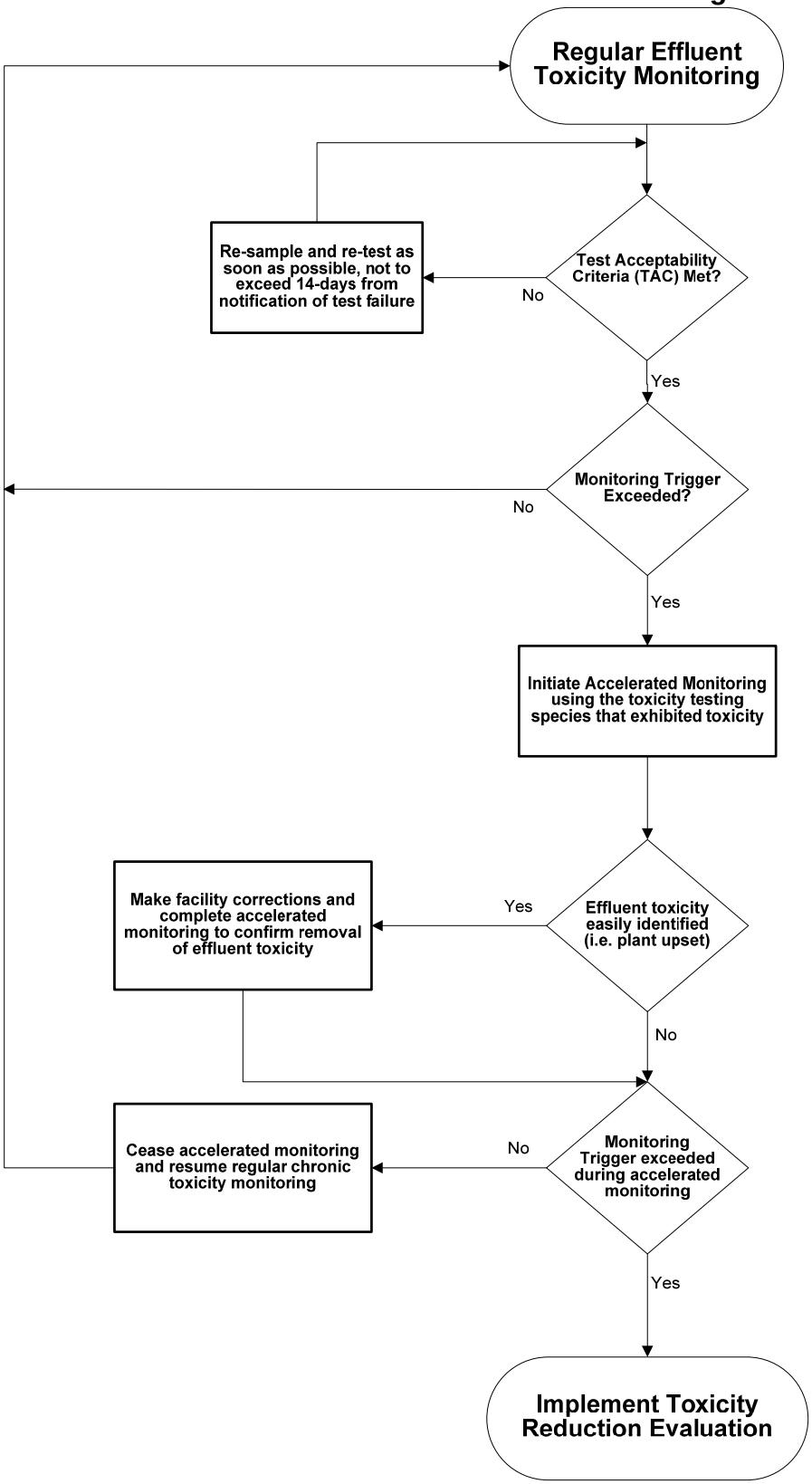
The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete. 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 USEPA 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. **Dechlorination Study.** As described in section IV.C.3.c.iii.(d), due to the long detention time of wastewater in the reservoir and the conditions under which a discharge to surface water is likely to occur (i.e., during snowmelt when at least 20:1 dilution is available), the storage/polishing reservoir may provide natural dechlorination. However, due to the lack of monitoring data, it is uncertain if discharges from the storage/polishing reservoir can comply with the effluent limitations for chlorine residual. Therefore, this requires the Discharger to conduct a study to demonstrate that the Facility can comply with effluent limitations for chlorine residual, and submit the results of the study after the first discharge season following permit adoption. If the results of the study indicate that additional facilities are necessary to achieve compliance with effluent limitations for chlorine residual, the Discharger shall install the necessary facilities prior to the following discharge season to ensure compliance with effluent limitations for chlorine residual.

