CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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ORDER R5-2013-XXXX
NPDES NO. CA0084824

WASTE DISCHARGE REQUIREMENTS FOR THE NORTH YUBA WATER DISTRICT FORBESTOWN WATER TREATMENT PLANT BUTTE COUNTY

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

Table 1. Discharger Information

Discharger	**North Yuba Water District**
Name of Facility	**Forbestown Water Treatment Plant**
Facility Address	**118 Buckeye Drive**
	Forbestown, CA 95941
	Butte County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **minor** discharge.	

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

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Filter backwash	39º 30’ 54” N	121º 16’ 09” W	On-site Storage Reservoir/Unnamed tributary of New York Flat Creek

Table 3. Administrative Information

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

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

_____
PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	North Yuba Water District
Name of Facility	Forbestown Water Treatment Plant
Facility Address	118 Buckeye Drive
	Forbestown, CA 95941
	Butte County
Facility Contact, Title, and Phone	Jeff Maupin, General Manager, (530) 675-2567 Eric Manley, Treatment Plant Operator (530) 675-2971
Mailing Address	8691 LaPorte Rd., P.O. Box 299, Brownsville CA 95919
Type of Facility	Water Treatment Plant
Facility Design Flow	0.070 mgd

II. FINDINGS

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

A. Background. North Yuba Water District (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2007-0078 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084824. The Discharger submitted a Report of Waste Discharge, dated 27 April 2011**,** and after several supplemental reports, with the last being submitted January 24 2012, the report was deemed complete. The Discharger applied for a NPDES permit renewal to discharge up to 0.070 million gallons per day (mgd) of treated wastewater from Forbestown Water Treatment Plant**,** hereinafter Facility.

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

B. Facility Description. The Discharger owns and operates a water treatment plant. Raw water is siphoned for treatment directly from the Forbestown Ditch or pumped from the Facility’s 30.9 acre-feet capacity raw water storage reservoir that is supplied by the Forbestown Ditch. The treatment system consists of prechlorination, coagulation, clarification, filtration, and post-chlorination of the finished water. The Facility’s wastewater design flow is 0.070 (mgd). Filter backwash is discharged to one of two settling ponds. The supernatant from the settling ponds discharges into the raw water reservoir (Discharge Point No. 001); the raw water reservoir has an overflow pipe which discharges a mixture of filter backwash and raw water to an unnamed tributary of New York Flat Creek, a water of the United States, and a tributary to Dry Creek and the Yuba River (Englebright Dam to Feather River) with the Yuba River Hydrologic Unit, Mildred Lake Hydrologic Subarea (517.13). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

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

E. 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.

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet

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

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

H. Water Quality Control Plans. The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised 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. The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." Table II-1 of the Basin Plan identifies the beneficial uses of certain specific water bodies. The Basin Plan does not specifically identify beneficial uses for New York Flat Creek, but does identify present and potential uses in Table II-1 for the Yuba River (Englebright Dam to Feather River) to which New York Flat Creek, via Dry Creek, is tributary. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to New York Flat Creek are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	On-site storage reservoir and Unnamed Tributary of New York Flat Creek	Table II-1 of the Basin Plan: 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); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm and cold (SPWN);and Wildlife habitat (WILD. State Water Board Resolution No. 88-63: Municipal and domestic supply (MUN). Groundwater: Municipal and domestic water supply (MUN); Industrial service supply (IND), Industrial process supply (PRO), and Agricultural supply (AGR).

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*." New York Flat Creek is not listed as a WQLS in the 303(d) list of impaired water bodies. In 2007, the Central Valley Water Board adopted an

amendment to the Basin Plan that addressed impairments within the Sacramento River and Feather River Basins by promulgating a water quality objective for diazinon and chlorpyrifos as well as an implementation program designed to ensure compliance with the new water quality objective. Per this implementation program, all NPDES permits for discharges (both direct and indirect) to the Sacramento or Feather Rivers must contain an effluent limit equivalent to the diazinon and chlorpyrifos water quality objective. This Order requires the Discharger to monitor the effluent for diazinon and chlorpyrifos, and includes limitations for diazinon and chorpyrifos.

Requirements of this Order implement the Basin Plan.

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

J. State Implementation Policy. On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed 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 Central Valley Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is

as short as possible to achieve compliance with the effluent limit based on the objective or criteria.

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

Where a compliance schedule for a final effluent limitation exceeds 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.

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

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and total suspended solids. The WQBELs consist of restrictions on pH, settleable solids, total residual chlorine, and aluminum. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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

N. Antidegradation Policy. 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board

Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R5-2007-0078.

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

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

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that 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 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.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. Some special provisions require submittal of technical reports. All technical reports are required in accordance with Water Code section 13267. The rationale for the special provisions and need for technical reports required in this Order is provided in the Fact Sheet.

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

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2007-0078 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 federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

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

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

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal, system in amounts that significantly diminish the system's

capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

E. The discharge of waste classified as "hazardous" as defined in Sections 2521 (a) of Title 23, CCR, Section 13173 of the California Water Code, is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001.

1. Final Effluent Limitations – Discharge Point No. 001

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

Table 6. Effluent Limitations Discharge Point 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd		0.070		
Settleable Solids	mL/L-hr	0.1	0.2		
Total Suspended Solids	mg/L	30	50		
pH	standard units			6.5	8.5

b. 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.

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 Recoverable Aluminum. Aluminum not to exceed the Secondary MCL of 200 µg/L as an annual average (calendar year).

e. Chlorpyrifos and Diazinon. Chorpyrifos and diazinon concentrations shall not exceed the sum of one (1.0) as defined below:

i. Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\text{-}avg}}{} + \frac{C_{C\text{-}avg}}{} \leq 1.0$$

$$\frac{}{0.079} \quad \frac{}{0.012}$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

ii. Maximum Daily Effluent Concentration

$$S_{AMEL} = \frac{C_{D\text{-}max}}{0.6} + \frac{C_{C\text{-}max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

2. Interim Effluent Limitations

Effective immediately and ending on permit expiration, the Discharger shall maintain compliance with the following limitations at Discharge Point No. D-001 with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 7. Interim Effluent Limitations

Parameter	Units	Effluent Limitations (Annual Average – Calendar Year)
Aluminum	µg/L	798

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the on-site storage reservoir and the unnamed tributary to New York Flat Creek.

