

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

364 Knollcrest Drive, Suite 205, Redding, California 96002
Phone (530) 224-4845 • Fax (530) 224-4857
<http://www.waterboards.ca.gov/centralvalley>

ORDER R5-2014-XXXX

NPDES NO. CA0078921

**WASTE DISCHARGE REQUIREMENTS FOR THE
CITY OF ALTURAS
ALTURAS WASTEWATER TREATMENT PLANT
MODOC COUNTY**

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

Table 1. Discharger Information

Discharger	City of Alturas
Name of Facility	City of Alturas Wastewater Treatment Plant
Facility Address	20099 County Road 54
	Alturas, CA 96101
	Modoc County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated Municipal Wastewater	41° 28' 35.23" N	120° 32' 27.56" W	Pit River

Table 3. Administrative Information

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

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

PAMELA C. CREEDON, Executive Officer

CONTENTS

I. Facility INFORMATION.....3
 II. FINDINGS.....3
 III. Discharge Prohibitions.....8
 IV. Effluent Limitations and Discharge Specifications8
 A. Effluent Limitations – Discharge Point No. 0018
 1. Final Effluent Limitations – Discharge Point No. 0018
 2. Interim Effluent Limitations10
 B. Land Discharge Specifications – Not Applicable10
 C. Recycling Specifications – Not Applicable.....11
 V. Receiving Water Limitations11
 A. Surface Water Limitations.....11
 B. Groundwater Limitations – Not Applicable.....13
 VI. Provisions13
 A. Standard Provisions.....13
 B. Monitoring and Reporting Program (MRP) Requirements.....16
 C. Special Provisions16
 1. Reopener Provisions16
 2. Special Studies, Technical Reports and Additional Monitoring Requirements.....17
 3. Best Management Practices and Pollution Prevention19
 4. Construction, Operation and Maintenance Specifications.....20
 5. Special Provisions for Municipal Facilities (POTWs Only)20
 6. Other Special Provisions – Not Applicable.....22
 7. Compliance Schedules.....22
 VII. Compliance Determination.....22

TABLES

Table 1. Discharger Information.....1
 Table 2. Discharge Location1
 Table 3. Administrative Information1
 Table 4. Basin Plan Beneficial Uses5
 Table 5. Effluent Limitations.....9
 Table 6. Interim Effluent Limitations.....10

ATTACHMENTS

Attachment A – Definitions.....A-1
 Attachment B – MapB-1
 Attachment C – Flow Schematic.....C-1
 Attachment D – Standard ProvisionsD-1
 Attachment E – Monitoring and Reporting ProgramE-1
 Attachment F – Fact SheetF-1
 Attachment G – Summary of Reasonable Potential Analysis for Constituents of ConcernG-1
 Attachment H – Calculation of WQBELs.....H-1

I. FACILITY INFORMATION

Information describing the City of Alturas Wastewater Treatment Plant (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.
- B. Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G and H are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections **IV.B, IV.C, and V.B** are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Notification of Interested Parties.** The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.
- E. 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.
- F. Background.** The City of Alturas (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2006-0103 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0078921. The Discharger submitted a Report of Waste Discharge, dated 23 June 2011, and applied for a NPDES permit renewal to discharge up to 0.5 mgd of treated wastewater from the Alturas Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on 21 July 2011.

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.

- G. Facility Description.** The Discharger owns and operates a POTW which provides wastewater collection, treatment, and disposal services to the City of Alturas. The treatment system consists of an inlet screen, grit removal, a grinder, primary clarifier, trickling filter, two secondary clarifiers, chlorine contact basin, and dechlorination station. Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to the Pit River, a water of the United States, one quarter mile downstream of the confluence of the North and South

Forks within the Upper Pit River watershed. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- H. **California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- I. **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.
- J. **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. This Order contains requirements, expressed as technology equivalence requirements, which are necessary to achieve water quality standards. The Central Valley Water Board has considered the factors listed in Water Code section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

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).

- K. **Water Quality Control Plans.** The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2011)*, 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. 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. Beneficial uses applicable to the Pit River from the confluence of the North and South Forks to Hat Creek are as follows:

Table 4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pit River (Confluence of Forks to Hat Creek)	<u>Existing:</u> 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); Spawning, reproduction, and/or early development, warm and cold (SPWN); 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." The Pit River from the confluence of the North and South Forks to Shasta Lake is listed as a WQLS for nutrients, organic enrichment/low dissolved oxygen, and temperature in the 2010 303(d) list of impaired water bodies.

Requirements of this Order implement the Basin Plan.

- L. 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.
- M. 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.
- N. 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 ten 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. A Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional 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 one 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 includes compliance schedules and interim effluent limitations. A detailed discussion of the basis for the compliance schedules and interim effluent limitations is included in the Fact Sheet.

- O. 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.
- P. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. Technology-based effluent limitations consist of restrictions on flow, 5-day biochemical oxygen demand (BOD₅; for discharges receiving greater than 20:1 dilution), and total suspended solids (TSS; for discharges receiving greater than 20:1 dilution). WQBELs consist of restrictions on aluminum, BOD₅ (for discharges receiving less than 20:1 dilution), chlorine residual, copper, electrical conductivity, pH, total coliform organisms, TSS (for discharges receiving less than 20:1 dilution), and zinc. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes new effluent limitations for BOD₅, total coliform organisms, and TSS for discharges receiving less than 20:1 dilution to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in the Fact Sheet. In addition, the Central Valley Water Board has considered the factors in Water Code section 13241 in establishing these 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.

- Q. 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.
- R. 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 than those in Order No. R5-2006-0103. 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.
- S. 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.
- T. Monitoring and Reporting.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

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

person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

- U. 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.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2006-0103 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet, in a manner different from that described in this Order is prohibited.
- B.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- D.** The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal, system in amounts that significantly diminish the system’s capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

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, Attachment E:

Table 5. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) - <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--
	lbs/day ¹	42	63	83		
Biochemical Oxygen Demand (5-day @ 20°C) - <i>Applicable when >20:1 dilution is available</i>	mg/L	30	45	60		
	lbs/day ¹	125	187	250		
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids - <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--
	lbs/day ¹	42	63	83		
Total Suspended Solids - <i>Applicable when >20:1 dilution is available</i>	mg/L	30	45	60		
	lbs/day ¹	125	187	250		
Total Coliform Organisms - <i>Applicable when <20:1 dilution is available</i>	MPN/100 mL	--	2.2 ²	23 ³	--	240
Total Coliform Organisms - <i>Applicable when >20:1 dilution is available</i>	MPN/100 mL	--	23 ²	240 ³	--	--
Aluminum, Total Recoverable	µg/L	374	--	750	--	--
Copper, Total Recoverable	µg/L	3.7	--	7.6	--	--
Zinc, Total Recoverable	µg/L	13	--	21	--	--

¹ Mass-based effluent limitations are based on a permitted average dry weather flow of 0.5 mgd.

² Applied as a 7-day median effluent limitation.

³ Total coliform organisms shall not exceed more than once in any 30-day period.

b. **Percent Removal:** The average monthly percent removal of BOD 5-day 20°C (BOD₅) and total suspended solids (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. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.
- f. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 0.5 mgd.
- g. **Total Dissolved Solids.** The annual average total dissolved solids shall not exceed 500 mg/L nor 1,500 mg/L as a daily maximum.
- h. **Aluminum.** The annual average total recoverable aluminum concentration shall not exceed 200 µg/L.

2. Interim Effluent Limitations

- a. During the period beginning on **<Permit Effective Date>** and ending **5 years from the effective date of this Order**, 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 attached MRP. 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 6. Interim Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Annual	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand (5-day @ 20°C) – <i>Applicable when <20:1 dilution is available</i>	mg/L	--	30	45	60
	lbs/day ¹	--	125	187	250
Total Suspended Solids – <i>Applicable when <20:1 dilution is available</i>	mg/L	--	30	45	60
	lbs/day ¹	--	125	187	250
Aluminum, Total Recoverable	µg/L	479	2,730	--	3,980
Total Dissolved Solids (TDS)	mg/L	--	604	--	1500

¹ Mass-based effluent limitations are based on a permitted average dry weather flow of 0.5 mgd.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Pit River:

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; [for water bodies in the Sac/SJ Basins]
- 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 (MCLs) specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

11. 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.

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

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

14. 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.

15. 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.

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

17. Turbidity.

- a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
- b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;
- c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

- d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
- e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
 - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.
 - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - i. violation of any term or condition contained in this Order;
 - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
 - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
 - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *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 the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

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

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

- I. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
- m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.
- n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).
- o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

- q. 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.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including, but not limited to:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a numeric chronic toxicity limitation, 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 CTR criteria for applicable priority pollutant inorganic constituents. 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 zinc. 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. **Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.
- f. **Site-specific Ammonia Criteria Study.** If, after review of the Study results, it is determined that the ammonia in the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective, this Order may be reopened and effluent limitations added for 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 MRP section V. Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation

(TRE) in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

- i. **Initial Investigative TRE Work Plan.** Within 90 days of the effective date of this Order, the Discharger shall submit to the Central Valley Water Board an Initial Investigative TRE Work Plan 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, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.
- iii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$). 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.
- 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 chronic toxicity tests conducted once every two weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:
 - (a) If the results of four consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
 - (b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and

shall continue accelerated monitoring until four consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

- (c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:
 - (1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - (2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - (3) A schedule for these actions.
- b. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives: aldrin, arsenic, bis(2-ethylhexyl) phthalate, carbon tetrachloride, dichlorobromomethane, and mercury. The Discharger shall conduct a study to evaluate the source of these constituents and conduct monitoring for these constituents quarterly for 3 years as outlined in Attachment E. A study report, evaluating sources and the results of the monitoring, must be submitted within 6 months following completion of the final monitoring event during the fourth year of the permit term.
- c. **Site-specific Ammonia Criteria Study.** The Discharger shall perform a study to determine applicable ammonia criteria to protect the beneficial uses of the receiving water, as discussed in the Fact Sheet section VII.B.2. The study shall consider seasonal variation of receiving water conditions that may affect criteria (e.g., pH, temperature) and effluent and receiving water mixing dynamics. A workplan for the study must be submitted for Executive Officer approval **within 9 months** of the effective date of this Order. A report on the findings of the study shall be submitted by 180 days prior to the permit expiration date

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

- d. **Pollution Prevention Plan for Aluminum and TDS.** The Discharger shall prepare and implement a pollution prevention plan for aluminum in accordance with Water Code section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet (Attachment F section VII.B.7. A workplan and time schedule for preparation of the pollution prevention plan shall be completed and submitted within **3 months of the effective date of this Order** for approval by the Executive Officer. The pollution prevention plan shall be completed and submitted to the Central Valley Water Board within **one year of the effective date of this Order**. Progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E section X.D.1.)

- e. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare 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. **Turbidity.** Effluent turbidity shall not exceed any of the following:
 - i. 2 NTU, as a daily average;
 - ii. 5 NTU, more than 5% of the time within a 24-hour period;
 - iii. 10 NTU, at any time.

The Discharger is not able to immediately comply with this specification as discussed in section VI.C.7. In order to give the Discharger time to comply with this specification, this operational specification will not be applicable until five years after the effective date of this Order.

Effective immediately and ending **5 years from the effective date of this Order**, effluent turbidity shall not exceed 5 NTU as a monthly median when available receiving water dilution is less than 20:1 and the discharge date is between 15 June and 15 November. This interim specification is consistent with the turbidity limitation contained in the previous Order 2006-0103.

- b. Wastewater shall be oxidized, coagulated, filtered, and disinfected pursuant to the Department of Public Health (DPH) reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent, as discussed in the Fact Sheet, Section VII.4.b., for discharges that receive less than 20:1 dilution.

As discussed in (a) above, the Discharger is unable to immediately comply with the operation specification for turbidity. The operation specification for turbidity reflects the standard for "filtered" wastewater pursuant to Title 22, as required in this specification, and as discussed in (a) above, this Order contains a compliance schedule for compliance with the turbidity operation specification. The Discharger is also unable to immediately comply with the disinfection standard as required in this specification and a compliance schedule for compliance with final total coliform bacteria limitations (which reflect the applicable Title 22 disinfection standard), along with interim limitations for total coliform bacteria, has been established in TSO No. R5-2014-~~XXXX~~.

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

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Pretreatment Requirements.** The design flow of the Alturas WWTP is less than 5 mgd, and the facility does not receive discharges from industrial users. Under these conditions, the Discharger is not required to develop a pretreatment program pursuant to USEPA regulations at 40 CFR Part 403.

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

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

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

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

- ii. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.
- iii. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.
- iv. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.
- v. **Within 180 days of the permit effective date**, the Discharger shall submit a biosolids use or disposal plan to the Central Valley Water Board. The plan shall describe at a minimum:

(a) Sources and amounts of biosolids generated annually.

- (b) Location(s) of on-site storage and description of the containment area.
 - (c) Plans for ultimate disposal. For landfill disposal, include the present classification of the landfill; and the name and location of the landfill.
- c. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003-DWQ and any future revisions thereto. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the general WDRs. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules

- a. **Compliance Schedules for Final Effluent Limitations for Aluminum, BOD₅, TDS, TSS and Operation Specifications for Turbidity.** This Order requires compliance with the final effluent limitations for aluminum, BOD₅, TDS, and the turbidity operation specification by **5 years from the effective date of this Order**. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations:

<u>Task</u>	<u>Date Due</u>
i. Submit Method of Compliance Workplan/Schedule	Within 6 months after adoption of this Order
ii. Submit and Implement Pollution Prevention Plan (PPP) ¹ for aluminum and TDS.	Within 1 year after adoption of this Order
iii. Progress Reports ²	1 December, annually, after approval of work plan until final compliance
iv. Submit Method of Compliance Project (e.g. preliminary engineering report)	1 October 2015
v. Submit Financing Plan	1 October 2015
vi. Begin Compliance Project	1 July 2017
vii. Full Compliance	5 years from the effective date of Order

¹ The PPP shall be prepared and implemented in accordance with Water Code section 13263.3(d)(3) as outlined in the Fact Sheet (Attachment F section VII.B.7)

² 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. BOD₅ and TSS Effluent Limitations (Section IV.A.1.a and IV.A.1.b).** Compliance with the final effluent limitations for BOD₅ and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite 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 BOD₅ 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.h).** 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. Average Dry Weather Flow Effluent Limitations (Section IV.A.1.f).** The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).
- D. Total Coliform Organisms Effluent Limitations (Section IV.A.1.a).** 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.
- E. 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).

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

$$\text{Mass (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$$

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

- G. Priority Pollutant Effluent Limitations (Section IV.A.1.a).** Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, 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).
2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or
 - b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).
3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or 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, 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.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.
- K. Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.e.),** Compliance with the accelerated monitoring and TRE provisions of Provision VI.C.2.a shall constitute compliance with the effluent limitation.

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

For composite sampling, if 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. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the

dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

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

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 Water Code 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 C.F.R. part 136, Attachment B, revised as of July 3, 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 Water Code 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 Water Resources Control Board (State Water Board) or Central Valley Water Board.