c. **USFS Request Letter.** The Discharger currently leases land from USFS for land disposal of wastewater. In order to ensure that the Discharger maintains the existing land disposal area, the Discharger shall request from USFS continued use of leased land beyond the existing lease periods prior to expiration of those leases. The Discharger shall provide a copy of the letter to the Central Valley Water Board.

d. **Land Disposal Alternatives Evaluation.** During some wet years, the Discharger has entered the winter season with a substantial amount of water still in its storage reservoir from the previous winter, which has resulted in unauthorized emergency discharges from the storage/polishing reservoir to Bloods Creek at the end of the snowmelt seasons in the late 1990's, with the most recent discharge occurring in 1999. The Discharger stated in the April 2010 ROWD that disposal capacity is the limiting factor for increased flows at the Facility. Consistent with DPH's recommendations in their 1 March 2011 letter to the Regional Water Board, this Order requires the Discharger to prepare and submit an evaluation that identifies additional alternatives to increase land disposal capacity to mitigate the need to discharge to Bloods Creek.

3. **Best Management Practices and Pollution Prevention**

a. **Pollutant Minimization Program (PMP).** This Order requires the Discharger to develop and conduct a PMP, consistent with section 2.4.5 of the SIP when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

b. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Bloods Creek.

c. **CWC section 13263.3(d)(3) Pollution Prevention Plans.** A pollution prevention plan for aluminum and ammonia is required in this Order per CWC section

13263.3(d)(1)(C). The pollution prevention plans required in section VI.C.7.a of this Order, shall, at a minimum, meet the requirements outlined in CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

4. Construction, Operation, and Maintenance Specifications

a. Influent Flow. On 1 February 2011, the Discharger submitted updated water balance projections to characterize potential discharges to Bloods Creek under various precipitation water year assumptions. Based on an influent flow limitation of 100,000 gpd contained in WDR Order No. 5-01-208, the Discharger provided water balances to determine the climatic conditions that would result in a discharge to Bloods Creek. Based on the water balances, DPH recommended that tertiary treatment is not necessary for discharges to Bloods Creek provided

that certain permit requirements are met, including implementation of an I/I program, as the Discharger has attributed the necessity for discharges from the storage/polishing reservoir to excessive I/I. To ensure that actual conditions in the storage/polishing reservoir that result in discharge to Bloods Creek are similar to those used in the water balance projections upon which DPH's recommendation is based, and to ensure that the Discharger adequately addresses I/I, this Order requires that the annual average daily influent flow not exceed 100,000 gpd.

b. **Maximization of Land Application.** The Discharger has attributed the necessity for discharges from the storage/polishing reservoir to lack of adequate storage capacity, excessive I/I, consecutive wet years, and heavy snowmelt. Therefore, this Order requires the Discharger to maximize land application of the effluent to ensure that the Discharger mitigates the need to discharge to Bloods Creek and ensure that discharges to Bloods Creek occur only when necessary. To demonstrate that land disposal has been maximized, Order No. R5-2005-0139 required the Discharger to submit a Notice of Intent to discharge by 15 June of each year prior to the expected discharge year. Because efforts to maximize land application should occur every year, and because weather patterns are largely unpredictable, this Order requires the Discharger to submit an annual report documenting maximization of land application regardless of anticipation of a discharge being necessary during the following discharge season. The annual report shall include an estimate of the amount of carryover of wastewater in the storage/polishing reservoir beyond 1 October and the reasons the carryover is necessary, the number of acres utilized for wastewater irrigation during the summer irrigation period, the amount of wastewater disposal utilizing controls and pumps, and a detailed description of efforts taken to implement conservation measures and I/I corrective action measures.