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

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

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

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

5. **Dissolved Oxygen:**

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

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

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

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

7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

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

9. **Pesticides:**

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

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

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

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

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

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

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

10. Radioactivity:

a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

b. Radionuclides to be present in excess of the maximum contaminant levels (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.

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

1. The discharge shall not cause the underlying groundwater to be degraded.

VI. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with the following provisions:

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

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

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

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

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

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

The causes for modification include:

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

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

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

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

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

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

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

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

ii. Controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

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

The technical report shall:

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

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

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

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges

and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

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

l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

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

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

q. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

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

B. Monitoring and Reporting Program Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including, 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. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a 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.

c. **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 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. 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.

d. **Aluminum Reopener.** This Order requires the Discharger to conduct a site-specific study or other study acceptable to the Executive Officer to determine the appropriate chronic aquatic life criterion for aluminum. If the results of the Study indicate the appropriate chronic aquatic life criterion is being exceeded in the discharge, the permit may be reopened and aluminum effluent limitations modified, if appropriate.

e. **Priority Pollutants.** 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.

f. **Drinking Water Policy.** The Central Valley Water Board is developing a Drinking Water Policy. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

g. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following Water Code section 13263.3(d)(3) for aluminum. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.

h. **Regional Monitoring Program.** The Central Valley Water Board is developing a Regional Monitoring Program for the Sacramento-San Joaquin Delta. This Order may be reopened to modify the monitoring requirements to implement the Regional Monitoring Program.

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2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits toxicity, as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. Initial Investigative TRE Workplan. <u>Within 90 days</u> of the effective date of this Order, the Discharger shall submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

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

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

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

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

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

trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

iv. Accelerated Monitoring Specifications. If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14 days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four (4) chronic toxicity tests conducted once every 2 weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

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

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

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

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Central Valley Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or

eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance[1].

b. 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. The Discharger shall conduct monitoring of the effluent at Monitoring Location EFF-001, and of the receiving water above the on-site storage reservoir/unnamed tributary to New York Flat Creek at RSW-001, for all priority pollutants and other constituents of concern as described in Attachment I. Where this monitoring duplicates the locations and frequencies of monitoring otherwise required in the Monitoring and Reporting Program (Attachment E), duplicate monitoring is not required.

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: **Aluminum**. The Discharger shall comply with the following time schedule in Section Vi.C.7.

d. Aluminum Site-Specific Study. This Order requires the Discharger to conduct a site-specific study or other study acceptable to the Executive Officer to determine the appropriate chronic aquatic life criterion for aluminum. A workplan for the Study must be submitted prior to commencement of activities, for approval by the Executive Officer, and the results of the Study are due to the Central Valley Water Board **no later than 1 year prior** to the expiration of the permit. If the results of the Study indicate the appropriate chronic aquatic life criterion is being exceeded in the discharge, the permit may be reopened and aluminum effluent limitations established, if appropriate.

The Executive Officer may waive this requirement to complete the Study, if after two years of aluminum monitoring (as outlined in Attachment E) of the effluent and the receiving water, the monitoring results indicate that the Discharger's efforts at aluminum source control at the Facility have reduced effluent aluminum levels to below the National Recommended Water Quality Criteria of 87 µg/L (most stringent, potentially applicable chronic aquatic-life criteria) and the development of site-specific aluminum chronic aquatic life criterion for the discharge is not necessary. If the effluent concentrations continue to exceed the 87 µg/L criterion, then the study to determine the appropriate chronic aquatic life criterion shall continue.

3. Best Management Practices and Pollution Prevention

a. 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

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

Central Valley Water Board **within 9 months of the adoption date of this Order** for the approval by the Executive Officer.

b. CWC Section 13263.3(d)(2) Pollution Prevention Plans. A pollution prevention plan for **aluminum** is required in this Order per CWC section 13263.3(d)(1)(C). The pollution prevention plans required in section VI.C.3 and in section VI.C.7 of this Order, shall, at a minimum, meet the requirements outlined in CWC section 13263.3(d)(2). The minimum requirements for the pollution prevention plans include the following:

i. An analysis of one or more of the pollutants, as directed by the State Water Board, a Regional Water Board, or a POTW, that the Facility discharges into water or introduces into POTWs, a description of the sources of pollutants, and a comprehensive review of the processes used by the Discharger that result in the generation and discharge of the pollutants.

ii. An analysis of the potential for pollution prevention to reduce the generation of the pollutants, including the application of innovative and alternative technologies and any adverse environmental impacts resulting from the use of these methods.

iii. A detailed description of the tasks and time schedules required to investigate and implement various elements of pollution prevention techniques.

iv. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action.

v. A description of the Discharger's existing pollution prevention methods.

vi. A statement that the Discharger's existing and planned pollution prevention strategies do not constitute cross-media pollution transfers unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board, the Regional Water Board, or the POTW, and information that supports that statement.

vii. Proof of compliance with the Hazardous Waste Source Reduction and Management Review Act of 1989 [Article 11.9 (commencing with section 25244.12) of Chapter 6.5 of Division 20 of the Health and Safety Code) if the Discharger is also subject to that act.

4. Construction, Operation and Maintenance Specifications

a. Treatment Pond (Backwash Settling Ponds) Operating Requirements.

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

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

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

(a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

(b) Weeds shall be minimized.

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

iv. The maximum daily discharge shall not exceed 0.070 million gallons.

v. The discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), or "designated", as defined in section 13173 of the Water Code, to the treatment ponds is prohibited.

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

vii. Ponds shall not have a pH less than 6.0 or greater than 9.0.