Satellite Collection System

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

Source of Drinking Water

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

Standard Deviation (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;

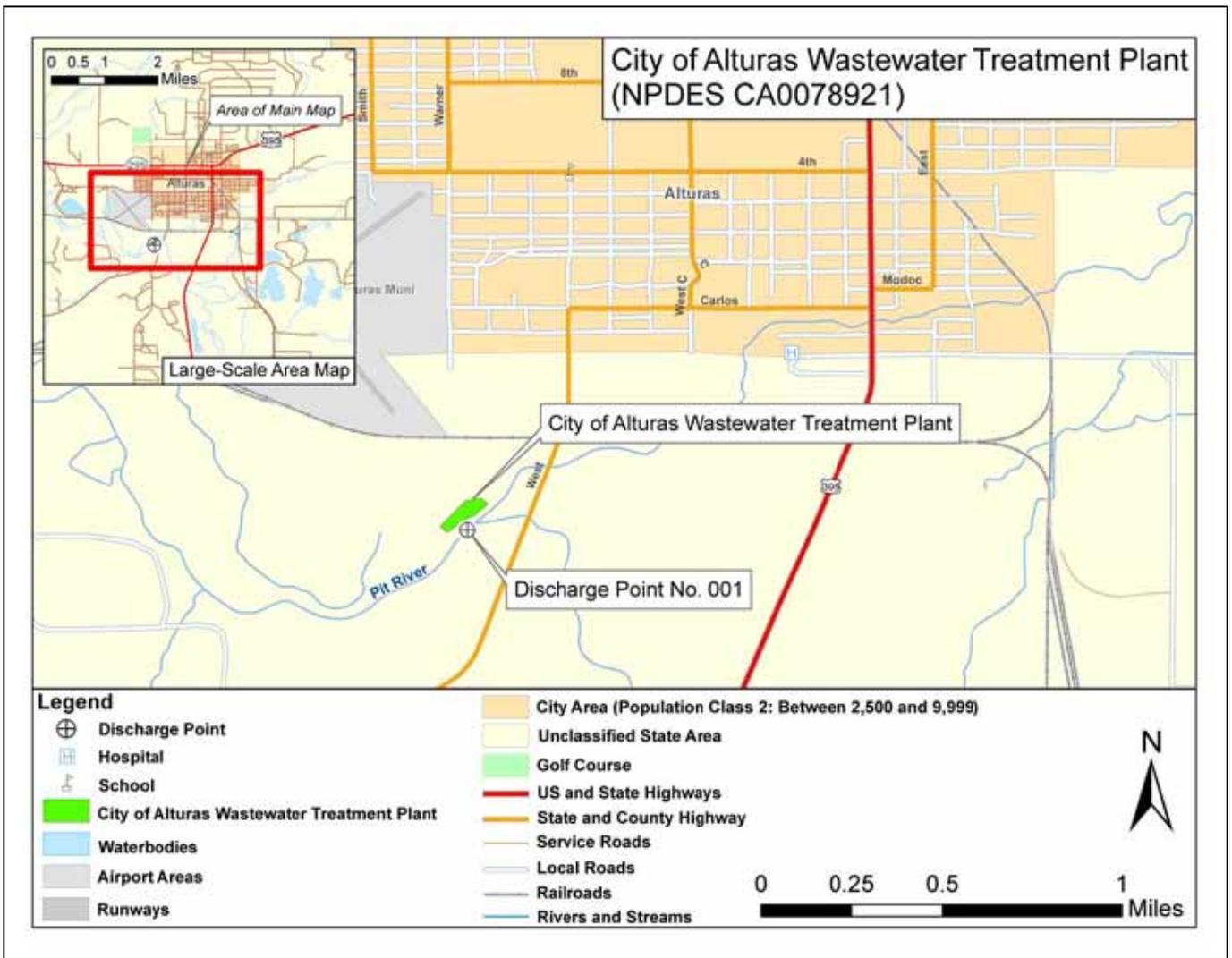
μ is the arithmetic mean of the observed values; and

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.)

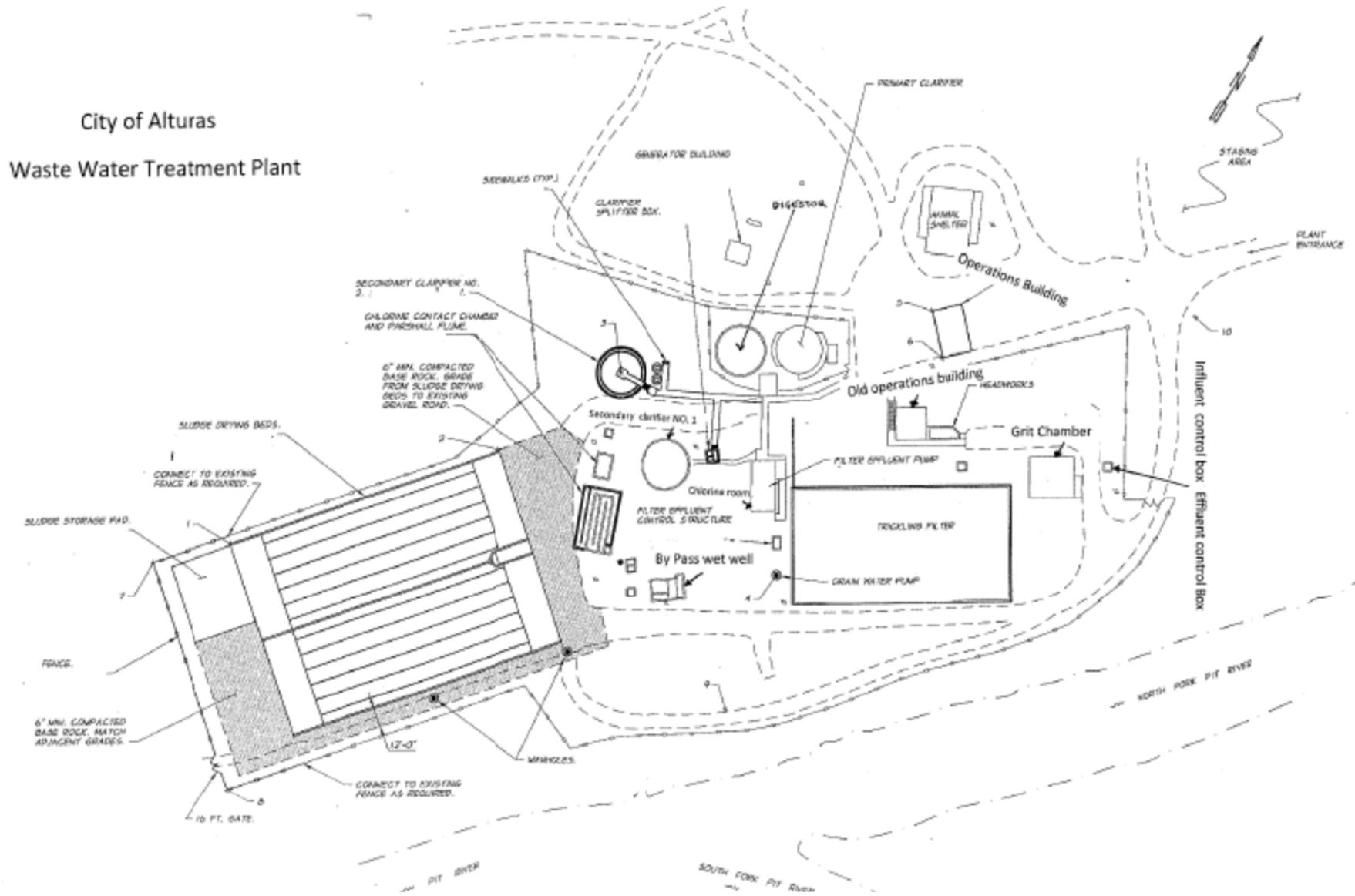
ATTACHMENT B – MAP



SITE LOCATION MAP

CITY OF ALTURAS
 WASTEWATER TREATMENT PLANT
 MODOC 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 and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 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 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 Water Code, any substances or parameters at any location. (40 C.F.R. § 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 C.F.R. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

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

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other

requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B. Monitoring results must be conducted according to test procedures under 40 C.F.R. part 136 or, in the case of sludge use or disposal, approved under 40 C.F.R. part 136 unless otherwise specified in 40 C.F.R. part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- B. Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 - 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 - 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 - 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 - 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 - 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
 - 1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 - 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for

reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

I.	General Monitoring Provisions	E-2
II.	Monitoring Locations	E-3
III.	Influent Monitoring Requirements	E-4
	A. Monitoring Location INF-001	E-4
IV.	Effluent Monitoring Requirements	E-4
	A. Monitoring Location EFF-001	E-4
V.	Whole Effluent Toxicity Testing Requirements	E-7
VI.	Land Discharge Monitoring Requirements – not applicable.....	E-10
VII.	Recycling Monitoring Requirements – not applicable	E-10
VIII.	Receiving Water Monitoring Requirements – surface water and groundwater.....	E-10
	A. Monitoring Locations RSW-001N, RSW-001S, RSW-001, and RSW-002	E-10
IX.	Other Monitoring Requirements	E-11
X.	Reporting Requirements	E-17
	A. General Monitoring and Reporting Requirements	E-17
	B. Self-Monitoring Reports (SMRs).....	E-17
	C. Discharge Monitoring Reports (DMRs) – Not Applicable.....	E-20
	D. Other Reports	E-20

Tables

Table E-1.	Monitoring Station Locations	E-3
Table E-2.	Influent Monitoring	E-4
Table E-3.	Effluent Monitoring	E-4
Table E-4.	Chronic Toxicity Testing Dilution Series.....	E-8
Table E-5.	Receiving Water Monitoring Requirements.....	E-10
Table E-6.	Municipal Water Supply Monitoring Requirements	E-11
Table E-7.	Effluent and Receiving Water Characterization Monitoring	E-12
Table E-8.	Monitoring Periods and Reporting Schedule.....	E-17

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the 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 pH, DO, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, 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 Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to 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 the Department of Public Health (DPH), in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- G.** The Discharger shall 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	A location where a representative sample of the influent into the Facility can be collected. Latitude: 41° 28' 26.95" Longitude: -120° 33' 29.65"
001	EFF-001	Downstream from the last connection through which wastes can be admitted to the outfall before being discharged to the Pit River. Latitude: 41° 28' 35.23" Longitude: -120° 32' 27.56"
--	RSW-001N	Within the North Fork of the Pit River, immediately upstream of the confluence of the North and South Forks of the Pit River. Latitude: 41° 28' 25.29" Longitude: -120° 33' 28.65"
--	RSW-001S	Within the South Fork of the Pit River, immediately upstream of the confluence of the North and South Forks of the Pit River. Latitude: 41° 28' 23.84" Longitude: -120° 33' 27.8"
--	RSW-001	At the confluence of the North and South Fork of Pit River, used for receiving water flow calculation only.
--	RSW-002	Within the Pit River, 100 feet downstream from the point of discharge. Latitude: 41° 28' 21.35" Longitude: -120° 33' 33"
--	BIO-001	A location where a representative sample of the biosolids can be obtained. Latitude: 41° 28' 24.21" Longitude: -120° 33' 32.85"

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

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
BOD 5-day @ 20°C	mg/L	24-hr Composite ¹	1/Month	2
	lbs/day	Calculate	1/Month	
Total Suspended Solids	mg/L	24-hr Composite ¹	1/Month	2
	lbs/day	Calculate	1/Month	

¹ 24-hour flow proportional composite. Composited discrete samples (consisting of a minimum of three well-spaced discrete samples) may be substituted for flow proportional samples until four years after the effective date of this Order.

² Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; or by methods approved by the Central Valley Water Board or the State Water Board.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated wastewater at Monitoring Location EFF-001 as follows. 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:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	¹
Chlorine, Total Residual	mg/L	Meter	Continuous	1,2
Turbidity	NTU	Grab	1/Day	1,4
Biochemical Oxygen Demand (5-day @ 20° C)	mg/L	24-hr Composite ³	1/Week	1
	lbs/day	Calculate	1/Week	--
pH	standard units	Grab ⁴	1/Week ⁵	1,4
Temperature	°C	Grab	1/Week	1,4
Total Coliform Organisms	MPN/100 mL	Grab	1/Week	1
Total Suspended Solids	mg/L	24-hr Composite ³	1/Week	1
	lbs/day	Calculate	1/Week	--
Aluminum, Total Recoverable	µg/L	24-hr Composite ³	1/Month	1,6
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month ^{3,7}	1
	lbs/day	Calculate	1/Month	--
Copper, Total Recoverable	µg/L	24-hr Composite ³	1/Month	1,8
Total Dissolved Solids	mg/L	Grab	1/Month	1
Hardness, Total (as CaCO ₃)	mg/L	24-hr Composite ³	1/Month ⁹	1
Zinc, Total Recoverable	µg/L	24-hr Composite ³	1/Month	1,8

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Aldrin	µg/L	24-hr Composite ³	1/Quarter ¹⁰	1,8
Arsenic, Total Recoverable	µg/L	24-hr Composite ³	1/Quarter ¹⁰	1,8
Bis (2-ethylhexyl) Phthalate	µg/L	Grab	1/Quarter ¹⁰	1,8,11
Carbon Tetrachloride	µg/L	Grab	1/Quarter ¹⁰	1,8
Dichlorobromomethane	µg/L	Grab	1/Quarter ¹⁰	1,8
Mercury, Total Recoverable	µg/L	Grab	1/Quarter ¹⁰	1,8
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter ¹²	1
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Quarter ¹²	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	1,4
Total Kjeldahl Nitrogen (TKN)	µg/L	Grab	1/Quarter	1
Total Phosphorus	µg/L	Grab	1/Quarter	1
Acute Toxicity	% Survival	Grab	1/Quarter ¹³	13
Chronic Toxicity	TUc	24-hr Composite ³	1/Year ¹⁴	14
Priority Pollutants and Other Constituents of Concern ¹⁵	µg/L	24-hr Composite ^{3,16}	17	1,8

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
<p>1 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.</p> <p>2 Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Three times daily (minimum) may be substituted for continuous chlorine monitoring until four years after the effective date of this Order.</p> <p>3 24-hour flow proportional composite. Composited discrete samples (consisting of a minimum of three well-spaced discrete samples) may be substituted for flow proportional samples until four years after the effective date of this Order.</p> <p>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.</p> <p>5 pH and temperature shall be recorded at the time of ammonia sample collection.</p> <p>6 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.</p> <p>7 Concurrent with whole effluent toxicity monitoring.</p> <p>8 For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See <i>Effluent and Receiving Water Characterization</i>, Attachment E, section IX.C., Table E-7). Sampling and analysis of bis (2-ethylhexyl) phthalate shall be conducted using ultra-clean techniques that eliminate the possibility of sample contamination.</p> <p>9 Hardness samples shall be collected concurrently with metals samples.</p> <p>10 Constituents shall be monitored quarterly for 3 years in accordance with the special study described in section VI.C.2.b of this Order.</p> <p>11 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 contaminant.</p> <p>12 Monitoring for nitrite and nitrate shall be conducted concurrently.</p> <p>13 Acute toxicity testing shall be conducted quarterly in accordance with section V.A of this Monitoring and Reporting Program.</p> <p>14 Chronic toxicity testing shall be conducted annually in accordance with section V.B of this Monitoring and Reporting Program.</p> <p>15 See list of Priority Pollutants and Other Constituents of Concern in <i>Effluent and Receiving Water Characterization Study</i>, Attachment E, Section IX.C., Table E-7.</p> <p>16 Volatile constituents shall be sampled in accordance with 40 CFR Part 136.</p> <p>17 See <i>Effluent and Receiving Water Characterization Study</i>, Attachment E, Section IX.C. for frequency and more detailed requirements related to performing the priority pollutant monitoring.</p>				

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 quarterly acute toxicity testing, concurrent with effluent ammonia sampling.
2. Sample Types – The Discharger may use flow-through or static renewal testing. For 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 fathead minnows (*Pimephales promelas*).
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 annual three species chronic toxicity testing.
2. Sample Types – Effluent samples shall be 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 Monitoring Location RSW-001N or RSW-001S, 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** – For routine and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and one control. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

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

^a Receiving water control or laboratory water control may be used as the diluent

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. 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:

- c. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.
- d. The statistical methods used to calculate endpoints;
- e. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
- f. The dates of sample collection and initiation of each toxicity test; and
- g. 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, or as amended by the Discharger's TRE Action Plan.
- 4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
 - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
 - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
 - c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001N, RSW-001S, RSW-001, and RSW-002

1. The Discharger shall monitor the Pit River at Monitoring Locations RSW-001N, RSW-001S, and RSW-002 as follows. RSW-001 monitoring is only required for reporting receiving water flow and receiving water to effluent flow ratio calculations.