5. **Special Provisions for Municipal Facilities (POTWs Only)**

a. **Pretreatment Requirements.** Consistent with Order No. R5-2005-0139, this Order requires the Discharger to implement the necessary legal authorities, programs, and controls to ensure that incompatible wastes are not introduced into the treatment system and to ensure that indirect discharges do not introduce pollutants into the sewerage system.

b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 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. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the Facility were required to obtain enrollment for regulation under the General Order by 1 December 2006.

c. **Continuous Monitoring Systems.** This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is not staffed 24 hours a day. Permit violations or system upsets can go undetected during the time when there is no staff on-site. The Discharger has a system in place to automatically contact Facility operators in the event of alarms generated at the wastewater treatment plant. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future Facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions

a. **Notification of Discharge.** In a letter dated 1 March 2011, DPH recommended that tertiary treatment is not necessary for discharges to Bloods Creek provided that certain permit requirements are met, including notification to DPH whenever a discharge is planned. Therefore, this Order requires the Discharger to notify the Regional Water Board, the Stockton East Water District, and DPH by telephone prior to initiating a discharge to Bloods Creek.

7. Compliance Schedules

The Discharger submitted a request, and justification (dated 28 April 2011), for a compliance schedule for aluminum and ammonia. The compliance schedule justification included all items specified in paragraph 4 of the Compliance Schedule Policy, as discussed in section IV.E of this Fact Sheet. This Order establishes a compliance schedule for the new, final, WQBELs for aluminum and ammonia and requires full compliance by 1 December 2013 or 1 August 2016, depending on if treatment plant upgrades, diffuser installation, and/or mixing zone studies are necessary.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs 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 WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Central Valley Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **24 June 2011**.

C. Public Hearing

The Central Valley Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**3/4/5 August 2011**
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 are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the 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 David Kirn at (916) 464-4761 or at dwkirn@waterboards.ca.gov.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	141	100	87	750[1]	87[2]	--	--	--	200	Yes
Ammonia Nitrogen, Total (as N)	mg/L	5.6	0.67	2.14	2.14[1]	6.84[3]	--	--	--	--	Yes
Arsenic, Total Recoverable	µg/L	0.38	<0.1	10	340	150	--	--	--	10	No
Barium, Total Recoverable	µg/L	10[4]	9.9[4]	1,000	--	--	--	--	--	1,000	No
Boron, Total Recoverable	µg/L	60	<1.6	700[5]	--	--	--	--	--	--	No
Chloride	mg/L	18	8.6	106[5]	--	--	--	--	--	250	No
Chloroform	µg/L	2.2	<0.17	80	--	--	--	--	--	80	No
Copper, Total Recoverable	µg/L	5.6	<0.1	0.95[6]/1.3[7]	1.1[6]/1.6[7]	0.95[6]/1.3[7]	1,300	--	--	1,000	Yes
Chromium, Total	µg/L	0.33[4]	0.34[4]	50	--	--	--	--	--	50	No
Electrical Conductivity @ 25°C	µmhos/cm	144	251	700[5]	--	--	--	--	--	900	No
Fluoride, Total	µg/L	56[4]	56[4]	2,000	--	--	--	--	--	2,000	No
Iron, Total Recoverable	µg/L	245[4]	2,509[4]	300	--	--	--	--	--	300	Yes
Iron, Dissolved	µg/L	340	18,000	--	--	--	--	--	--	--	No
Lead, Total Recoverable	µg/L	0.1	<0.1	0.10[6]/0.17[7]	2.6[6]/4.4[7]	0.10[6]/0.17[7]	--	--	--	15	Yes
Manganese, Total Recoverable	µg/L	48[4]	552[4]	50	--	--	--	--	--	50	Yes
Manganese, Dissolved	µg/L	101	4,270	--	--	--	--	--	--	--	No
Mercury, Total Recoverable	µg/L	0.0013	0.00095	0.050	--	--	0.050	0.051	--	2.0	No
Nickel, Total Recoverable	µg/L	0.42	0.12	5.4[6]/7.4[7]	49[6]/67[7]	5.4[6]/7.4[7]	610	4,600	--	100	No
Nitrate Nitrogen, Total (as N)	mg/L	3.2	0.097	10	--	--	--	--	--	10	No
Toluene	µg/L	0.28	<0.22	150	--	--	6,800	200,000	--	150	No

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Total Dissolved Solids	mg/L	378	142	450[5]	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	5.9	3.2	12[6]/17[7]	12[6]/17[7]	12[6]/17[7]	--	--	--	5,000	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)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (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
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day Average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(4) Represents the maximum observed annual average concentration for comparison with the MCL.
(5) Water Quality for Agriculture.
(6) Criterion to be compared to the maximum effluent concentration.
(7) Criterion to be compared to the maximum upstream receiving water concentration.