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions

a. Sludge Disposal Requirements. Sludge in this document means the solid waste collected in the backwash settling basins. Sludge shall be disposed of in a manner approved by the Executive officer and consistent with the Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq. Removal for further treatment, 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 the Regional Water Board will satisfy these specifications. Any proposed change in pond sludge disposal or storage practice shall be reported to the Executive Officer at least 90 days in advance of the change.

b. Low Threat Discharges. On 12 June 2008, the Central Valley Water Board adopted Order No. R5-2008-0081, *Waste Discharge Requirements for Dewatering and Other Low Threat Discharges.* The Discharger shall be subject to the requirements of R5-2008-0081 and any future revisions thereto. Order No. R5-2008-0081 applies to individuals, public agencies, private businesses, and other legal entities discharging relatively pollutant-free wastewaters that pose little or no threat to the quality of surface waters. The Discharger shall submit a

Notice of Applicability (NOA) for coverage under Order No. R5-2008-0081 prior to discharging low threat wastewater.

7. Compliance Schedules – Aluminum

This Order requires compliance with the final effluent limitations for Aluminum within 5 years of the effective date of this order. Until final compliance, the Discharger shall submit progress reports in accordance with Table 8, below. The discharge exhibits reasonable potential to exceed the 200 µg/l secondary MCL objective as an annual average. The Discharger shall comply with the following time schedule to ensure compliance with the final effluent limitations (200 µg/L secondary MCL objective as an annual average):

Table 8. Compliance Schedule - Aluminum

Task	Compliance Date
Submit and Implement Pollution Prevention Plan (PPP)[1] for aluminum	**Within 6 months** after effective date of this Order
Submit Method of Compliance Workplan/Schedule	**Within 1 year** after effective date of this Order
Progress Reports[2]	**31 January**, annually, after approval of work plan until final compliance
Submit Method of Compliance Report	**Within 2 years** after effective date of this Order
Begin Compliance Project	**Within 3 years** after effective date of this Order
Full Compliance	**Within 5 years** after the permit effective date

[1] The PPP for aluminum shall be prepared and implemented in accordance with CWC section 13263.3(d)(2) as outlined in the Fact Sheet.

[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 with the final effluent limitations.

VII. COMPLIANCE DETERMINATION

A. TSS and Settleable Solids Effluent Limitations (Section IV.A.). Compliance with the final effluent limitations for TSS and settleable solids required in Limitations and Discharge Requirements section VI.A shall be ascertained by grab samples. Any excursion above the average monthly and/or maximum daily effluent limitations is a violation.

B. Aluminium Effluent Limitations (Section IV.A.2.). Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient

Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

C. Total Residual Chlorine Effluent Limitations (Section IV.A.2.). Compliance with the final effluent limitations for total chlorine residual shall be ascertained by grab samples during discharge from the from the backwash settling basings(s) to the on-site storage reservoir. Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

D. Chronic Whole Effluent Toxicity Effluent Limitation. Compliance with the accelerated monitoring and TRE provisions of Provision VI.C.2.a shall constitute compliance with the effluent limitation.

E. Priority Pollutant Effluent Limitations. 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.

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

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

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

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

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

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in 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 CFR Part 136, Attachment B, revised as of 3 July 1999.

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

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

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

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

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

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

Reporting Level (RL)
The RL is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the RL depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied in the computation of the RL.

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

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

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

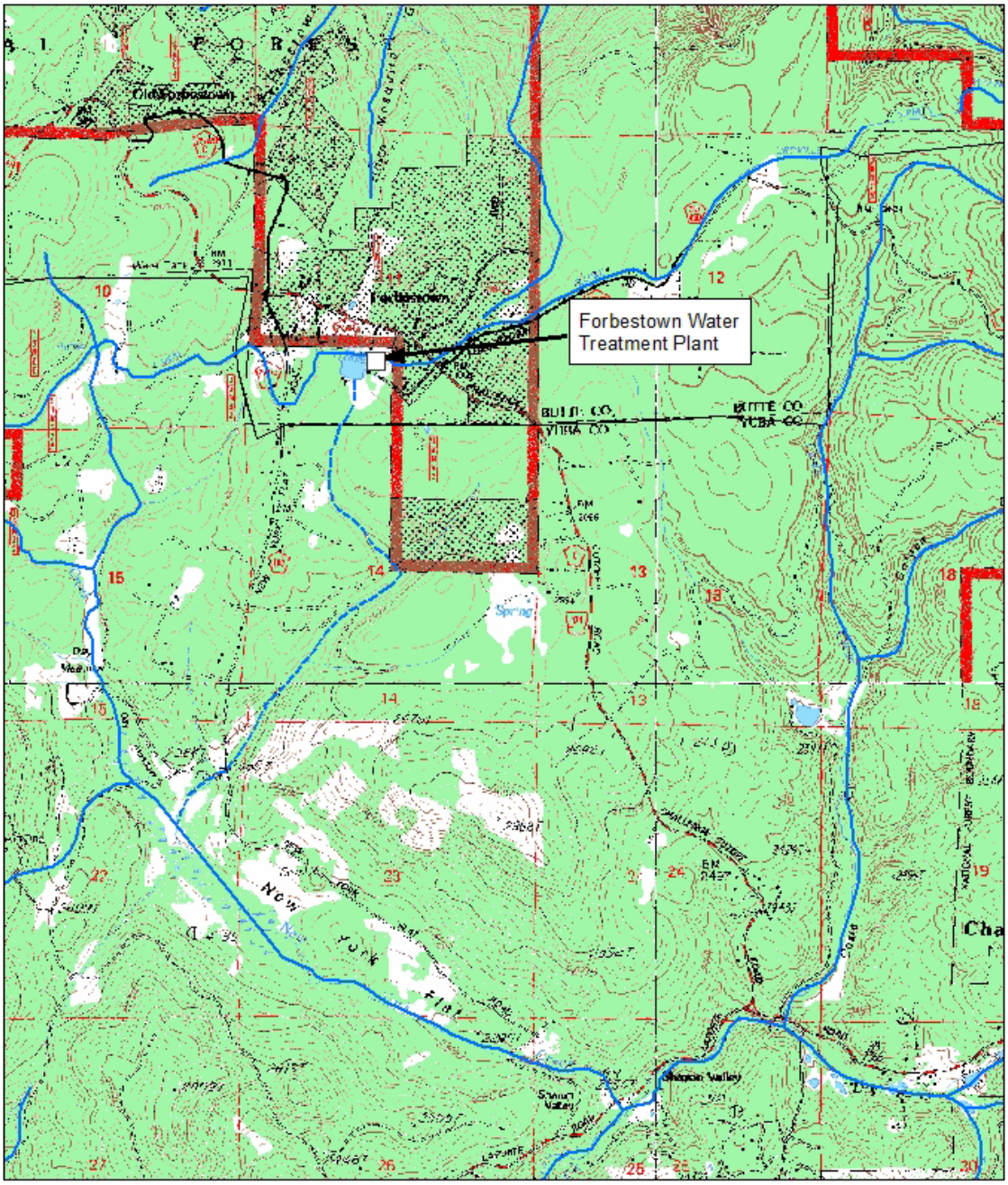
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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 – MAPS