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Gauge	1/Week ¹	--
Receiving Water Flow to Effluent Flow Ratio	Ratio	Calculate ²	1/Day	--
Dissolved Oxygen	mg/L	Grab	1/Week	3,4
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	3,4
pH	standard units	Grab	1/Week ⁵	3,4
Temperature	°C	Grab	1/Week ⁵	3,4
Turbidity	NTU	Grab	1/Week	3,4
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Month ⁶	4
Copper, Total Recoverable	µg/L	Grab	1/Quarter ¹¹	3
Zinc, Total Recoverable	µg/L	Grab	1/Quarter ¹¹	3
Aluminum, Total Recoverable	µg/L	Grab	1/Quarter ¹¹	3
Total Nitrogen	µg/L	Grab	1/Quarter	3
Total Phosphorus	µg/L	Grab	1/Quarter	3
Priority Pollutants and Other Constituents of Concern ⁷	µg/L	Grab	1,8	9,10

¹ Monitoring required at RSW-001N, RSW-001S, and RSW-001 only. North Fork Pit River flow may be determined at the Estes Street bridge. South Fork Pit River flow may be determined at the Likely gauging station.

² RSW-001 only. The upstream flow must be determined by adding the flows in the North and South Fork of the Pit River.

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

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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
-----------	-------	-------------	----------------------------	---------------------------------

- ⁶ Hardness samples shall be collected concurrently with effluent metals samples.
- ⁷ See list of Priority Pollutants and Other Constituents of Concern in *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C., Table E-7.
- ⁸ See monitoring frequency in *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C.
- ⁹ For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (See *Effluent and Receiving Water Characterization*, Attachment E, section IX.C.).
- ¹⁰ 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.
- ¹¹ Monitoring to be conducted during the third and fourth year of the permit.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. A composite sample of sludge shall be collected once per year at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for the metals listed in Title 22.
- b. Biosolids monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA publication SW-846), as required in 40 CFR 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in "100% dry weight" or "as is."
- c. Sampling records shall be retained for a minimum of **5 years**. A log shall be maintained of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log must be complete enough to serve as a basis for part of the annual report.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at 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-6. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids ¹	mg/L	Grab	1/year	
Electrical Conductivity @ 25°C ¹	µmhos/cm	Grab	1/year	
Standard Minerals ²	mg/L	Grab	1/year	

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
-----------	-------	-------------	----------------------------	---------------------------------

- ¹ If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
- ² Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

C. Effluent and Receiving Water Characterization

- Semiannual Monitoring.** Semiannual (2/Year) priority pollutant samples shall be collected from the effluent and upstream receiving water (EFF-001, RSW-001N, and RSW-001S) and analyzed for the constituents listed in Table E-7, below. Semiannual monitoring shall be conducted during the third year of the permit term (2 consecutive samples, evenly distributed throughout the year) and the results of such monitoring be submitted to the Central Valley Water Board with the monthly self-monitoring reports. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving waters. (Note: Duplicative monitoring for priority pollutant is not required. If monitoring and reporting for a priority pollutant listed in Table E-7 is already required in this Order, the Discharger is not required to perform additional, duplicative monitoring and reporting as specified in this section.)
- Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
- Sample type.** All receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-7, below.

Table E-7. Effluent and Receiving Water Characterization Monitoring

Parameter ²	Units	Effluent Sample Type	Maximum Reporting Level ¹
1,1-Dichloroethane	µg/L	Grab	1
1,1-Dichloroethene	µg/L	Grab	0.5
1,1,1-Trichloroethane	µg/L	Grab	2
1,1,2-Trichloroethane	µg/L	Grab	0.5
1,1,2,2-Tetrachloroethane	µg/L	Grab	0.5
1,2-Dichlorobenzene	µg/L	Grab	2
1,2-Dichloroethane	µg/L	Grab	0.5
cis-1,2-Dichloroethene	µg/L	Grab	
1,2-Dichloropropane	µg/L	Grab	0.5
1,2,4-Trichlorobenzene	µg/L	Grab	1
1,3-Dichlorobenzene	µg/L	Grab	2
1,3-Dichloropropene	µg/L	Grab	0.5
1,4-Dichlorobenzene	µg/L	Grab	2
Acrolein	µg/L	Grab	2
Acrylonitrile	µg/L	Grab	2
Benzene	µg/L	Grab	0.5
Bromoform	µg/L	Grab	2
Bromomethane	µg/L	Grab	2
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene (monochlorobenzene)	µg/L	Grab	2
Chloroethane	µg/L	Grab	2
2-Chloroethyl vinyl ether	µg/L	Grab	1

Parameter ²	Units	Effluent Sample Type	Maximum Reporting Level ¹
Chloroform	µg/L	Grab	2
Chloromethane	µg/L	Grab	2
Dibromochloromethane	µg/L	Grab	0.5
Dichlorobromomethane	µg/L	Grab	0.5
Dichloromethane	µg/L	Grab	2
Ethylbenzene	µg/L	Grab	2
Hexachlorobenzene	µg/L	Grab	1
Hexachlorobutadiene	µg/L	Grab	1
Hexachloroethane	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	
Trichlorofluoromethane	µg/L	Grab	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	
Styrene	µg/L	Grab	
Xylenes	µg/L	Grab	
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5

Parameter ²	Units	Effluent Sample Type	Maximum Reporting Level ¹
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	24-hr Composite	
Antimony	µg/L	24-hr Composite	5
Arsenic	µg/L	24-hr Composite	2
Asbestos	µg/L	24-hr Composite	
Barium	µg/L	24-hr Composite	
Beryllium	µg/L	24-hr Composite	2
Cadmium	µg/L	24-hr Composite	0.25
Chromium (III)	µg/L	24-hr Composite	50
Chromium (VI)	µg/L	Grab	10
Copper	µg/L	24-hr Composite	2
Cyanide	µg/L	Grab	5
Fluoride	µg/L	24-hr Composite	
Iron	µg/L	24-hr Composite	
Lead	µg/L	24-hr Composite	0.5
Mercury	µg/L	Grab	0.2
Manganese	µg/L	24-hr Composite	
Molybdenum	µg/L	24-hr Composite	
Nickel	µg/L	24-hr Composite	20
Selenium	µg/L	24-hr Composite	5
Silver	µg/L	24-hr Composite	0.25
Thallium	µg/L	24-hr Composite	1
Tributyltin	µg/L	24-hr Composite	
Zinc	µg/L	24-hr Composite	10
4,4'-DDD	µg/L	24-hr Composite	0.05
4,4'-DDE	µg/L	24-hr Composite	0.05
4,4'-DDT	µg/L	24-hr Composite	0.01
alpha-Endosulfan	µg/L	24-hr Composite	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite	0.01
Alachlor	µg/L	24-hr Composite	
Aldrin	µg/L	24-hr Composite	0.005
beta-Endosulfan	µg/L	24-hr Composite	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite	0.005
Chlordane	µg/L	24-hr Composite	0.1

Parameter ²	Units	Effluent Sample Type	Maximum Reporting Level ¹
delta-Hexachlorocyclohexane	µg/L	24-hr Composite	0.005
Dieldrin	µg/L	24-hr Composite	0.01
Diuron	µg/L	24-hr Composite	0.05
Endosulfan sulfate	µg/L	24-hr Composite	0.01
Endrin	µg/L	24-hr Composite	0.01
Endrin Aldehyde	µg/L	24-hr Composite	0.01
Heptachlor	µg/L	24-hr Composite	0.01
Heptachlor Epoxide	µg/L	24-hr Composite	0.01
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite	0.02
PCB-1016	µg/L	24-hr Composite	0.5
PCB-1221	µg/L	24-hr Composite	0.5
PCB-1232	µg/L	24-hr Composite	0.5
PCB-1242	µg/L	24-hr Composite	0.5
PCB-1248	µg/L	24-hr Composite	0.5
PCB-1254	µg/L	24-hr Composite	0.5
PCB-1260	µg/L	24-hr Composite	0.5
Toxaphene	µg/L	24-hr Composite	0.5
Atrazine	µg/L	24-hr Composite	
Bentazon	µg/L	24-hr Composite	
Carbofuran	µg/L	24-hr Composite	
2,4-D	µg/L	24-hr Composite	
Dalapon	µg/L	24-hr Composite	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	24-hr Composite	
Di(2-ethylhexyl)adipate	µg/L	24-hr Composite	
Dinoseb	µg/L	24-hr Composite	
Diquat	µg/L	24-hr Composite	
Endothal	µg/L	24-hr Composite	
Ethylene Dibromide	µg/L	24-hr Composite	
Glyphosate	µg/L	24-hr Composite	
Methoxychlor	µg/L	24-hr Composite	
Molinate (Ordram)	µg/L	24-hr Composite	
Oxamyl	µg/L	24-hr Composite	
Picloram	µg/L	24-hr Composite	
Simazine (Princep)	µg/L	24-hr Composite	
Thiobencarb	µg/L	24-hr Composite	
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite	
2,4,5-TP (Silvex)	µg/L	24-hr Composite	
Diazinon	µg/L	24-hr Composite	
Chlorpyrifos	µg/L	24-hr Composite	
Ammonia (as N)	mg/L	24-hr Composite	
Boron	µg/L	24-hr Composite	
Chloride	mg/L	24-hr Composite	
Diuron	µg/L	24-hr Composite	
Flow	MGD	Meter	
Hardness (as CaCO ₃)	mg/L	Grab	
Foaming Agents (MBAS)	µg/L	24-hr Composite	
Mercury, Methyl	ng/L	Grab	
Nitrate (as N)	mg/L	24-hr Composite	
Nitrite (as N)	mg/L	24-hr Composite	
pH	Std Units	Grab	

Parameter²	Units	Effluent Sample Type	Maximum Reporting Level¹
Phosphorus, Total (as P)	mg/L	24-hr Composite	
Specific conductance (EC)	µmhos/ cm	24-hr Composite	
Sulfate	mg/L	24-hr Composite	
Sulfide (as S)	mg/L	Grab	
Sulfite (as SO ₃)	mg/L	24-hr Composite	
Temperature	°C	Grab	
Total Dissolved Solids (TDS)	mg/L	24-hr Composite	

¹ The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

² Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

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. The Discharger shall continue to submit eSMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal. The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g. Discharger personnel or consultant) on how to prepare and submit eSMRs.
2. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-8. 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.

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
1/Month	Permit effective date	1 st 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	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	1 May 1 August 1 November 1 February
2/Year	Permit Effective Date	January 1 through June 30 July 1 through December 31	August 1 February 1
1/Year	Permit effective date	January 1 through December 31	1 February

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

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

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

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

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.
- d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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

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

- b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
5. 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 WDR's; 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.
6. The Discharger shall submit in the SMRs calculations and reports in accordance with the following requirements:
 - 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 BOD5, 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:
$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$
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 (BOD5 and TSS).** The Discharger shall calculate and report the percent removal of BOD5 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.D. 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 change in the receiving water based on the difference in temperature at RSW-001N and RSW-002 and the difference in temperature at RSW-001S and RSW-002.