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			HH Calculations[1]			Aquatic Life Calculations											Final Effluent Limitations	
		HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MMDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA_{acute}	ECA $Multiplier_{acute}$	LTA_{acute}	$ECA_{chronic}$	ECA $Multiplier_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multiplier_{95}$	$AMEL_{AL}$	MDEL $Multiplier_{99}$	$MDEL_{AL}$	Lowest AMEL	Lowest MDEL
Aluminum, Total Recoverable	µg/L	200	750	87	200	2.01	402	750	0.32	240	87	0.53	46	46	1.56	71.2	3.13	143	71	143
Ammonia Nitrogen, Total (as N)	mg/L	--	2.14	3.43	--	--	--	2.14	0.32	0.69	3.43	0.78	2.68	0.69	1.55	1.1	3.11	2.1	1.1	2.1
Copper, Total Recoverable	µg/L	200	1.1[2]/1.6[3]	0.95[2]/1.3[3]	200	2.01	401	1.1[4]	0.32	0.36	0.95[4]	0.53	0.50	0.36	1.55	0.56	3.11	1.1	0.56	1.1
Lead, Total Recoverable	µg/L	15	2.6[2]/4.4[3]	0.10[2]/0.17[3]	15	2.01	30	2.6[4]	0.32	0.87	0.10[4]	0.53	0.05	0.05	1.55	0.08	3.11	0.16	0.082	0.16

1 As described in section IV.C.2.d of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.
2 Criterion to be compared to the maximum effluent concentration.
3 Criterion to be compared to the maximum receiving water concentration.
4 ECA determined as described in section IV.C.2.c.i of the Fact Sheet (Attachment F).

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

I. Background. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Central Valley Water Board is requiring the following monitoring:

A. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. Effluent and receiving water temperature. This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

C. Effluent and receiving water hardness and pH. These are necessary because several of the CTR constituents are hardness and pH dependent.

II. Monitoring Requirements.

A. Monitoring Frequency. Priority pollutant samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) once during the term of the permit during discharge to Bloods Creek and analyzed for the constituents listed in Table I-1. If no discharge to Bloods Creek occurs during the permit term, priority pollutant samples shall be taken at Monitoring Location PND 001 and RSW-001 during conditions under which a discharge is most likely to occur (i.e., during snowmelt) in May or June. The results of such monitoring shall be submitted to the Central Valley Water Board. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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

C. Sample type. All effluent samples shall be taken as 24-hour flow proportioned composite samples. All receiving water samples shall be taken as grab samples.

Table I-1. Priority Pollutants

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
VOLATILE ORGANICS				
28	1,1-Dichloroethane	75343	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	0.5	EPA 8260B
17	Acrolein	107028	2	EPA 8260B
18	Acrylonitrile	107131	2	EPA 8260B
19	Benzene	71432	0.5	EPA 8260B
20	Bromoform	75252	0.5	EPA 8260B
34	Bromomethane	74839	1	EPA 8260B
21	Carbon tetrachloride	56235	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	0.5	EPA 8260B
24	Chloroethane	75003	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	1	EPA 8260B
26	Chloroform	67663	0.5	EPA 8260B
35	Chloromethane	74873	0.5	EPA 8260B
23	Dibromochloromethane	124481	0.5	EPA 8260B
27	Dichlorobromomethane	75274	0.5	EPA 8260B
36	Dichloromethane	75092	0.5	EPA 8260B
33	Ethylbenzene	100414	0.5	EPA 8260B
88	Hexachlorobenzene	118741	1	EPA 8260B
89	Hexachlorobutadiene	87683	1	EPA 8260B
91	Hexachloroethane	67721	1	EPA 8260B
94	Naphthalene	91203	10	EPA 8260B
38	Tetrachloroethene	127184	0.5	EPA 8260B