Drawing Reference:
U.S.G.S TOPOGRAPHIC MAP
WBGIS.IMAGERY DRG 24K

Scale: 1:40,000

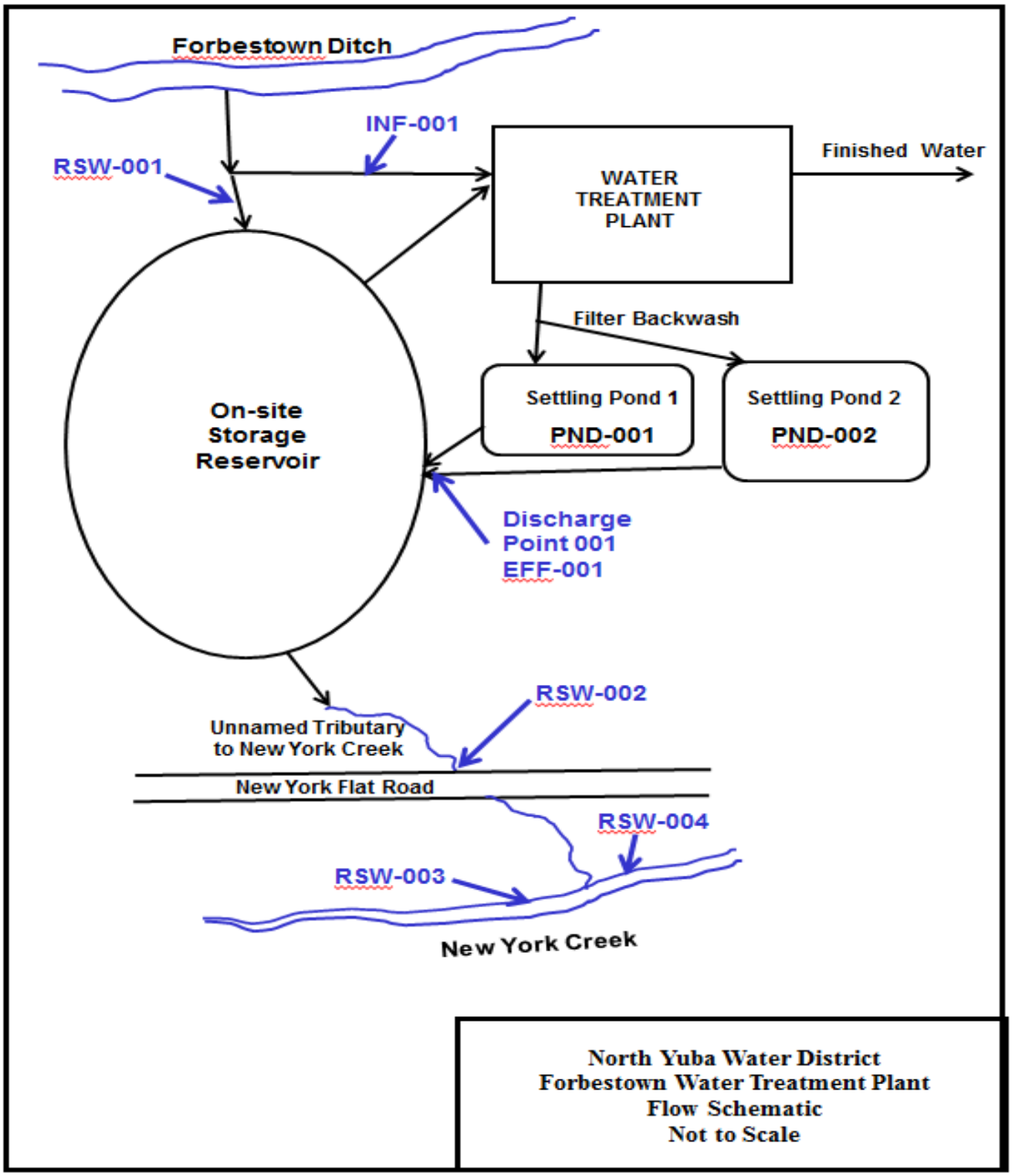
SITE LOCATIONMAP

NORTH YUBA WATER DISTRICT
FORBESTOWN WATER TREATMENT PLANT

BUTTE COUNTY

N
W E
S

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 (Water Code) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); Water Code section 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));

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

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

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

G. Bypass

1. Definitions

c. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i))

d. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii))

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR 122.41(m)(2))

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C))

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

5. Notice

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

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

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2))

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional 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 CFR 122.41(l)(3) and 122.61)

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4) and 122.44(i)(1)(iv))

IV. STANDARD PROVISIONS – RECORDS

F. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR 122.41(j)(2))

G. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

2. Permit applications and attachments, permits and effluent data. (40 CFR 122.7(b)(2))

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR 122.41(k))

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR 122.22(a)(3)).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR 122.22(b)(3))

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c))

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR 122.22(l)(4))

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR 122.41(l)(4)(i))

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR 122.41(l)(4)(ii))

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR 122.41(l)(4)(iii))

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall notify the Office of Emergency Services of any noncompliance that may endanger health or the environment within two (2) hours from the time the Discharger becomes aware of the circumstances. The Discharger shall notify the

Central Valley Water Board of the noncompliance by telephone or fax within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided to the Central Valley Water Board within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i))

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

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

b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B))

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (40 CFR 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR 122.41(l)(1)(ii))

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

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR 122.41(l)(2))

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 122.41(l)(8))

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional 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. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 CFR 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 CFR 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(1)(iii)); or

d. The level established by the Regional Water Board in accordance with 40 CFR 122.44(f). (40 CFR 122.42(a)(1)(iv))

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 CFR 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 CFR 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 CFR 122.42(a)(2)(iv))

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board, (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of 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 in accordance with 40 CFR 136 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, dissolved oxygen, turbidity, temperature and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. 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 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	Forbestown Ditch water piped to the Facility and on-site storage reservoir
001	EFF-001	Outfall from settling ponds to on-site storage reservoir
--	RSW-001	Forbestown Ditch water piped to the on-site storage reservoir
--	RSW-002	Unnamed tributary to New York Flat Creek, downstream of the discharge from the on-site storage reservoir at the road crossing at a point agreed upon between the Discharger and Central Valley Water Board Staff
--	RSW-003	New York Flat Creek upstream of the confluence with the unnamed tributary receiving discharge from the on-site storage reservoir at a point agreed upon between the Discharger and Central Valley Water Board Staff
--	RSW-004	New York Flat Creek, downstream of the confluence with the unnamed tributary receiving discharge from the on-site storage reservoir, at a point agreed upon between the Discharger and Central Valley Water Board Staff
--	PND-001	Settling Pond No. 1
--	PND-002	Settling Pond No. 2

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the facility and on-site storage reservoir from the Forbestown Ditch as follows:

Table E-2. Influent Monitoring (INF-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Electrical Conductivity @ 25˚C	µmhos/cm	Grab	1/year
Hardness (as $CaCO_3$)	mg/L	Grab	1/year

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor Discharge Point No. 001 at EFF-001, when there is a discharge to the on-site storage reservoir from the on-site settling ponds 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 (EFF-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	[1]
pH	Standard Units	Grab	1/Week	[1]
Turbidity	NTU	Grab	1/Week	[1]
Settleable Solids	mL/L	Grab	2/Month	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Chlorine Residual	mg/L	Grab	1/week	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week	[1]
Aluminum, Total Recoverable[3]	µg/L	Grab	1/Month[4]	[1]
Hardness, Total as $CaCO_3$	mg/L	Grab	1/Month[4,5]	[1]
Manganese, Total Recoverable	µg/L	Grab	1/Year	[1]
Nickel, Total Recoverable	µg/L	Grab	1/Year	[1]
Cadmium	µg/L	Grab	1/Year	[1]
Copper	µg/L	Grab	1/Year	[1]
Lead	µg/L	Grab	1/Year	[1]
Mercury	µg/L	Grab	1/Year	[1]
Silver	µg/L	Grab	1/Year	[1]
Zinc	µg/L	Grab	1/Year	[1]
Chlorpyrifos	µg/L	Grab	1/Year	[7]
Diazinon	µg/L	Grab	1/Year	[7]
Priority Pollutants and Other Constituents of Concern	µg/L	Grab	Third Year of Permit Term[7,8]	[1, 9]
Acute Toxicity	% Survival	Grab	1/Year	[1]
Chronic Toxicity	TUc	Grab	First and Third Year of Permit Term	[1]
Total Suspended Solids	mg/L	Grab	1/week	[1]

[1] 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.

[2] Aluminum can be monitored 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.

[3] Aluminum can be monitored 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.

[4] Monitoring frequency may be reduced to quarterly after two years of monthly results upon approval by the Executive Officer.

[5] Hardness shall be sampled concurrently with aluminum samples.

[6] USEPA Method 625M, Method 8141, or equivalent. Minimum reporting limits: <100ng/L diazinon; ,15 ng/L chlorpyrifos.

[7] Priority pollutants (except asbestos and dioxin/furans) shall be sampled twice during the third year following the date of permit adoption and shall be conducted concurrently with upstream receiving water monitoring for pH, hardness (as $CaCO_3$), and priority pollutants and other constituents of concern. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.

[8] Concurrent with receiving surface water sampling.

[9] The maximum required Reporting Level is specified in Attachment I, Table I-1, Priority Pollutants and Other Constituents of Concern.

2. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above for the weekly and monthly frequencies, after which the

frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform annual acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – The Discharger may use flow-through, static non-renewal, or static renewal testing. For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.

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

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, ammonia, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

1. *Monitoring Frequency –* The Discharger shall perform three species chronic toxicity testing twice during the permit term (1st and 3rd year of permit).

2. *Sample Types* – Effluent 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. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in this Monitoring and Reporting Program.

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

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent

compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

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

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

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

7. *Dilutions* – For regular 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 two controls. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, unless use of an alternative diluent is detailed in the submitted TRE Action Plan, or when the receiving water is toxic.

Table E-4. Chronic Toxicity Testing Dilution Series

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

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

a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in the Special Provision at section VI. 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). (Note: items a through c, above, are only required when testing is performed using the full dilution series.