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions VI.C 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 reporting levels (RLs), method detection limits, and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-7 (*Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C.) provides required maximum reporting levels in accordance with 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. **Effluent and Receiving Water Characterization Study.** An effluent and receiving water monitoring study is required to ensure adequate information is available for the next permit renewal. Twice during the third year of this permit term, the Discharger shall conduct monitoring of the effluent at EFF-001 and of the receiving water at RSW-001N and RSW-001S for all priority pollutants and other constituents of concern as described in the *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C.
5. **Annual Operations Report.** By 1 February of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
- b. The names and telephone numbers of persons to contact regarding the 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

Contents

- I. Permit Information..... F-3
- II. Facility Description..... F-4
 - A. Description of Wastewater and Biosolids Treatment and Controls..... F-4
 - B. Discharge Points and Receiving Waters F-4
 - C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-4
 - D. Compliance Summary F-6
 - E. Planned Changes F-8
- III. Applicable Plans, Policies, and Regulations F-8
 - A. Legal Authorities..... F-8
 - B. California Environmental Quality Act (CEQA)..... F-8
 - C. State and Federal Laws, Regulations, Policies, and Plans F-8
 - D. Impaired Water Bodies on CWA 303(d) List..... F-10
 - E. Other Plans, Policies and Regulations F-11
- IV. Rationale For Effluent Limitations and Discharge Specifications..... F-12
 - A. Discharge Prohibitions..... F-13
 - B. Technology-Based Effluent Limitations F-13
 - 1. Scope and Authority..... F-13
 - 2. Applicable Technology-Based Effluent Limitations F-14
 - C. Water Quality-Based Effluent Limitations (WQBELs)..... F-14
 - 1. Scope and Authority..... F-14
 - 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives..... F-15
 - 3. Determining the Need for WQBELs F-23
 - 4. WQBEL Calculations..... F-44
 - 5. Whole Effluent Toxicity (WET) F-46
 - D. Final Effluent Limitation Considerations F-48
 - 1. Mass-based Effluent Limitations F-48
 - 2. Averaging Periods for Effluent Limitations F-49
 - 3. Satisfaction of Anti-Backsliding Requirements..... F-49
 - 4. Antidegradation Policies..... F-51
 - 5. Stringency of Requirements for Individual Pollutants..... F-51
 - E. Interim Effluent Limitations F-53
 - F. Land Discharge Specifications – Not Applicable F-56
 - G. Recycling Specifications – Not Applicable..... F-56
- V. Rationale for Receiving Water Limitations F-56
 - A. Surface Water..... F-56
 - B. Groundwater – Not Applicable..... F-58
- VI. Rationale for Monitoring and Reporting Requirements F-58
 - A. Influent Monitoring F-58
 - B. Effluent Monitoring..... F-58
 - C. Whole Effluent Toxicity Testing Requirements F-59
 - D. Receiving Water Monitoring..... F-60
 - E. Other Monitoring Requirements..... F-60
- VII. Rationale for Provisions F-61
 - A. Standard Provisions..... F-61
 - B. Special Provisions F-61
 - 1. Reopener Provisions..... F-61

2. Special Studies and Additional Monitoring Requirements.....	F-62
3. Best Management Practices and Pollution Prevention	F-65
4. Construction, Operation, and Maintenance Specifications.....	F-65
5. Special Provisions for Municipal Facilities (POTWs Only)	F-66
6. Other Special Provisions – Not Applicable.....	F-67
7. Compliance Schedules.....	F-67
VIII. Public Participation	F-68
A. Notification of Interested Parties.....	F-68
B. Written Comments.....	F-68
C. Public Hearing	F-68
D. Reconsideration of Waste Discharge Requirements.....	F-68
E. Information and Copying.....	F-69
F. Register of Interested Persons	F-69
G. Additional Information.....	F-69

Tables

Table F-1. Facility Information	F-3
Table F-2. Historic Effluent Limitations and Monitoring Data.....	F-5
Table F-3. Basin Plan Beneficial Uses	F-9
Table F-4. 303 (d) List for Pitt River.....	F-11
Table F-5. Summary of Technology-based Effluent Limitations	F-14
Table F-6. Copper ECA Evaluation.....	F-21
Table F-7. Lead ECA Evaluation	F-22
Table F-8. Summary of ECA Evaluations for CTR Hardness-dependent Metals	F-23
Table F-9. Salinity Water Quality Criteria/Objectives.....	F-39
Table F-10. Summary of Water Quality-Based Effluent Limitations.....	F-45
Table F-11. Whole Effluent Chronic Toxicity Testing Results.....	F-47
Table F-12. Summary of Final Effluent Limitations.....	F-51
Table F-13. Interim Effluent Limitation Calculation Summary.....	F-55

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	5A250100001
Discharger	City of Alturas
Name of Facility	City of Alturas Wastewater Treatment Plant
Facility Address	20099 County Road 54
	Alturas, CA 96101
	Modoc County
Facility Contact, Title and Phone	Patrick McCaffery, Plant Operator, (530) 640-2239
Authorized Person to Sign and Submit Reports	Joe Picotte, Director of Public Works, (530) 233-2377
Mailing Address	200 W. North Street, Alturas, CA 96101
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	B
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	0.5 million gallons per day (mgd), average dry weather flow (ADWF)
Facility Design Flow	0.5 mgd ADWF
Watershed	Upper Pit
Receiving Water	Pit River
Receiving Water Type	Inland Surface Water

- A. The City of Alturas (hereinafter Discharger) is the owner of the City of Alturas Wastewater Treatment Plant (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 the Pit River, a water of the United States. The Discharger was previously regulated by Order R5-2006-0103 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0078921 adopted on 22 September 2006 and expired on 11 November 2011. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

- C. The Discharger filed a report of waste discharge and submitted an application for reissuance of its WDR's and NPDES permit on 23 June 2011. Supplemental information was received August 2011. A site visit was conducted on 27 April 2011 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Alturas and serves a population of approximately 3,000. The design daily average flow capacity of the Facility is 0.5 million gallons per day (mgd).

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system consists of an inlet screen, grit removal, a grinder, primary clarifier, trickling filter, two secondary clarifiers, chlorine contact basin, and dechlorination station. Conventional gas chlorination is used for disinfection followed by sulfur dioxide dechlorination. The trickling filter consists of random plastic media with an underdrain/recirculation pump station. Sulfuric acid is injected seasonally after the trickling filter to reduce effluent pH. During the winter months when cold temperatures reduce the effectiveness of the trickling filter, ferric chloride is injected prior to primary clarification and a blended aluminum coagulant is added prior to secondary clarification. Solids are digested in an anaerobic digester and dried in concrete-lined sludge drying beds. The sludge drying beds include an underdrain system that routes filtrate to the trickling filter. Dried solids are hauled to the Modoc County landfill.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 14, T42N, R12E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to the Pit River, a water of the United States at a point latitude 41° 28' 35.23" N and longitude 120° 32' 27.56" W. The discharge point is immediately downstream of the confluence of the North and South Forks of the Pit River.

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

Effluent limitations contained in the existing Order for discharges from the Facility and representative monitoring data from the term of Order No. R5-2006-0103 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From October 2006 To May 2011)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	mgd	--	--	0.5 ¹	0.363 ²	--	0.8
pH	standard units	--	--	6.5 – 8.5	--	--	6.5 – 7.8
Biochemical Oxygen Demand (5-day @ 25°C)	mg/L	30 ³	45 ³	60 ³	43.6	57.3	57.3
	lbs/day	125 ⁴	187 ⁴	250 ⁴	156	210	210
	% removal	85	--	--	61 ¹⁷	--	--
Total Suspended Solids	mg/L	30 ³	45 ³	60 ³	43	68	68
	lbs/day	125 ⁴	187 ⁴	250 ⁴	137	227	227
	% removal	85	--	--	63 ¹⁷	--	--
Settleable Solids	ml/L	0.1	--	0.2	ND	--	ND
Chlorine Residual	mg/L	--	0.01 ⁵	0.02 ⁶	0.02	0.02	0.02
Copper, Total Recoverable	µg/L	11.8 ⁷	--	36.7 ⁷	38.1 ⁸	--	38.1 ⁸
		4.6 ⁹	--	9.2 ⁹	8 ¹⁰	--	8 ¹⁰
Zinc, Total Recoverable	µg/L	58.0 ⁷	--	180.4 ⁷	63.6 ⁸	--	63.6 ⁸
		40.5 ⁹	--	81.9 ⁹	32.2 ¹⁰	--	32.2 ¹⁰
Turbidity	NTU	5 ^{11,12}	--	--	34	--	--
Total Coliform Organisms	MPN/100 mL	2.2 ^{11,12}	--	23 ¹²	920	>1,600	>1,600
		--	23 ^{13,14}	500 ¹⁴			
Acute Toxicity	% survival	--	--	15	--	--	0 ¹⁶

Parameter	Units	Effluent Limitation			Monitoring Data (From October 2006 To May 2011)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

1 Average dry weather flow (May through October).
 2 Based on monthly average flows during May through October in 2008, 2009, and 2010.
 3 To be ascertained by a 24-hour composite.
 4 Based upon a design treatment capacity of 0.5 mgd.
 5 Applied as a 4-day average effluent limitation
 6 Applied as a 1-hour average effluent limitation.
 7 Interim effluent limitation effective until 18 May 2015.
 8 Represents monitoring data collected between October 2006 and 18 May 2010.
 9 Final effluent limitation effective 18 May 2010.
 10 Represents monitoring data collected between 18 May 2010 and 31 May 2011.
 11 Applied as a monthly median effluent limitation.
 12 Applicable for discharges where the effluent dilution ratio is less than 20:1 and the discharge dates are
 13 15 June through 15 November.
 14 Applied as a 7-day median effluent limitation.
 15 Applicable for discharges where the effluent dilution ratio is greater than 20:1 regardless of the discharge
 16 date.
 17 Survival of test fish 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%
 Represents the minimum observed percent survival.
 Lowest calculated percent removal.

D. Compliance Summary

1. Facility improvements made since the adoption of Order R5-2006-0103 include the following:
 - a. Installation of a new operations building;
 - b. Replacement of the influent grinder;
 - c. Modifications to the effluent Parshall flume;
 - d. Repair of the influent grinder;
 - e. Modifications to the effluent Parshall flume;
 - f. Repair of the existing clarifier and installation of an additional clarifier;
 - g. Improvements to the fixed-film biological (trickling) filter including replacement of the media, installation of a recirculation system and installation of a full-floor under drain system;
 - h. Doubling of the existing chlorine contact chamber length; and
 - i. Installation of sludge drying beds.

2. Construction of these Phase I improvements commenced in 2007 and were completed in early 2009. As these improvements were required as part of Order R5-2006-0103, no permit modification was required.
3. Significant problems were encountered after the completion of the Phase I improvements. These problems include:
 - a. Biological activity in the trickling filter essentially ceases in cold weather;
 - b. The secondary clarifiers can freeze during extremely cold periods due to the cold temperature of the effluent from the trickling filter and ambient temperatures;
 - c. The under drain in the trickling filter did not adequately remove accumulated solids; and
 - d. Short-circuiting was occurring in the original clarifier.
4. As a result of the failures described above, the Facility failed to meet Effluent limits specified in Order R5-2006-0103 for an extended period. As an interim solution, the Discharger submitted an Interim Operations Plan (IOP) on September 30, 2009. The three basic components to the IOP are:
 - a. Control of BOD and TSS loading to the trickling filter to fit its current capacity while further physical upgrades are considered. As noted above, biological activity in the trickling filter essentially ceases in cold weather. In the warmer times of the year, the BOD loading to the trickling filter is insufficient to maintain biological activity (i.e. growth on the media is starved for nutrients).
 - b. Management of internally recycled water, containing elevated ammonia, comprised principally of digester supernatant and sludge drying bed filtrate, to avoid impacts during peak loading periods of the day.
 - c. Control of TSS, colloids, and pH to the chlorine contact basin, improving disinfection efficiency for Total Coliform.
2. Implementation of the IOP commenced in October 2009 and included, trickling filter spray modifications and reduction in the area used by the trickling filter, temporary baffling in the primary clarifier, extensive use of chemicals to coagulate solids, adjust pH, etc. in order for the Facility to meet Effluent Limitations. Compliance with Effluent Limitations in Order R5-2006-0103 has been consistently, though not always, achieved using the IOP procedures. However, the chemicals used under the IOP are relatively expensive and operation of the Facility under IOP procedures is not economically sustainable.
3. On 15 December 2011, the Executive Officer issued Administrative Civil Liability (ACL) Complaint No. R5-2011-0596 for violations of effluent limitations (BOD₅, TSS, total coliform organisms, and acute toxicity) for the period beginning in July 2008 and ending March 2010, which proposed to assess \$156,000 in mandatory minimum penalties (MMPs). All of the violations subject to minimum mandatory penalties occurred in the period between the facility upgrade and implementation of the IOP. The Discharger waived the right to a hearing and settled with a compliance project consisting of implementation of the IOP modifications described above.

4. A compliance inspection of the Facility was conducted on 27 April 2011. Major findings from the inspection were the following.
 - a. Facility personnel were unfamiliar with the Standard Provisions of the permit and no copy was available on-site as required by Order No. R5-2006-0103.
 - b. The Discharger collected sample types inconsistent with requirements of Order No. R5-2006-0103 for 5-day biochemical oxygen demand (BOD5), copper, hardness, total suspended solids (TSS), zinc, and chronic toxicity.
 - c. The Discharger had not developed a quality assurance/quality control (QA/QC) program or standard operating procedures (SOPs) for analyses conducted at the on-site laboratory, as required by Order No. R5-2006-0103.
5. A compliance inspection of the Facility was conducted on 18 May 2010. No major violations were observed.

E. Planned Changes

The Discharger reported in the ROWD that they will be discontinuing discharges to the Pit River during the term of the permit and are planning to land apply treated wastewater. The Discharger is in the process of locating an appropriate site and developing a project that will not have significant environmental impacts. The Discharger anticipates that the project will be defined, approved, and constructed during the permit term.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

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

1. **Water Quality Control Plans.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.
 - a. **Basin Plan.** The Central Valley Water Board adopted the Water Quality Control Plan, Fourth Edition (Revised October 2011), 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. Requirements in this Order implement the Basin Plan.

The Basin Plan implements State Water Board Resolution 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, beneficial uses applicable to the Pit River are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pit River (Confluence of Forks to Hat Creek)	<u>Existing:</u> 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); Spawning, reproduction, and/or early development, warm (SPWN); and Wildlife habitat (WILD).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board’s Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These

anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that *“the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective”*.

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

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

8. **Storm Water Requirements.** 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 Storm water General Order. Therefore, this Order does not regulate storm water.
9. **Human Right to Water Act.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011 USEPA gave final approval to California’s 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as “...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 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.” The Pit River from the confluence of the North and South Forks to Shasta Lake is listed on the 2008-2010 303(d) list as impaired for nutrients, organic enrichment/low dissolved oxygen, and temperature. This Order does not establish effluent limitations for these parameters, but does require effluent monitoring for nutrients (ammonia, nitrate, and nitrite), receiving water monitoring for dissolved oxygen, and effluent and receiving water monitoring for temperature to evaluate if the discharge is contributing to the impairment.
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. Table F-4, below, identifies the 303(d) listings and the status of each TMDL.

Table F-4. 303 (d) List for Pitt River

Pollutant	Potential Sources	Proposed TMDL Completion
Nutrients	Agriculture and Grazing	2013 ¹
Organic Enrichment/ Low Dissolved Oxygen	Agriculture and Grazing	2013 ¹
Temperature	Agriculture and Grazing	2013 ¹

¹ Date as indicated in USEPA approved 2008-2010 303(d) list. Due to inadequate staff resources, however, TMDL development for the Pit River has been delayed.

3. The 303(d) listings and TMDLs have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in VI.C of this Fact Sheet.

E. Other Plans, Polices and Regulations

1. **Title 27.** The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and

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

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 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 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. Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a report of waste discharge (ROWD) before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
- 2. Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at CFR Part 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 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 Regional Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
- 3. Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance
- 4. Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility’s systems).** This prohibition is based on CFR Part 122.41 et seq. that requires the proper design and operation of treatment facilities

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

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

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based

regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. A daily maximum effluent limitation for BOD₅ 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. In addition, 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. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ 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 0.5 mgd. Therefore, this Order contains an average dry weather discharge flow effluent limit of 0.5 mgd.
- 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.

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

Table F-5. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	0.5 ¹	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	60	--	--
	lbs/day ²	125	187	250	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids	mg/L	30	45	60	--	--
	lbs/day ²	125	187	250	--	--

¹ The average dry weather discharge flow shall not exceed 0.5 mgd.

² Based on a design flow of 0.5 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements or other provisions, is discussed in section IV.C.3.d.v and IV.D.5 of this Fact Sheet.

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

The process for determining reasonable potential and calculating 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.** Refer to III.C.1. above for a complete description of the receiving water and beneficial uses.