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
39	Toluene	108883	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	0.5	EPA 8260B
43	Trichloroethene	79016	0.5	EPA 8260B
44	Vinyl chloride	75014	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	0.5	EPA 8260B
	Trichlorofluoromethane	75694	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	10	EPA 8260B
	Styrene	100425	0.5	EPA 8260B
	Xylenes	1330207	0.5	EPA 8260B
SEMI-VOLATILE ORGANICS				
60	1,2-Benzanthracene	56553	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	1	EPA 8270C
45	2-Chlorophenol	95578	2	EPA 8270C
46	2,4-Dichlorophenol	120832	1	EPA 8270C
47	2,4-Dimethylphenol	105679	2	EPA 8270C
49	2,4-Dinitrophenol	51285	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	5	EPA 8270C
50	2-Nitrophenol	25154557	10	EPA 8270C
71	2-Chloronaphthalene	91587	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	10	EPA 8270C
51	4-Nitrophenol	100027	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	5	EPA 8270C
56	Acenaphthene	83329	1	EPA 8270C
57	Acenaphthylene	208968	10	EPA 8270C
58	Anthracene	120127	10	EPA 8270C
59	Benzidine	92875	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	5	EPA 8270C
64	Benzo(k)fluoranthene	207089	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	5	EPA 8270C

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
66	Bis(2-chloroethyl) ether	111444	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	3	EPA 8270C
70	Butyl benzyl phthalate	85687	10	EPA 8270C
73	Chrysene	218019	5	EPA 8270C
81	Di-n-butylphthalate	84742	10	EPA 8270C
84	Di-n-octylphthalate	117840	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	0.1	EPA 8270C
79	Diethyl phthalate	84662	2	EPA 8270C
80	Dimethyl phthalate	131113	2	EPA 8270C
86	Fluoranthene	206440	10	EPA 8270C
87	Fluorene	86737	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	EPA 8270C
93	Isophorone	78591	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	5	EPA 8270C
95	Nitrobenzene	98953	10	EPA 8270C
53	Pentachlorophenol	87865	0.2	EPA 8270C
99	Phenanthrene	85018	5	EPA 8270C
54	Phenol	108952	1	EPA 8270C
100	Pyrene	129000	10	EPA 8270C
INORGANICS				
	Aluminum	7429905	50	EPA 6020/200.8
1	Antimony	7440360	5	EPA 6020/200.8
2	Arsenic	7440382	0.01	EPA 1632
15	Asbestos	1332214	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	100	EPA 6020/200.8
3	Beryllium	7440417	1	EPA 6020/200.8
4	Cadmium	7440439	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	0.5	EPA 7199/1636
6	Copper	7440508	0.5	EPA 6020/200.8
14	Cyanide	57125	5	EPA 9012A
	Fluoride	7782414	0.1	EPA 300

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
	Iron	7439896	100	EPA 6020/200.8
7	Lead	7439921	0.5	EPA 1638
8	Mercury	7439976	0.0002 (11)	EPA 1669/1631
	Manganese	7439965	20	EPA 6020/200.8
9	Nickel	7440020	5	EPA 6020/200.8
10	Selenium	7782492	5	EPA 6020/200.8
11	Silver	7440224	1	EPA 6020/200.8
12	Thallium	7440280	1	EPA 6020/200.8
	Tributyltin	688733	0.002	EV-024/025
13	Zinc	7440666	10	EPA 6020/200.8
PESTICIDES - PCBs				
110	4,4'-DDD	72548	0.02	EPA 8081A
109	4,4'-DDE	72559	0.01	EPA 8081A
108	4,4'-DDT	50293	0.01	EPA 8081A
112	alpha-Endosulfan	959988	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	EPA 8081A
	Alachlor	15972608	1	EPA 8081A
102	Aldrin	309002	0.005	EPA 8081A
113	beta-Endosulfan	33213659	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	0.005	EPA 8081A
107	Chlordane	57749	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	0.005	EPA 8081A
111	Dieldrin	60571	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	0.05	EPA 8081A
115	Endrin	72208	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	0.01	EPA 8081A
117	Heptachlor	76448	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.019	EPA 8081A
119	PCB-1016	12674112	0.5	EPA 8082
120	PCB-1221	11104282	0.5	EPA 8082
121	PCB-1232	11141165	0.5	EPA 8082
122	PCB-1242	53469219	0.5	EPA 8082
123	PCB-1248	12672296	0.5	EPA 8082
124	PCB-1254	11097691	0.5	EPA 8082
125	PCB-1260	11096825	0.5	EPA 8082