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. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location RSW-001, RSW-002, RSW-003 and RSW-004

1. The Discharger shall monitor influent water to the on-site storage reservoir, New York Flat Creek and the unnamed tributary to New York Flat Creek at RSW-001, RSW-002, and New York Flat Creek at RSW-003 and RSW-004. Receiving water monitoring at RSW-003 and RSW-004 shall be conducted when there is an exceedance of receiving water limitations at RSW-002. Receiving water sampling is not required when there is no discharge. Samples shall be taken from RSW-001, RSW-002, RSW-003 and RSW-004 as follows:

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Grab	1/Week[7]	[1]
pH	standard units	Grab	1/Week[7]	[1]
Total Chlorine Residual	mg/L	Grab	1/Week[7]	[1]
Temperature	Degree F	Grab	1/Week[7]	[1]
Aluminum, Total Recoverable	µg/L	Grab	1/Month[7]	[1, 2]
Cadmium	µg/L	Grab	1/Year	[1]
Copper	µg/L	Grab	1/Year	[1]
Lead	µg/L	Grab	1/Year	[1]
Mercury	µg/L	Grab	1/Year	[1]
Silver	µg/L	Grab	1/Year	[1]
Zinc	µg/L	Grab	1/Year	[1]
Priority Pollutants and Other Constituents of Concern	µg/L	Grab	Third Year of Permit Term[3,4, 5]	[1, 6]

[1] 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.

[2] Aluminum can be monitored 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.

[3] Samples shall be collected at RSW-001.

[4] Priority pollutants (except asbestos and dioxin/furans) shall be sampled **twice** during the third year following the date of permit adoption and shall be conducted concurrently with upstream receiving water monitoring for pH, hardness (as $CaCO_3$), and priority pollutants and other constituents of concern. See Attachment I for more detailed requirements related to performing the priority pollutant monitoring.

[5] Concurrent with sampling at Discharge Point 001.

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

[7] Sampling only required at RSW-003 and RSW-004 only when there is an exceedance of receiving water limitations at RSW-002.

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001, RSW-002, RSW-003 and RSW-004. Attention shall be given to the presence or absence of:

a. Floating or suspended matter;
b. Discoloration;
c. Bottom deposits;
d. Aquatic life;
e. Visible films, sheens, or coatings;
f. Fungi, slimes, or objectionable growths; and
g. Potential nuisance conditions.

Notes on receiving water conditions shall be summarized in the monitoring report.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids- Monitoring Locations PND-001 and PND-002

1. The Discharger shall submit a report by **31 January** of each year for disposal of sludge from the settling basins at Monitoring Locations PND-001 and PND-002, which shall include the following:

   a. A composite sample of sludge shall be collected annually at Monitoring Location PND-001 and/or PND-002, and tested for the metals listed in Title 22, sludge percent solids, and aluminum. Sampling is not required during years when solids are not removed from the ponds.

   b. Estimate of sludge removed in dry tons.

   c. Estimate of on-site sludge storage in dry tons.

   d. A description of disposal methods, including the names and locations of facilities receiving sludge.

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 CIWQS Program Web site (http:www.waterboards.ca.gov/ciwqs/index.html). 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-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	**Permit effective date**	Continuous	First day of second calendar month following month of sampling.
1/Week	**Permit effective date**	Sunday through Saturday	First day of second calendar month following month of sampling.
2/Month	**Permit effective date**	First day of calendar month through 15th day of calendar month and 15th day through last day of calendar month	First day of second calendar month following month of sampling.
1/Month	**Permit effective date**	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/Quarter	**Permit effective date**	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/Year	**Permit effective date**	1 January through 31 December	First day of second calendar month following month of sampling.
1/Permit Cycle	**Permit effective date**	During the 3rd Year of Permit Cycle	Six-months following final month of sampling.

3. Reporting Protocols. The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

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

a. Sample results greater than or equal to the 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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

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

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. Reporting Requirements. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible.

a. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations or with other waste discharge requirements (e.g., discharge specifications, receiving water limitations, special provisions, etc.).

b. Reports must clearly show when discharging to EFF-001 or other permitted discharge locations. Reports must show the date and time that the discharge started and stopped at each location.

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

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

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

b. 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.

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

7. The Discharger shall submit SMRs in accordance with the following requirements:

a. 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. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS.

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

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

Regional Water Quality Control Board
Central Valley Region
NPDES Compliance and Enforcement Unit
364 Knollcrest Drive, Suite #205
Redding, CA 96002

C. Discharge Monitoring Reports (DMR Reports) - Not Applicable

D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in the Special Provisions contained in section VI of the Order, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-7. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Submit Method of Compliance Workplan for Aluminum	**Within 6 months** after effective date of this Order
Pollution Prevention Plan for Aluminum	**31 January**, annually, after approval of workplan

2. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by 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.

3. **Within 60 days of permit effective date**, 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 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 I-1 (Attachment I) provides required maximum reporting levels in accordance with the SIP.

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. 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-001 **twice** for all priority pollutants and other constituents of concern as described in

Attachment I. The report shall be submitted to the Central Valley Water Board within **six-months** following the last sampling period.

5. **Annual Operations Report**. **By 30 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

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

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

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

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

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

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in the Findings in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A040114003
Discharger	North Yuba Water District
Name of Facility	Forbestown Water Treatment Plant
Facility Address	118 Buckeye Drive
	Forbestown, CA 95941
	Butte County
Facility Contact, Title and Phone	Jeff Maupin, General Manager, (530) 675-2567
Authorized Person to Sign and Submit Reports	Eric Manley, Superintendent, (530) 675-2971
Mailing Address	P.O. Box 299, Brownsville, CA 95919
Billing Address	Same
Type of Facility	Water Treatment Plant
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	N
Reclamation Requirements	Not Applicable
Facility Permitted Flow	0.070 mgd
Facility Design Flow	0.070 mgd
Watershed	Yuba River Hydrologic Unit, Mildred Lake Hydrologic Subarea (517.13)
Receiving Water	On-site storage reservoir and Unnamed tributary of New York Flat Creek, which is tributary to Dry Creek and the Yuba River (Englebright Dam to Feather River)
Receiving Water Type	Inland surface water

A. The North Yuba Water District (hereinafter Discharger) is the owner and operator of the Forbestown Water Treatment Plant (hereinafter Facility), a water treatment plant.