- b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from 1 June 2008 through 31 May 2011, which includes effluent and ambient background data submitted in SMRs and a priority pollutant scan on 9 May 2011. Additional data outside of this range was also analyzed where there was inadequate data to perform an analysis, including samples collected on 30 June 2011, 14 July 2011, and 22 August 2011 for certain standard minerals and disinfection byproducts.
- c. **Assimilative Capacity/Mixing Zone.** The Pit River experiences minimal dilution in some years, primarily during the middle and late summer months. Therefore, a mixing zone and dilution credits have not been proposed. The lack of available dilution during low-flow periods results in more stringent effluent limitations to protect recreational uses, drinking water supplies, agricultural irrigation supplies, and aquatic life. Section 1.4.2 of the SIP allows for mixing zones and dilution credits in establishing effluent limitations. However, the Discharger has not provided an approved Dilution/Mixing Zone Study which meets the requirements of Section 1.4.2.2 of the SIP. Based on the available information, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.
- c. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. 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. **Hardness-Dependent CTR Metals Criteria.** 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 SIP¹, the CTR² 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

¹ The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), 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.

Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10).

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 body¹. 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.

- i. **Conducting the Reasonable Potential Analysis (RPA).** 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 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.
 - a) The SIP requires water quality-based effluent limitations (WQBELs) if the MEC is equal to or 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 of 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 ambient hardness is outlined in subsection ii, below.
 - b) The SIP requires WQBELs 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 hardness². 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,

¹ 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.

² The pollutant must also be detected in the effluent.

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.

- ii. **Calculating Water Quality-Based Effluent Limitations.** 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 Study¹ developed procedures for calculating the effluent concentration allowance (ECA)² 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 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 CTR³, is as follows:

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

Where:

H = hardness (as CaCO₃)⁴

WER = water-effect 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:

$$\text{ECA} = C \quad (\text{when } C \leq B)^1 \quad (\text{Equation 2})$$

¹ 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.

² 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.

³ 40 CFR § 131.38(b)(2).

⁴ For this discussion, all hardness values are in mg/L as CaCO₃.

Where:

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

B = the ambient background concentration

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 (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) 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 criteria². 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)³. Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 108 mg/L to 214 mg/L, based on 13 samples from June 2008 to May 2011. The upstream receiving water hardness varied from 53 mg/L to 169 mg/L, based on 11 samples from June 2008 to May 2011, and the downstream receiving water hardness varied from 61 mg/L to 119 mg/L, based on 12 samples collected during the same period. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 108 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., 53 mg/L)

¹ The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e. $C \leq B$)

² 2006 Study, p. 5700

³ 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.

- Upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

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.

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

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), the fully-mixed downstream ambient copper concentration is in compliance with the CTR criteria.¹

¹ This method considers the actual lowest observed upstream hardness and actual lowest observed 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		108 mg/L (as CaCO₃)			
Lowest Observed Upstream Receiving Water Hardness		53 mg/L (as CaCO₃)			
Highest Assumed Upstream Receiving Water Copper Concentration		5.4 µg/L¹			
Copper ECA_{chronic}²		10 µg/L			
Effluent Fraction⁶		Fully Mixed Downstream Ambient Concentration			
		Hardness³ (mg/L)	CTR Criteria⁴ (µg/L)	Copper⁵ (µg/L)	Complies with CTR Criteria
High Flow  Low Flow	1%	54	5.5	5.5	Yes
	5%	56	5.7	5.6	Yes
	15%	61	6.1	6.1	Yes
	25%	67	6.6	6.6	Yes
	50%	81	7.8	7.7	Yes
	75%	94	8.9	8.8	Yes
	100%	108	10	10	Yes

- ¹ Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 53 mg/L.
- ² ECA calculated using Equation 1 for chronic criterion at a hardness of 108 mg/L.
- 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 copper concentration is the mixture of the receiving water and effluent copper 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).

ECA for Acute Cadmium, Lead, and Acute Silver – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), 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 conditions (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).

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

where:

m, b = criterion specific constants (from CTR)

H_e = lowest observed effluent hardness

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

An example similar to the Concave Down Metals is shown for lead, a Concave Up Metal, in Table F-7, below. As previously mentioned, the lowest effluent hardness is 108 mg/L, while the upstream receiving water hardness ranged from 53 mg/L to 169 mg/L, and the downstream receiving water hardness ranged from 61 mg/L to 119 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 53 mg/L.

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 flow conditions (high flow to low flow) and under all known hardness conditions, as demonstrated in Table F-7, for lead.

Table F-7. Lead ECA Evaluation

		Lowest Observed Effluent Hardness			108 mg/L
		Reasonable Worst-case Upstream Receiving Water Hardness			53 mg/L
		Reasonable Worst-case Upstream Receiving Water Lead Concentration			1.42 µg/L¹
		Lead ECA_{chronic}²			3.29 µg/L
		Fully Mixed Downstream Ambient Concentration			
	Effluent Fraction⁶	Hardness³ (mg/L) (as CaCO₃)	CTR Criteria⁴ (µg/L)	Lead⁵ (µg/L)	Complies with CTR Criteria
High Flow Low Flow	1%	53.6	1.4	1.4	Yes
	5%	55.8	1.5	1.5	Yes
	15%	61.3	1.7	1.7	Yes
	25%	66.8	1.9	1.9	Yes
	50%	80.5	2.4	2.4	Yes
	75%	94.3	3.0	2.8	Yes
	100%	108.0	3.5	3.3	Yes

¹ Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 53 mg/L.

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).

Based on the procedures discussed above, Table F-8 lists all the CTR hardness-dependent metals and the associated ECA used in this Order.

Table F-8. Summary of ECA Evaluations for CTR Hardness-dependent Metals

CTR Metals	ECA (µg/L, total recoverable)	
	Acute	Chronic
Copper	1	10
Chromium III	1,850	220
Cadmium	1	2.6
Lead	85	3.3
Nickel	501	56
Silver	3.8	--
Zinc	1	128

¹ Per Footnote x for the acute criterion for cadmium, copper, and zinc in the CTR at 40 CFR 131.38(b)(1), the site-specific objectives for the Sacramento River above Hamilton City in Table III-1 of the Basin Plan applies in lieu of the acute CTR criterion.

3. Determining the Need for WQBELs

- a. The Central Valley 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 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 (i.e. constituents were not detected in the effluent or receiving water); however, monitoring for those

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

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.

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

i. **Iron**

- (a) **WQO.** The Secondary MCL established for iron is 300 µg/L, used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.
- (b) **RPA Results.** 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, when sampling at least quarterly. Iron is not a priority pollutant and the RPA procedures in section 1.3 of the SIP are not required. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average iron concentrations. The maximum calendar annual average effluent concentration for iron was 124 µg/L while the maximum observed upstream calendar annual average receiving water concentration was 470 µg/L. Due to the relatively low iron concentrations of the effluent, the Central Valley Water Board has determined that iron in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.

ii. **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.” Order No. R5-2006-0103 established an average monthly effluent limitation (AMEL) of 0.1 ml/L and a maximum daily effluent limitation (MDEL) of 0.2 ml/L for settleable solids to implement the Basin Plan's narrative objective.
 - (b) **RPA Results.** Settleable solids were not detected in any of the 775 effluent samples collected from January 2009 through May 2011. Because settleable solids have not been detected in the effluent, the discharge from the Facility does not have a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids and effluent limitations for settleable solids are not included in this Order.
- c. **Constituents with Limited Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited, ambient background concentrations are not available, or applicable criteria are unknown. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Aldrin**

- (a) **WQO.** The CTR includes a criterion of 0.00013 µg/L for aldrin for the protection of human health for waters from which both water and organisms are consumed. In addition, the Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin.
- (b) **RPA Results.** The MEC for aldrin was 0.022 µg/L while the maximum observed upstream receiving water concentration was <0.003 µg/L, based on one sample collected on 9 May 2011.

The use of aldrin was banned by the USEPA in 1987 and it is unlikely that there is presently a source in the Discharger's collection or treatment system. Although aldrin is a persistent pesticide, there is a reasonable possibility that the aldrin result is an anomaly.

1. SIP Section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
2. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined the data set is too limited (i.e. one data point) and is therefore inappropriate and insufficient to be used in the RPA.

In implementing its discretion, the Central Valley Water Board is not finding that aldrin does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality criterion; rather the Central Valley Water Board cannot make such a determination given the limited data set.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for aldrin. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of aldrin and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

ii. **Arsenic**

- (a) **WQO.** DPH has adopted a Primary MCL for arsenic of 10 µg/L, which is protective of the Basin Plan's chemical constituent objective.

(b) **RPA Result.** The MEC for arsenic was 15 µg/L (as total recoverable) while the maximum observed upstream receiving water concentration was 1.2 µg/L (as total recoverable), based on one sample collected on 9 May 2011. Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. The single arsenic result is above the Primary MCL but is not adequate to assess RPA over the longer term averaging period for the arsenic standard. Due to the limited data set, the Central Valley Water Board is not establishing effluent limitations for arsenic at this time. Instead of limitations, additional monitoring has been established for arsenic. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of arsenic and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

iii. **Bis (2-ethylhexyl) Phthalate**

(a) **WQO.** The CTR includes a criterion of 1.8 µg/L for bis (2-ethylhexyl) phthalate for the protection of human health for waters from which both water and organisms are consumed.

(b) **RPA Results.** Bis (2-ethylhexyl) phthalate was detected in the effluent at a concentration of 5 µg/L, based on one sample collected on 9 May 2011. Bis (2-ethylhexyl) phthalate was not detected in one sample collected on 9 May 2011 in the upstream receiving water.

Bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment.

1. SIP Section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
2. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined the data set is too limited (i.e. one data point) and is therefore inappropriate and insufficient to be used in the RPA.

In implementing its discretion, the Central Valley Water Board is not finding that aldrin does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality criterion; rather the Central Valley Water Board cannot make such a determination given the limited data set.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Therefore, the Central Valley Water Board is not establishing effluent limitations for bis (2-ethylhexyl) phthalate at this time. Instead of limitations, additional monitoring has been established

for bis (2-ethylhexyl) phthalate using “clean” techniques to ensure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected pollutant. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of bis (2-ethylhexyl) phthalate and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

iv. Carbon Tetrachloride

- (a) **WQO.** The CTR includes a criterion of 0.25 µg/L for carbon tetrachloride for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Result.** The MEC for carbon tetrachloride was 3.4 µg/L while the maximum observed upstream receiving water concentration was <0.05 µg/L, based on one sample collected on 9 May 2011.

Carbon tetrachloride is a common laboratory contaminant. Carbon tetrachloride is not typically found in the discharge of wastewater treatment facilities that do not receive industrial wastewater.

1. SIP Section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
2. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined the data set is too limited (i.e. one data point) and is therefore inappropriate and insufficient to be used in the RPA.

In implementing its discretion, the Central Valley Water Board is not finding that aldrin does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality criterion; rather the Central Valley Water Board cannot make such a determination given the limited data set.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Due to the limited data set, the Central Valley Water Board is not establishing effluent limitations for carbon tetrachloride at this time. Instead of limitations, additional monitoring has been established for carbon tetrachloride. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of carbon tetrachloride and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

v. **Dichlorobromomethane**

- (a) **WQO.** The CTR includes a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed.
- (b) **RPA Results.** Dichlorobromomethane is a common byproduct of chlorinated wastewater. Dichlorobromomethane was not detected in the receiving water. Dichlorobromomethane was detected in four effluent samples collected between October 2008 and March 2011, with an estimated MEC of 0.6 µg/L. All four results were estimated concentrations, measured at levels higher than the method detection limit (MDL), but lower than the reporting level (RL). Based on the estimated results, it is uncertain whether the effluent has a reasonable potential to cause or contribute to an exceedance of the CTR criterion. Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Due to the limited data set, the Central Valley Water Board is not establishing effluent limitations for dichlorobromomethane at this time. Instead of limitations, additional monitoring has been established for dichlorobromomethane. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of dichlorobromomethane and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

vi. **Mercury**

- (a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that “...*more stringent mercury limits may be determined and implemented through use of the State’s narrative criterion.*” In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.
- (b) **RPA Result.** The MEC for mercury was 0.055 µg/L while the maximum observed upstream receiving water concentration was 0.00335 µg/L, based on one sample collected on 9 May 2011.
1. SIP Section 1.2 states that the Central Valley Water Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
 2. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined the data set is too limited (i.e. one data

point) and is therefore inappropriate and insufficient to be used in the RPA.

In implementing its discretion, the Central Valley Water Board is not finding that mercury does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality criterion; rather the Central Valley Water Board cannot make such a determination given the limited data set.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Even though mercury sampling requires ultra-clean sampling, false-positive mercury tests are not uncommon. Considering the mercury data as a whole (i.e. a single sample not substantially exceeding the constituent objective, the high percentage of false positives of mercury samples, etc.), it is uncertain whether the effluent has a reasonable potential to cause or contribute to an exceedance of the CTR criterion. Due to the limited data set, the Central Valley Water Board is not establishing effluent limitations for mercury at this time. Instead of limitations, additional monitoring has been established for mercury. Additionally, this Order requires the Discharger to conduct a study to evaluate the source of mercury and monitoring sufficient to provide data to determine reasonable potential to exceed the CTR criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

- vii. **Ammonia.** USEPA's 2013 recommended criteria for ammonia are dependent on temperature and pH. In addition, the criteria may be recalculated to account for the absence of freshwater mussels; which are very sensitive to ammonia. There are site-specific receiving water issues, absent the discharge, that make it difficult at this time to determine the appropriate criteria to apply for purposes of evaluating whether ammonia in the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. For these reasons, and as discussed in further detail in Fact Sheet section VII.B.2, this Order requires the Discharger to perform a study to determine the applicable ammonia criteria, given the site-specific issues of the receiving water. If after review of the study results, it is determined that the ammonia in the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective, this Order contains a reopener provision to allow for the inclusion of ammonia effluent limits, if appropriate.
- d. **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, BOD₅, copper, pH, total coliform organisms, TSS, and zinc. WQBELs for these constituents are included in this Order. 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. Secondary Maximum Contaminant Level - Consumer Acceptance Limit for aluminum is 200 µg/L.

Footnote L of Table 2 on page 19 of the National Recommended Ambient Water Quality Criteria Correction (April 1999), indicates that the chronic aquatic life criterion is based on studies conducted under specific receiving water conditions with a low pH (6.5 to 6.6 pH units) and low hardness (<10 mg/L as CaCO₃).