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
126	Toxaphene	8001352	0.5	EPA 8081A
	Atrazine	1912249	1	EPA 8141A
	Bentazon	25057890	2	EPA 643/ 515.2
	Carbofuran	1563662	5	EPA 8318
	2,4-D	94757	10	EPA 8151A
	Dalapon	75990	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	5	EPA 8270C
	Dinoseb	88857	2	EPA 8151A
	Diquat	85007	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	45	EPA 548.1
	Ethylene Dibromide	106934	0.02	EPA 8260B/504
	Glyphosate	1071836	25	HPLC/EPA 547
	Methoxychlor	72435	10	EPA 8081A
	Molinate (Ordram)	2212671	2	EPA 634
	Oxamyl	23135220	20	EPA 8318/632
	Picloram	1918021	1	EPA 8151A
	Simazine (Princep)	122349	1	EPA 8141A
	Thiobencarb	28249776	1	HPLC/EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	1	EPA 8151A
	Diazinon	333415	0.25	EPA 8141A/GCMS
	Chlorpyrifos	2921882	1	EPA 8141A/GCMS
OTHER CONSTITUENTS				
	Ammonia (as N)	7664417		EPA 350.1
	Chloride	16887006		EPA 300.0
	Flow			
	Hardness (as $CaCO_3$)			EPA 130.2
	Foaming Agents (MBAS)			SM5540C
	Nitrate (as N)	14797558	2,000	EPA 300.0
	Nitrite (as N)	14797650	400	EPA 300.0
	pH		0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140		EPA 365.3
	Specific conductance (EC)			EPA 120.1
	Sulfate		500	EPA 300.0

CTR #	Constituent	CAS Number	Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
	Sulfide (as S)			EPA 376.2
	Sulfite (as SO_3)			SM4500-SO3
	Temperature			
	Total Disolved Solids (TDS)			EPA 160.1

FOOTNOTES:
(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers
(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22°C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.
(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.
(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:
Method 1669: Sampling Ambient Water for Trace Metals at USEPA Water Quality Criteria Levels, USEPA; and
Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluoresence, USEPA

III. Additional Study Requirements

A. Laboratory Requirements. The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code 13176 and must include quality assurance/quality control data with their reports (ELAP certified). In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided the laboratory institutes a Quality Assurance-Quality Control Program. A manual containing the steps followed in this program must be kept in the laboratory and must be available for inspection by Central Valley Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

B. Criterion Quantitation Limit (CQL). The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the SIP or the detection limits for purposes of reporting (DLRs) below the controlling water quality criterion concentrations

summarized in Table I-1 of this Order. In cases where the controlling water quality criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Table I-1 contains suggested analytical procedures. The Discharger is not required to use these specific procedures as long as the procedure selected achieves the desired minimum detection level.

C. **Method Detection Limit (MDL**). The method detection limit for the laboratory shall be determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

D. **Reporting Limit (RL).** The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

E. **Reporting Protocols.** The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

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

2. Sample results less than the reported 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.

3. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may shortened to "Est. Conc.). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (+ or – a percentage of the reported value), numerical ranges (low and high), or any other means considered appropriate by the laboratory.

4. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

F. **Data Format.** The monitoring report shall contain the following information for each pollutant:

1. The name of the constituent.

2. Sampling location.

3. The date the sample was collected.

4. The time the sample was collected.

5. The date the sample was analyzed. For organic analyses, the extraction data will also be indicated to assure that hold times are not exceeded for prepared samples.

6. The analytical method utilized.

7. The measured or estimated concentration.

8. The required Criterion Quantitation Limit (CQL).

9. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

10. The laboratory's lowest reporting limit (RL).

11. Any additional comments.