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 an on-site storage reservoir and unnamed tributary of New York Flat Creek, a tributary of Dry Creek and the Yuba River (Englebright Dam to Feather River), waters of the United States, and is currently regulated by Order No. R5-2007-0078 which was adopted on 22 June 2007 and expired on 1 August 2012.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 27 April 2011. A site visit was conducted on 13 August 2012, to observe operations and collect additional data to develop permit limitations and conditions. Supplemental data was submitted on 11 September 2012.

II. FACILITY DESCRIPTION

The Discharger provides water treatment and supply service for the communities of Forbestown, Brownsville, Challenge, and Rackerby and services a population of approximately 3,000. The source water for the Discharger's drinking water treatment plant is the Forbestown Ditch. The design daily average water treatment capacity of the Facility is 2.0 million gallons per day (mgd). The design flow of the Facility's backwash wastewater system is 0.07 mgd.

During the period from approximately May through September, when water demand is the highest, the raw water for treatment comes directly from the Forbestown Ditch to the treatment Facility. During the non-peak periods from September to May, the Facility's 30.9 acre-feet capacity on-site storage reservoir is utilized as the raw water source for the Facility. The storage reservoir is fed by the Forbestown Ditch. The exact date in the spring and fall for the switch for delivering the source water to the Facility from the storage reservoir or directly from the Forbestown Ditch is dependent on weather and water demand.

Prior to the use of the on-site storage reservoir for source water in the fall (normally in September or October), approximately 1,000 gallons per minute (1.44 mgd) of water from the Forbestown Ditch is delivered to the on-site storage reservoir for a two to three day period to flush the reservoir. During the annual flush, the discharge from the on-site storage reservoir is equal to the influent flushing flow (1.44 mgd). The inflow to the reservoir is shut off after the flush and water from the storage reservoir is then pumped for treatment through the Facility. Water is diverted from the Forbestown Ditch to refill the on-site storage reservoir, as needed during the winter and spring. Refilling is normally needed once a month and is managed so there is no discharge from the on-site storage reservoir to the unnamed tributary to New York Flat Creek. However, there is the potential for discharges from the on-site storage reservoir during the winter during periods when a full (refilled) reservoir coincides with periods of heavy rain.

During the period from May through September there is a continuous spillage of water from Forbestown Ditch to the on-site storage reservoir, resulting in a continuous discharge from the on-site storage reservoir to the unnamed tributary to New York Flat Creek. Flow from the on-site storage reservoir has not been measured during the term of the previous permit, Order No. R5-2007-0078.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system at the Facility for supply service water consists of pre-chlorination, polymer addition, coagulation, filtration, and post-chlorination of the finished water. The Facility has two synthetic bead and mixed media (sand, anthracite, and gravel) filters that are each capable of treating up to 1.008 mgd. Flushing and backwashing of the filters is based on the pressure differential in the filters. During the peak use period, the filters backwash an average of once day. During the non-peak use period flushing and backwashing occurs once every three days. The flush cleans the synthetic beads and the backwash cleans the mixed media. A flush produces approximately 6,500 gallons of wastewater and a backwash produces approximately 19,800 gallons of wastewater. Other minor wastewater streams at the Facility consist of pH meter flow (571 gpd), chlorine meter flow 205 gpd), finished water turbidity meter flow (255 gpd), and raw water turbidity meter flow (150 gpd). During operation of the emergency generator, approximately 20,160 gpd of generator cooling water may be discharged to the settling ponds. Once a year the synthetic beads are scoured with muriatic acid and several backwashes are performed to dilute the acid.

The flush, backwash, and the other minor wastewater streams are sent to one of two settling ponds. Use of the settling ponds is alternated yearly, with one in use for settling filter backwash and the other in use for drying of accumulated solids. An overflow standpipe discharges supernatant from the settling pond in use to the on-site water storage reservoir (Discharge Point 001). Flow from Discharge Point 001 is not directly measured; however, flow of the backwash water from the filters to the backwash basin can be calculated. The design dry weather maximum discharge from Discharge Point 001 is 70,000 gpd.

No chemicals are used for dechlorination of the filter backwash wastewater prior to discharge from Discharge Point 001 to the on-site water storage reservoir. The Discharger currently relies on passive dechlorination before discharging to the on-site water storage reservoir. However, with the elimination of discharge point 002 and the compliance point for Chlorine residual moved to 001, the discharger will be relying on passive dechlorination in the settling ponds. The on-site storage reservoir has an overflow pipe that discharges a mixture of wastewater and raw water to the unnamed tributary of New York Flat Creek. During the summer months when water demand is highest, the on-site water storage reservoir is allowed to continually overflow to minimize algae growth. No chemicals are used for algae or aquatic weed control in the on-site storage reservoir.

Approximately 50 cubic yards of water treatment solids is dried and removed each year from one of the settling ponds. Water treatment solids are dried on site and transported to a landfill for disposal.

Storm water is routed around the Facility and enters the unnamed tributary to New York Flat Creek.

Central Valley Water Board Order No. R-2007-0078 included effluent limitations and special provisions for non-backwash waters, such as well development water, construction dewatering, pump/well testing, pipeline/tank pressure testing, pipeline/tank flushing or dewatering, condensate discharges, unspecified water supply system discharges, and other miscellaneous dewatering/low threat discharges. These types of discharges are covered by the Central Valley Water Board General Order No. R5-2008-0081, Waste Discharge Requirements for Dewatering and Other Low Threat Discharges (Low Threat General Order). Therefore, this Order does not retain the requirements for non-backwash waters and the Discharger is required to submit a Notice of Intent (NOI) for coverage under the Low Threat General Order for discharges of non-backwash waters.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 11, T9N, R6E, MDB&M, as shown in Attachment B, a part of this Order.