USEPA advises that a water effects ratio may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms. Monitoring data demonstrates that these conditions are not similar to those in the Pit River, which consistently has an upstream hardness concentrations ranging from 53 to 169 mg/L and the pH ranging from 7.1 to 9.3 s.u. Thus, it is unlikely that application of the chronic criterion of 87 µg/L is necessary to protect aquatic life in the Pit River. For similar reasons, the Utah Department of Environmental Quality (Department) only applies the 87 µg/L chronic criterion for aluminum where the pH is less than 7.0 and the hardness is less than 50 mg/L as CaCO₃ in the receiving water after mixing. For conditions where the pH equals or exceeds 7.0 and the hardness is equal to or exceeds 50 mg/L as CaCO₃, the Department regulates aluminum based on the 750 µg/L acute criterion. In the case of the Pit River the available data indicates that the pH ranges from 6.9 to 9.6 standard units with the median at 7.9 standard units, and the downstream hardness ranges from 52 to 127 mg/L with a median of 86 mg/L as CaCO₃. It is likely that application of the stringent chronic criteria (87µg/L) is overly protective. In the absence of an applicable chronic aquatic life criterion, the most stringent water quality criterion is the Secondary MCL - Consumer Acceptance Limit for aluminum of 200 µg/L.

- (b) **RPA Results.** The MEC for aluminum was 1,280 µg/L while the weighted average of maximum observed upstream receiving water concentrations in the North and South Forks of the Pit River was 737 µg/L. The maximum observed annual average effluent concentration was 479 µg/L, based on three samples collected in June through August 2011. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above both the acute criterion of 750 µg/L and the Secondary MCL of 200 µg/L.
- (c) **WQBELs.** This Order contains a final AMEL and MDEL for aluminum of 374 µg/L and 750 µg/L. In addition, this Order contains an annual average limitation of 200 µg/L.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 1,280 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 a compliance schedule justification in accordance with State Water Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National*

Pollutant Discharge Elimination System Permits on 17 May 2012. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order.

ii. **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 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.
- (b) **RPA Results.** The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

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

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

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to the Pit River, the existing

chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

- (c) **WQBELs.** The 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 average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can 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.** Prior to discharging, the Discharger dechlorinates the treated effluent using sulfur dioxide. The Central Valley Water Board concludes, therefore, that compliance with chlorine residual effluent limitations is feasible.

iii. Copper

- (a) **WQO.** Table III-1 of the Basin Plan contains a hardness-based water quality objective, expressed as a maximum concentration, for dissolved copper applicable to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. Using the minimum upstream receiving water hardness of 53 mg/L to determine the Basin Plan water quality objective, the applicable water quality objective for copper is 7.3 µg/L, as dissolved. Applying the acute conversion factor for copper of 0.96, the applicable water quality objective for copper is 7.6 µg/L, as total recoverable.

The CTR includes hardness-dependent acute and chronic criteria for the protection of freshwater aquatic life for copper. Footnote x for the acute criterion for copper in the CTR at 40 CFR 131.38(b)(1) states, "The State of California has adopted and EPA has approved site specific criteria for the Sacramento River (and tributaries) above Hamilton City; therefore, these criteria do not apply to these waters." Thus, the acute CTR criterion for copper is not applicable. As described further in section IV.C.2.e of this Fact Sheet, the minimum observed effluent hardness was used to adjust the CTR criterion when comparing the MEC to the CTR chronic criterion and the minimum observed receiving water hardness was used when comparing the maximum background receiving water concentrations to the CTR chronic criterion. Using the default conversion factors and the minimum observed effluent hardness, the applicable chronic (4-day average) criterion for the effluent is 10 µg/L, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness of the receiving water, the applicable chronic (4-day average) criterion for the receiving water is 5.4 µg/L, as total recoverable.

- (a) **RPA Results.** The MEC for copper was 31.2 µg/L while the maximum observed upstream receiving water concentration was 5 µg/L. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the chronic CTR criterion for the protection of freshwater aquatic life and the Basin Plan maximum objective for the protection of aquatic life.
- (b) **WQBELs.** This Order contains a final AMEL and MDEL for copper of 3.7 µg/L and 7.6 µg/L, respectively, based on the chronic CTR criterion for the protection of freshwater aquatic life and the applicable Basin Plan water quality objective.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 31.2 µg/L is greater than applicable WQBELs. Time Schedule Order (TSO) No. R5-2010-0905 provided a compliance schedule to achieve compliance with the final effluent limitations for copper by 27 May 2015. TSO No. R5-2014-XXXX replaces TSO No. R5-2010-0905 in order to reference the new NPDES permit but keeps the copper and zinc compliance schedule in TSO No. R5-2010-0905.

iv. Pathogens, BOD₅, TSS

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

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as “...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.” Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by the DPH’s reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

In a letter to the Central Valley 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.

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

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

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

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

- (c) **WQBELs.** In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum for discharges that receive less than 20:1 dilution.

In addition to coliform limitations, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with DPH recommended Title 22 disinfection criteria, weekly average effluent limitations are impracticable for turbidity. This Order includes effluent limitations for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5% of the time within a 24-hour period; and 10 NTU as an instantaneous maximum for discharges that receive less than 20:1 dilution.

This Order contains effluent limitations for BOD₅, total coliform organisms, and TSS consistent with a tertiary level of treatment which are applicable to discharges that receive less than 20:1 dilution and are necessary to protect the beneficial uses of the receiving water. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD₅ and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD₅ and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

This Order contains effluent limitations for BOD₅, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. A tertiary level of treatment during summer and fall discharge period (15 June through 15 November) when the dilution ratio was less than 20:1 was required in the previous permit and the Central Valley Water Board previously considered the factors in Water Code section 13241 in establishing the fall and spring period discharge requirements. However, a tertiary level of treatment for the winter to spring discharge period (16 November through 14 June) when the dilution ratio is less than 20:1 is a new requirement on the discharge, therefore, the Central

Valley Water Board has considered the following factors in Water Code section 13241:

- 1) The past, present and probable future beneficial uses of the Pit River include municipal and domestic supply, agricultural irrigation, agricultural stock watering, hydropower generation, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat.
- 2) The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation activities that would otherwise be unsafe according to recommendations from DPH.
- 3) Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.
- 4) The economic impact of requiring an increased level of treatment has been considered. The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, which includes prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment specific for those pollutants.
- 5) The requirement to provide tertiary treatment for this discharge will not adversely impact the need for housing in the area. The potential for developing housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DPH recommends that, in order to protect the public health, relatively undiluted wastewater effluent must be treated to a tertiary level for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.
- 6) It is the Central Valley Water Board's policy, (Basin Plan, page IV-12.00, Policy 2) to encourage the reuse of wastewater. The Central Valley Water Board requires dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use recycled water is facilitated by providing a tertiary level of wastewater treatment that will allow for a greater variety of uses in accordance with CCR, Title 22.
- 7) The Central Valley Water Board has considered the factors specified in Water Code section 13263, including considering the provisions in

Water Code section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Central Valley Water Board finds, on balance, that these requirements are necessary to protect the beneficial uses of the Pit River, including water contact recreation and irrigation uses.

- (d) **Plant Performance and Attainability.** New or modified control measures are necessary in order to comply with the disinfection and filtration requirements, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the more stringent effluent limitations for total coliform organisms, BOD₅, TSS, and operation specifications for turbidity are new regulatory requirements within this permit. The Discharger submitted an infeasibility analysis on 17 May 2012. As discussed in section IV.E of this Fact Sheet, a compliance schedule and interim limits for BOD₅ and TSS have been included in this Order. In addition, a compliance schedule for compliance with the new operation specification for turbidity has been included in this Order. A compliance schedule for compliance with the disinfection specification, including interim total coliform organisms limitations, are established in TSO No. R5-2014-XXXX.

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

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

USEPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBELs are required for specific pollutants for all*

facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).” USEPA’s TSD also recommends that factors other than effluent data should be considered in the RPA, “When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.” (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Based on 248 samples taken from 3 February 2009 to 29 October 2013, the maximum pH reported was 7.8 and the minimum was 6.5. Although the Discharger has proper pH controls in place, the pH for the Facility’s influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan’s numeric objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.

- (c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the pH of the effluent is consistently between 6.5 to 8.5. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vi. **Salinity**

- (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, live stock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an

agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-9. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective ¹	Secondary MCL ³	USEPA NAWQC	Effluent	
				Average	Maximum
EC (µmhos/cm)	Varies ²	900, 1600, 2200	N/A	758	880
TDS (mg/L)	Varies	500, 1000, 1500	N/A	507	614
Sulfate (mg/L)	Varies	250, 500, 600	N/A	Not Available	Not Available
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	56	63.6

¹ Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan., However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

² Maximum calendar annual average.

³ The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

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 Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The most limiting agricultural water quality goal to interpret the narrative chemical constituents 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 water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers. However, the agricultural water quality goal is not a site-specific goal or objective, but rather a general measure to protect salt-sensitive crops. Site specific levels of chloride for the receiving waters are necessary to interpret the narrative chemical constituent’s objective for protection of agricultural supply.

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 Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The most limiting agricultural water quality goal may be as low as 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). However, the 700 µmhos/cm

agricultural water quality goal is not a site-specific goal or objective, but rather a general measure of electrical conductivity that was 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 under certain soil and climate conditions. Most other crops can tolerate higher EC concentrations without harm. Site specific levels of EC for the receiving waters to interpret the narrative chemical constituent's objective in the Basin Plan for protection of agricultural supply are necessary. Overall, however, as the salinity of agricultural irrigation water increases, more crops are potentially harmed by the EC, or must be maintained at levels in which growers do not need to take 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 Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The most limiting agricultural water quality goal may be as low as 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. However, the 450 mg/L water quality goal is not a site-specific goal, but rather a general measure of TDS that was determined to protect 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. Site specific levels of TDS for the receiving waters to interpret the narrative chemical constituent's objective are necessary.

(b) **RPA Results.**

- 1) **Chloride.** Chloride concentrations in the effluent ranged from 52 mg/L to 64 mg/L, with an average of 56 mg/L. These levels do not exceed the secondary MCLs for chloride. Background concentrations in the North and South Forks of the Pit River ranged from 1.5 mg/L to 8.9 mg/L, with an average of 3.0 mg/L, for six samples collected by the Discharger from 9 May 2011 through 11 August 2011. Chloride in the discharge does not demonstrate reasonable potential to cause or

contribute to an in-stream excursion above the Secondary MCL of 250 mg/L.

- 2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average effluent EC of 758 $\mu\text{mhos/cm}$, with a range from 660 $\mu\text{mhos/cm}$ to 880 $\mu\text{mhos/cm}$. The background receiving water EC averaged 309 $\mu\text{mhos/cm}$ and the downstream receiving water EC averaged 290 $\mu\text{mhos/cm}$. According to the October 2004 Pit River Watershed Alliance's Upper Pit River Watershed Assessment, agricultural land use of the Modoc county portion of the Pit River basin consists of the growing of alfalfa, grain hay, and meadow hay, and use as irrigated pasture and dryland pasture. Staff is not aware of any production of salt-sensitive crops in the local area and concluded there is no justification to apply salt-sensitive crop objectives to the discharge. The effluent levels do not exceed the secondary MCL for EC. In addition, receiving water sampling shows that the discharge is not causing an increase in EC concentrations in the downstream receiving water. EC in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the secondary MCL of 900 $\mu\text{mhos/cm}$.
- 3) **Sulfate.** Sampling for effluent or receiving water sulfate was not conducted over the term of Order No. R5-2006-0103 and, consequently, sulfate data was not available for conducting the RPA.
- 4) **Total Dissolved Solids.** 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, when sampling at least quarterly. TDS is not a priority pollutant and the RPA procedures in section 1.3 of the SIP are not required. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average TDS concentrations. The annual average effluent TDS concentrations for 2008, 2009, 2010, and 2011 are 491, 467, 497, and 563 mg/L. Thus, the maximum calendar annual average effluent concentration for TDS was 563 mg/L. No receiving water TDS data is available. As no corresponding receiving water TDS data is available, the Central Valley Water Board must assume there is no assimilative capacity for TDS in the receiving water and concludes that the discharge exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL for TDS.

According to the October 2004 Pit River Watershed Alliance's Upper Pit River Watershed Assessment, agricultural land use of the Modoc county portion of the Pit River basin consists of the growing of alfalfa, grain hay, and meadow hay, and use as irrigated pasture and dryland pasture. Staff is not aware of any production of salt-sensitive crops in the local area and concluded there is no justification to apply salt-sensitive crop objectives to the discharge.

- (c) **WQBELs.** Effluent limitations based on the MCL or the Basin Plan would likely require construction and operation of a reverse osmosis treatment

plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, “...*the State Board takes official notice [pursuant to Title 23 of California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City’s municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects.*” The State Water Board states in that Order, “*Although the ultimate solution to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta.*” The State Water Board goes on to say, “*Construction and operation of reverse osmosis facilities to treat discharges...prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach.*”

The Central Valley Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Central Valley Water Board meeting, Board Member Dr. Karl Longley recommended that the Central Valley Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, “*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board’s policy to actively participate in policy development.*”

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, since the Discharger discharges to the Pit River, a tributary of the Sacramento River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters.

In order to ensure that the Discharger will continue to control the discharge of salinity, 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. Effluent and receiving water monitoring for chloride, EC, sulfate, and total dissolved solids are also required.

- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the maximum TDS annual effluent concentration of 563 mg/L is greater than applicable WQBEL. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. The Discharger submitted a compliance schedule justification in accordance with State Water Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* on 17

May 2012. As discussed in section IV.E of this Fact Sheet, a compliance schedule has been included in this Order.

vii. **Zinc**

- (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.” Table III-1 of the Basin Plan contains a hardness-based water quality objective, expressed as a maximum concentration, for dissolved zinc applicable to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. Using the minimum upstream receiving water hardness of 53 mg/L to determine the Basin Plan water quality objective, the applicable water quality objective for zinc is 20 µg/L, as dissolved. Applying the acute conversion factor for zinc of 0.96, the applicable water quality objective for zinc is 21 µg/L, as total recoverable.

The CTR includes hardness-dependent acute and chronic criteria for the protection of freshwater aquatic life for zinc. Footnote x for the acute criterion for zinc in the CTR at 40 CFR 131.38(b)(1) states, “*The State of California has adopted and EPA has approved site specific criteria for the Sacramento River (and tributaries) above Hamilton City; therefore, these criteria do not apply to these waters.*” Thus, the acute CTR criterion for zinc is not applicable. As described further in section IV.C.2.e of this Fact Sheet, the minimum observed effluent hardness was used to adjust the CTR criterion when comparing the MEC to the CTR chronic criterion and the minimum observed receiving water hardness was used when comparing the maximum background receiving water concentrations to the CTR chronic criterion. Using the default conversion factors and the minimum observed effluent hardness, the applicable chronic (4-day average) criterion for the effluent is 128 µg/L, as total recoverable. Using the default conversion factors and reasonable worst-case measured hardness of the receiving water, the applicable chronic (4-day average) criterion for the receiving water is 70 µg/L, as total recoverable.

- (b) **RPA Results.** The MEC for zinc was 63.6 µg/L (as total recoverable) while the maximum observed upstream receiving water concentration was 9.2 µg/L (as total recoverable). Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan objective for the protection of freshwater aquatic life.
- (c) **WQBELs.** This Order contains a final AMEL and MDEL for zinc of 13 µg/L and 21 µg/L, respectively, based on the Chronic CTR criterion for the protection of freshwater aquatic life and the applicable Basin Plan water quality objective.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 63.6 µg/L is greater than applicable WQBELs. TSO No. R5-2010-0905 provided a compliance schedule to achieve compliance with the final effluent limitations for zinc by 27 May 2015. TSO No. R5-2014-XXX replaces TSO No. R5-2010-0905 in order to reference the new NPDES

permit but keeps the copper and zinc compliance schedule in TSO No. R5-2010-0905.

4. WQBEL Calculations

- a. This Order includes WQBELs for aluminum, BOD₅ (for discharges receiving less than 20:1 dilution), chlorine residual, copper, electrical conductivity, pH, total coliform organisms, TSS (for discharges receiving less than 20:1 dilution), and zinc. 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:

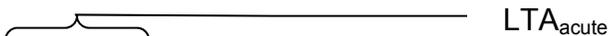
$$\begin{array}{ll}
 ECA = C + D(C - B) & \text{where } C > B, \text{ and} \\
 ECA = C & \text{where } C \leq B
 \end{array}$$

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.



$$AMEL = mult_{AMEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})]$$

$$MDEL = mult_{MDEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})] \quad \underbrace{\hspace{10em}}_{LTA_{chronic}}$$

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

where:

$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL

$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL

M_A = statistical multiplier converting acute ECA to LTA_{acute}

M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

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

Table F-10. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) – <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--
	lbs/day ¹	42	63	83	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids – <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--
	lbs/day ¹	42	63	83	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	3.7	--	7.6	--	--
Zinc, Total Recoverable	µg/L	13	--	21	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	374	200 ²	750	--	--
Chlorine, Total Residual	mg/L	--	0.011 ³	0.019 ⁴	--	--
Total Dissolved Solids	mg/L	500 ²	--	1,500	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Coliform Organisms – <i>Applicable when <20:1 dilution is available</i>	MPN/100 mL	--	2.2 ⁵	23 ⁶	--	240
Total Coliform Organisms – <i>Applicable when >20:1 dilution is available</i>	MPN/100 mL	--	23 ⁵	240 ⁶	--	--

¹ Based on a design flow of 0.5 mgd.
² Applied as an annual average effluent limitation.
³ Applied as a 4-day average effluent limitation.
⁴ Applied as a 1-hour average effluent limitation.
⁵ Applied as a 7-day median effluent limitation.
⁶ Total coliform organisms shall not exceed more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

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

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page III-8.00) The Basin Plan also states that, “...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...”.

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Acute whole effluent toxicity is not a priority pollutant. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. USEPA’s September 2010 NPDES Permit Writer’s Manual, page 6-30, states, “*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*” Acute toxicity effluent limits are required to ensure compliance with the Basin Plan’s narrative toxicity objective.

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." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

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

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

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) Based on chronic WET testing performed by the Discharger on 1 April 2011 and 9 August 2011, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Chronic toxicity results are presented in Table F-11 below.

Table F-11. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow <i>Pimephales promelas</i>		Water Flea <i>Ceriodaphnia dubia</i>		Green Algae <i>Selenastrum capricornutum</i>
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
	1 April 2011	>1	>1	1	1
9 August 11	1	1	--	--	1.33

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires annual chronic WET monitoring 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 Region¹ that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, *“In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.”* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan’s narrative toxicity objective, as allowed under 40 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 Limitation Considerations

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.

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)

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

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 average weekly effluent limitations for two reasons. *“First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge’s potential for causing acute toxic effects would be missed.”* (TSD, pg. 96) This Order uses maximum daily effluent limitations in lieu of average weekly effluent limitations for aluminum, copper, and zinc 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, pH, and total coliform organisms, average weekly effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

For effluent limitations based on Primary and Secondary MCLs, except nitrate and nitrite, 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 average weekly and average monthly effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for settleable solids. The effluent limitations for these pollutants are less stringent than those in Order No. R5-2006-0103. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- a. CWA section 402(o)(1) and 303(d)(4). CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits “except in compliance with Section 303(d)(4).” CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.
 - i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDLs or WLAs will assure the attainment of such water quality standards.

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

The Pit River is considered an attainment water for settleable solids because the receiving water is not listed as impaired on the 303(d) list for this constituent.¹ As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of the effluent limitations for settleable solids from Order No. R5-2006-0103 meets the exception in CWA section 303(d)(4)(B).

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

As described further in section IV.C.3.b of this Fact Sheet, based on updated monitoring data that was not available at the time Order No. R5-2006-0103 was issued, settleable solids do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. 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 removal of these effluent limitations does not violate anti-backsliding requirements.

Order No. R5-2006-0103 contained a monthly median effluent limitation for turbidity of 5 NTU. A letter dated 24 February 2009 from the Central Valley Water Board clarified that the limitation was only applicable for discharges where the effluent dilution ratio is less than 20:1 and the discharge dates are 15 June through 15 November. Monitoring data indicates that the discharge has not adversely impacted turbidity in the receiving water. This Order contains operational turbidity specifications in lieu of effluent limitations. The revised operational specifications for turbidity are not less stringent than the effluent limitations in Order No. R5-2006-0103, with the inclusion of a more stringent requirement for an instantaneous maximum limitation at any time. (See Special Provisions VI.C.4.a for turbidity specifications.) These revisions are consistent with State regulations implementing recycled water requirements.

Furthermore, the performance-based specification in this Order is an equivalent limit that is not less stringent than Order No. R5-2006-0103's effluent turbidity limitation and therefore does not constitute backsliding.

The removal of the effluent turbidity limitation and subsequent replacement with an operation specification for turbidity is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order No. R5-2006-0103 and therefore does not allow new degradation.

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

4. Antidegradation Policies

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.

This Order includes less stringent receiving water limitations for pH and turbidity. The less stringent receiving water limitations reflect recent amendments to the Basin Plan objectives and will not allow a degradation of water quality. Further discussion is provided in the Fact Sheet section V.A.1.a and b.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on flow, BOD₅ (for discharges receiving greater than 20:1 dilution), and TSS (for discharges receiving greater than 20:1 dilution). The WQBELS consist of restrictions on aluminum, BOD₅ (for discharges receiving less than 20:1 dilution), chlorine residual, copper, electrical conductivity, pH, total coliform organisms, TSS (for discharges receiving less than 20:1 dilution), and zinc. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. The rationale for including these limitations is explained in the Fact Sheet. In addition, the Central Valley Water Board has considered the factors in Water Code section 13241 in establishing these requirements.

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

**Summary of Final Effluent Limitations
 Discharge Point No. 001**

Table F-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Average Dry Weather Flow	mgd	0.5 ²	--	--	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C) – <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--	TTC/CFR
	lbs/day ³	42	63	83	--	--	
	% Removal	85	--	--	--	--	
Biochemical Oxygen Demand (5-day @ 20°C) – <i>Applicable when >20:1 dilution is available</i>	mg/L	30	45	60	--	--	CFR
	lbs/day ³	125	187	250	--	--	
	% Removal	85	--	--	--	--	
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids – <i>Applicable when <20:1 dilution is available</i>	mg/L	10	15	20	--	--	TTC/CFR
	lbs/day ³	42	63	83	--	--	
	% Removal	85	--	--	--	--	
Total Suspended Solids – <i>Applicable when >20:1 dilution is available</i>	mg/L	30	45	60	--	--	CFR
	lbs/day ³	125	187	250	--	--	
	% Removal	85	--	--	--	--	
Priority Pollutants							
Copper, Total Recoverable	µg/L	3.7	--	7.6	--	--	BP
Zinc, Total Recoverable	µg/L	13	--	21	--	--	BP
Non-Conventional Pollutants							
Acute Toxicity	% Survival	--	--	⁴	--	--	BP
Aluminum, Total Recoverable	µg/L	374	200 ⁵	750	--	--	NAWQC/ SEC MCL
Chlorine, Total Residual	mg/L	0.011 ⁶	--	0.019 ⁷	--	--	NAWQC
Chronic Toxicity	TUc	--	--	⁸	--	--	BP

Parameter	Units	Effluent Limitations					Basis ¹
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Total Dissolved Solids	mg/L	500 ⁵	--	1,500	--	--	SEC MCL
Total Coliform Organisms – <i>Applicable when <20:1 dilution is available</i>	MPN/100 mL	--	2.2 ⁹	23 ¹⁰	--	240	BP
Total Coliform Organisms – <i>Applicable when >20:1 dilution is available</i>	MPN/100 mL	--	23 ⁹	240 ¹⁰	--	--	BP

¹ DC – Based on the design capacity of the Facility
 BP – Based on water quality objectives contained in the Basin Plan
 TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant
 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

² The average dry weather flow shall not exceed 0.5 mgd. The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (i.e., July, August, and September).

³ Based on a design flow of 0.5 mgd.

⁴ 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%

⁵ Applied as an annual average effluent limitation.

⁶ Applied as a 4-day average effluent limitation.

⁷ Applied as a 1-hour average effluent limitation.

⁸ There shall be no chronic toxicity in the effluent discharge.

⁹ Applied as a 7-day median effluent limitation.

¹⁰ Total coliform organisms shall not exceed more than once in any 30-day period.

E. Interim Effluent Limitations

- 1. Compliance Schedule for Aluminum, BOD₅, TDS, and TSS.** The permit limitations for aluminum, BOD₅, and TSS are more stringent than the limitations previously imposed. The new limitations for aluminum are based on a new interpretation of the narrative objective for toxicity. The Discharger 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, BOD₅, TDS, and TSS is established in the Order.

A compliance schedule is necessary because the Discharger must implement actions, including designing and constructing facilities and securing financing, to comply with the more stringent permit limitations. Construction includes related activities including the purchase of property needed for land discharge completion of the environmental studies

and reviews, identification of social and environmental mitigation, and purchase and installation of necessary equipment.

The Discharger has made diligent efforts to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts.

The Discharger upgraded several processes at the Facility and added others to meet the requirements imposed by various effluent limitations in WDR Order R5-2006-0103. Some of the improvement did not operate properly and the Facility was in significant non-compliance with WDR Order R5-2006-0103 from July 2008 through September 2009. The Discharger initiated an Interim Operations Plan (IOP) in October which significantly reduced the frequency of effluent violations. The IOP relies heavily on chemicals to treat the wastewater. Using chemicals to treat the wastewater is significantly more expensive than typical biological/mechanical processes common to most wastewater treatment facilities. As a long term solution, the Discharger notified Water Board staff of its intent to cease the discharge to the Pit River by late 2015. This Order contains even more stringent effluent limitations, some of which cannot be immediately met by the Discharger. Ceasing the discharge to the Pit River would bring the Facility into compliance with the discharge specifications in this Order.

The compliance schedule is as short as possible. The Discharger is currently pursuing concepts and options for various forms of land application to eliminate the NPDES discharge. Planning, engineering, property acquisition and funding a major Facility modification is a substantial undertaking especially for a small community in a remote setting. The compliance schedules in this Order are shorter than ordinary for similar projects as the schedules account for work already completed. The schedules also acknowledge that certain new requirements are justifiably scheduled until after the anticipated cessation of surface water discharge as they would not be required in a land discharge system.

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 through until the final limitations take effect. (As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for aluminum. In addition, the Discharger shall submit an engineering treatment feasibility study) and prepare and implement a pollution prevention plan that is in compliance with Water Code 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 Limits for Aluminum, BOD₅, TDS, and TSS.** The Compliance Schedule Policy requires the Central Valley 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 one year. Interim effluent limitations must be based on current treatment plant performance or previous final permit limitations, whichever is more stringent. When feasible, interim limitations must correspond with final permit effluent limitations with respect to averaging bases (e.g., AMEL, MDEL, average monthly, etc.) for effluent limitations for which compliance protection is intended.

The interim limitations for BOD₅ and TSS for discharges that receive less than 20:1 dilution are based on the limitations contained in Order No. R5-2006-0103, which are

based on secondary treatment standards. The interim limitations for TDS and aluminum 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. Similarly, an interim AMEL is based on normally distributed data where 95% of the data points will lie within 2.0 standard deviations of the mean.

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) and 2.13 times the MEC to obtain the average monthly interim limitation (assuming one sample per month). For aluminum, which has a final annual average effluent limitation, the interim annual average effluent limitation is established as the maximum observed annual average for a calendar year, which was 479 µg/L.

The Central Valley 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 TDS:

Table F-13. Interim Effluent Limitation Calculation Summary

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation (Average Monthly)	Interim Limitation (Maximum Daily)
Aluminum, Total Recoverable	µg/L	1,280	479	694	3	2,730	3,980
Total Dissolved Solids (TDS)	mg/L	614	507	46	15	604 ¹	1500 ²

¹ Annual average limitation. Limitation calculated as mean + 2.11 standard deviations of individual datum.

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation (Average Monthly)	Interim Limitation (Maximum Daily)
-----------	-------	--------------------------------	------	--------------------	-------------------	--------------------------------------	------------------------------------

² Maximum daily limitation set as the short term maximum value for the TDS secondary MCL.

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

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 maximum contaminant levels (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, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity and turbidity.
 - a. **pH.** Order No. R5-2006-0103 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).

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. R5-2006-0103 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).

This Order includes operational specifications that require the Discharger to operate the treatment system to insure that turbidity shall not exceed 2 NTU as a daily average, and 5 NTU more than 5 percent of the time within a 24 hour period, and 10 NTU, at any time for discharges that receive less than 20:1 dilution. Because this Order limits the average daily discharge of turbidity to 2 NTU, the Order will be protective of the receiving water under all natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. 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 Regional

Water Board finds that the relaxation of the turbidity receiving water limitation 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

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 Regional 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., BOD₅ and TSS reduction requirements). Sample types and monitoring frequencies for flow, BOD₅, and TSS have been retained from Order No. R5-2006-0103.

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. Effluent monitoring frequencies and sample types for flow, BOD₅, copper, electrical conductivity, hardness, pH, temperature, TDS, TSS, total coliform organisms, turbidity, and zinc have been retained from Order No. R5-2006-0103 to determine compliance with effluent limitations for these parameters.
3. Monitoring data collected over the term of Order No. R5-2006-0103 for cyanide did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for cyanide have not been retained from Order No. R5-2006-0103. This Order will continue to require monitoring for cyanide as a component of

priority pollutant monitoring, which is required at a frequency of twice per year during the third year of the permit term.

4. Monitoring data collected from 1 June 2008 through 31 May 2011 indicates that aluminum has reasonable potential to cause or contribute to an exceedance of applicable water quality criteria. Therefore, this Order establishes monthly monitoring for aluminum.
5. The Pit River from the confluence of the North and South Forks to Shasta Lake is listed on the 2010 303(d) list as impaired for nutrients, organic enrichment/low dissolved oxygen, and temperature. Therefore, this Order includes effluent nutrient (ammonia, nitrite, and nitrate) and temperature monitoring to evaluate if the discharge is contributing to the impairment.
6. Monitoring data collected from 1 June 2008 through 31 May 2011 included results indicating that total residual chlorine in the effluent exhibits reasonable potential to exceed applicable water quality criteria. Chlorine is an acutely toxic constituent that can be monitored continuously. Continuous monitoring is necessary to determine compliance with the 1-hour average effluent limitation and to prevent toxicity to aquatic life.
7. As discussed in section IV.C.3.c of this Fact Sheet, due to the limited amount of data available, it is uncertain whether aldrin, arsenic, bis (2-ethylhexyl) phthalate, carbon tetrachloride, dichlorobromomethane, and mercury are truly present in the effluent at concentrations that have a reasonable potential to cause or contribute to an exceedance of applicable water quality criteria. To collect the data necessary to determine the prevalence in the effluent, this Order establishes quarterly monitoring and requires the Discharger to conduct a constituent study to determine potential sources of these constituents.
8. This Order establishes monthly monitoring for nitrate and nitrite in order to characterize the discharge and to assure the treatment process adequately nitrifies and denitrifies the waste stream.
9. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2006-0103, and was used to conduct a meaningful RPA. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires monitoring for priority pollutants and other constituents of concern twice during the third year of the permit term in order to collect data to conduct an RPA for the next permit renewal. See the *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C. for more detailed requirements related to performing priority pollutant monitoring.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order No. R5-2006-0103, quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** As discussed further in section IV.C.5.b of this Fact Sheet, the discharge exhibits reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Therefore, this Order increases the monitoring frequency from once per permit term to annually 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. This Order retains sample types and monitoring frequencies for the receiving water upstream and downstream of the discharge for flow, pH, dissolved oxygen, electrical conductivity, hardness, and temperature.
- c. Order No. R5-2006-0103 established receiving water monitoring for copper and zinc to provide information on the assimilative capacity in the receiving water. The Discharger evaluated the applicability of mixing zones and dilution credits in the Pit River; however, the preliminary findings indicated that a mixing zone and dilution credits are not appropriate. Therefore, this Order discontinues receiving water monitoring for copper and zinc.
- d. Consistent with the effluent monitoring requirements, monitoring for priority pollutants and other constituents of concern upstream of Discharge Point No. 001 at Monitoring Location RSW-001N and RSW-001S is required twice during the third year of the permit term to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The hardness (as CaCO₃) 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. See the *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C. for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Biosolids Monitoring

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

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

3. Effluent and Receiving Water Characterization Study

An effluent and receiving water monitoring study is required to ensure adequate information is available for the next permit renewal. Twice during the third year of this permit term, the Discharger is required to conduct monitoring of the effluent at Monitoring Location EFF-001 and of the receiving water at Monitoring Location RSW-001N and

RSW-001S for all priority pollutants and other constituents of concern as described in the *Effluent and Receiving Water Characterization Study*, Attachment E, Section IX.C.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

1. Reopener Provisions

- a. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). 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 CTR criteria for applicable priority pollutant inorganic constituents. 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 zinc. 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. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives, including aldrin, arsenic, bis (2-ethylhexyl) phthalate, carbon tetrachloride, dichlorobromomethane, and mercury. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for these constituents if after review of the study results it is determined that the discharge has

reasonable potential to cause or contribute to an exceedance of a water quality objective.

- d. **Site-specific Ammonia Criteria Study.** If, after review of the Study results, it is determined that the ammonia in the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective, this Order may be reopened and effluent limitations added for ammonia.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00. Based on whole effluent chronic toxicity testing performed by the Discharger from June 2008 through August 2011, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop an initial investigative TRE Workplan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been demonstrated.

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

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

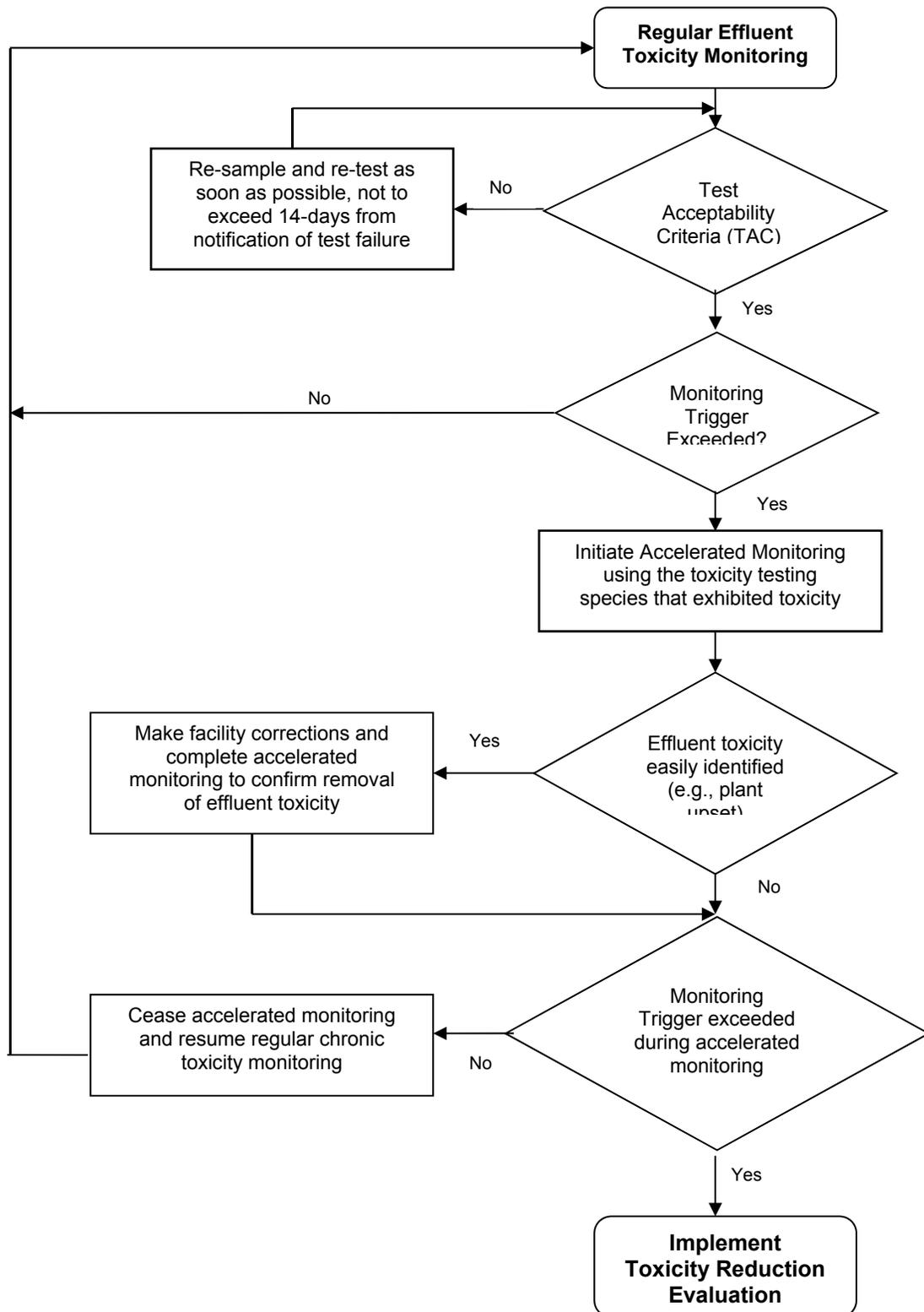
The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water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

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

TRE Guidance. The Discharger is required to prepare an initial investigative 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. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives, including aldrin, arsenic, bis (2-ethylhexyl) phthalate, carbon tetrachloride, dichlorobromomethane, and mercury, as described further in section IV.C.3.c of this Fact Sheet. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. If after a review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.
- c. **Site-specific Ammonia Criteria Study.** USEPA's 2013 recommended criteria for ammonia are dependent on temperature and pH. In addition, the criteria may be recalculated to account for the absence of freshwater mussels; which are very sensitive to ammonia. There are site-specific receiving water issues, absent the discharge, that make it difficult at this time to determine the appropriate criteria to apply for purposes of evaluating whether ammonia in the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. These issues include, but are not limited to, elevated receiving water temperature (i.e., the receiving water is 303(d) listed as impaired for temperature), elevated pH in the upstream water bodies (i.e., both the North and South Fork of the Pit River are 303(d) listed for elevated pH), and evidence of the presence of unionid mussels approximately 20 miles upstream and downstream of the discharge location. The Facility is a POTW and the discharge contains ammonia, however, in this case the receiving water has impairment issues related to pH and temperature, which, if applied directly to the discharge, would potentially result in recommended ammonia criteria lower than what is typically achievable by even the most advanced POTWs that actively nitrify and denitrify their wastewater. Therefore, this Order requires the Discharger to perform a study to determine the applicable ammonia criteria, given the site-specific issues of the receiving water. The study shall consider seasonal variation of receiving water conditions that may affect criteria (e.g., pH, temperature) and effluent and receiving water mixing dynamics. A workplan for the study must be submitted for Executive Officer approval **within 9 months** of the effective date of this Order. A report on the findings of the study shall be submitted by 180 days prior to the permit expiration date.

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

- a. **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 the Pit River.

4. **Construction, Operation, and Maintenance Specifications**

- a. **Turbidity Operational Requirements.** Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance with effluent limitations for total coliform organisms. The tertiary treatment process is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period, and an

instantaneous maximum of 10 NTU for discharges that receive less than 20:1 dilution. Turbidity specifications are included as operating criteria in section VI.C.4.a of this Order to ensure that adequate disinfection of wastewater is achieved.

- b. Operations specifications for wastewater to be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria, CCR, Title 22, division 4, chapter 3 (Title 22), or equivalent for discharges during critical low flow periods (<20:1 receiving water to effluent dilution) are necessary in accordance with a 1 July 2003 DPH guidance memo on wastewater treatment levels for potential recreation and reclamation use. The effluent shall be disinfected in accordance with the total coliform organisms effluent limitations set forth in this Order, which reflect this standard and are equivalent to “disinfected tertiary recycled water” disinfection requirements, however; wastewater treated for discharge need not comply with the CT1 requirement specified in Title 22 Section 60301.230(a) or the disinfection process outlined in Section 60301.230(b) for discharges that receive less than 20:1 dilution. The Discharger cannot immediately comply with the disinfection specification for the critical flow period and a compliance schedule for compliance with the total coliform organism effluent limitations, along with interim effluent limitations, is established in TSO No. R5-2014-xxxx.
- c. Consistent with Order No. R5-2006-0103, this Order requires that the treatment, storage, and disposal facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements

Consistent with Order No. R5-2006-0103, 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.

The design flow of the Alturas WWTP is less than 5 mgd, and the facility does not receive discharges from industrial users. Under these conditions, the Discharger is not required to develop a pretreatment program pursuant to USEPA regulations at 40 CFR Part 403.

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 one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

¹ The product for the total chlorine residual multiplied by the modal contact time measured at the same point.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. The Discharger is enrolled under State Water Board General Order No. 2006-0003-DWQ.

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 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 – Not Applicable

7. Compliance Schedules

- a. The Discharger submitted a request, and justification, dated 17 May 2012, for a compliance schedule for the constituents in which the Discharger cannot meet the final effluent limitations. The compliance schedule justification included all items specified in the Compliance Schedule Policy. This Order establishes a compliance schedule for the new, final, WQBELs for aluminum, BOD5, TSS, and the turbidity operation specification and requires full compliance **5 years from the effective date of this Order.**
- b. A pollution prevention plan for aluminum is required in this Order per Water Code section 13263.3(d)(1)(C). In accordance with Water Code section 13263.3(d)(3), the pollution prevention plan for aluminum shall, at a minimum, meet the following requirements:
 - 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.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit written comments and recommendations. Notification was provided through physical posting at the facility and Alturas City Hall, and by internet posting on the Central Valley Water Board's website.

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive 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 **14 February 2014**.

C. Public Hearing

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

Date: 27 and 28 March 2014
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 heard testimony pertinent to the discharge, WDR's, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

D. Reconsideration of Waste Discharge Requirements

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

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

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

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (530) 224-4845.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jeremy Pagan at (530) 224-4850.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aldrin	µg/L	0.022	<0.003	ND	3.0	--	0.00013	0.00014	ND	--	Undetermined
Aluminum, Total Recoverable	µg/L	1,280	737	87	750 ¹	87 ²	--	--	--	200	Yes
Arsenic, Total Recoverable	µg/L	15	1.2	10	340	150	--	--	--	10	Undetermined
Bis (2-ethylhexyl) Phthalate	µg/L	5	<2	1.8	--	--	1.8	5.9	--	4	Undetermined
Carbon Tetrachloride	µg/L	3.4	<0.1	0.25	--	--	0.25	4.4	--	0.5	Undetermined
Copper, Total Recoverable	µg/L	31.2	5	5.4	³	10 ⁴ /5.4 ⁵	1,300	--	7.6	1,000	Yes
Cyanide, Total (as CN)	µg/L	<1.0	2.0	5.2	22	5.2	700	220,000	--	150	No
Dichlorobromomethane	µg/L	0.6	<0.1	0.56	--	--	0.56	46	--	80	Undetermined
Total Dissolved Solids	mg/L	563 ⁶	NA	500	--	--	--	--	--	500	Yes
Iron, Total Recoverable	µg/L	124 ⁷	470 ⁷	300	--	--	--	--	--	300	No
Mercury, Total Recoverable	µg/L	0.055	0.00355	0.050	--	--	0.050	0.051	--	2.0	Undetermined
Electrical Conductivity	µmhos/cm	880	NA	900	--	--	--	--	--	900	No
Zinc, Total Recoverable	µg/L	63.6	9.2	21	³	128 ⁴ /70 ⁵	--	--	21	5,000	Yes

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) Chronic criterion based on USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
 (3) Per Footnote x for the acute criterion for copper in the CTR at 40 CFR 131.38(b)(1), the site-specific objectives for the Sacramento River above Hamilton City in Table III-1 of the Basin Plan applies in lieu of the acute CTR criterion.
 (4) Criterion to be compared to the maximum effluent concentration.
 (5) Criterion to be compared to the maximum upstream receiving water concentration.
 (6) Highest annual average.
 (7) Represents the maximum observed annual average concentration for comparison with the MCL.

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			HH Calculations ¹			Aquatic Life Calculations ¹											Final Effluent Limitations	
		HH	CMC	CCC	ECA _{HH} = AMEL _{HH}	AMEL/MDEL 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	750 ⁵	200	2.01	751	750	0.32	241	750	0.53	396	241	1.55	374	3.11	750	374	750
Copper, Total Recoverable	µg/L	200	7.6	10 ² /5.4 ³	200	2.04	407	7.55 ³	0.31	2.36	5.42 ³	0.52	2.81	2.36	1.57	3.71	3.20	7.56	3.7	7.6
Zinc, Total Recoverable	µg/L	2,000	21	128 ³ /70 ⁴	2,000	1.57	3,139	21 ⁴	0.49	10	70 ⁴	0.69	48	10	1.30	13	2.04	21	13	21

- ¹ As described in section IV.C.2.c 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.e of the Fact Sheet (Attachment F).
- ⁵ Based on NAWQC acute criterion.