2. Settled filter backwash wastewater is discharged at Discharge Point No. 001 to the on-site raw water storage reservoir at a point latitude 39° 30’ 54” N and longitude 121° 16’ 09” W.

3. A mixture of filter backwash wastewater and raw water is discharged to an unnamed tributary of New York Flat Creek, a water of the United States, at a point latitude 39° 30’ 54” N and longitude 121° 16’ 07” W.

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

Effluent limitations contained in Order No. R5-2007-0078 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001, discharge into the on-site storage reservoir) and representative monitoring data from the term of Order No. R5-2007-0078 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter	Units	Effluent Limitation		Monitoring Data (From September 2007 To May 2012)	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Flow	mgd	0.070	--	Not reported	Not reported
Settleable Solids	mL/L	0.1	0.2	<0.1	<0.1
Total Suspended Solids	mg/L	30	50	6.5	11
pH	units	--	6.0 -9.0	--	6.57-8.17
Turbidity	NTU	No Effluent Limitation		--	9.67
Electrical Conductivity @ 25˚C	µmhos/cm	No Effluent Limitation		--	75.3

Parameter	Units	Effluent Limitation		Monitoring Data (From September 2007 To May 2012)	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Bis (2-ethylhexyl) phthalate	µg/L	No Effluent Limitation		--	<4
Aluminum (Total Recoverable)	µg/L	No Effluent Limitation		--	696

Effluent limitations contained in Order No. R5-2007-0078 for discharges from Discharge Point No. 002 (Monitoring Location EFF-002- discharge out of the on-site storage reservoir) and representative monitoring data from the term of Order No. R5-2007-0078 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitation		Monitoring Data (From September 2007 To May 2012)	
		Average Weekly	Maximum Daily	Highest Average Weekly Discharge	Highest Daily Discharge
Total Chlorine Residual	mg/L	0.01[1]	0.02[2]	--	<0.01
Acute Toxicity	% Survival	--	[3]	--	100[4]

[1] Applied as a 4-day average effluent limitation.
[2] Applied as a 1-hour average effluent limitation.
[3] 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%
[4] Represents the minimum observed percent survival.

Order No. R5-2007-0078 required receiving water monitoring in the unnamed tributary to New York Flat Creek downstream of Discharge Point 002 when turbidities exceeded 10 NTU at Discharge Point 001. No receiving water monitoring was conducted during the term of the previous Order No. R5-2007-0078 since the turbidity at Discharge Point 001 did not exceed 10 NTU. The maximum turbidity reported for Discharge Point 001 was 9.67 NTU.

D. Compliance Summary

No exceedances of effluent limitations were reported. No acute or chronic toxicity was reported.

E. Planned Changes

There are no planned changes; however, the compliance monitoring and previous limits (for total residual chlorine and WET) are being moved to D-001 (discharge into the onsite storage reservoir). Previous permit had compliance and monitoring for these two constituents on the outfall from the onsite storage reservoir (D-002). This new approach

does not allow the onsite storage reservoir "dilution" to be used for determining compliance. At times, water from the Forbestown Ditch is allowed to flow freely through the onsite storage reservoir, and therefore, staff is proposing moving monitoring and compliance for the discharge into the onsite storage reservoir (rather than out of the onsite storage reservoir). The previous permit required flow, settleable solids, total suspended solids and pH to have compliance into the onsite storage reservoir, and this new proposal merely adds total residual chorine and WET effluent limits to the same compliance point.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   a. Water Quality Control Plan, *Fourth Edition (Revised October 2011), for the Sacramento and San Joaquin River Basins* (Basin Plan).

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

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

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

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

6. **Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.O of this Order. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

7. **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 industrial facilities. Water treatment facilities are not applicable industries under the storm water program and are required to be covered under the State Water Board's General Industrial Storm Water Permit.

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 12 November 2010 USEPA gave final approval to California's 2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 CFR Part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." New York Flat Creek is not listed in the 2010 303(d) list as impaired.

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. In 2007, the Central Valley Water Board adopted an amendment to the Basin Plan that addressed impairments within the Sacramento River and Feather River Basins by promulgating a water quality objective for diazinon and chlorpyrifos, as well as an implementation program designed to ensure compliance with the new water quality objective. Per this implementation program, all NPDES permits for discharges (both direct and indirect) to the Sacramento or Feather Rivers must contain an effluent limit equivalent to the diazinon and chlorpyrifos water quality objective. Effluent and receiving water monitoring data for diazinon and chlorpyrifos is not available for this Facility. This Order requires the Discharger to monitor the effluent for diazinon and chlorpyrifos and includes effluent limitations for diazinon and chlorpyrifos.

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 section VI.C.3. of this Fact Sheet.

E. Other Plans, Policies and Regulations

1. Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. The Discharger utilizes unlined settling basins to treat the filter backwash water which has the potential to be transported to underlying groundwater. Title 27, section 20090(b) contains an exemption for discharges of wastewater to land where the discharge is covered by WDRs, the discharge is in compliance with the Basin Plan, and the discharge does not need to be managed as a hazardous waste. There is limited information available to directly determine if constituents present in the settling basins would be transported to underlying ground water and cause an exceedance of water quality objectives. There are no ground water monitoring wells or domestic wells in the vicinity of the settling basins.

   However, the discharge to the settling basins consists of discharges from treatment and storage facilities associated with a drinking water treatment plant, is regulated by waste discharge requirements consistent with applicable water quality objectives, and does not need to be managed as a hazardous waste. The chemical character of the raw water treated at the water treatment plant is of good quality. Analyses of the effluent indicate a maximum EC of 75.3 µmhos/cm, and pH between 6.57 and 8.17. No additives other than Chlorine and Aluminum are used in the filtration process. All other constituents that are removed occur naturally in the areas water sources. Therefore, groundwater impacts should be insignificant and should not result in exceedance of water quality objectives. As discussed in Section IV.D.4.b of this Fact Sheet, this Order does not allow for an increase in flow or mass of pollutants to groundwater and the discharge is consistent with the antidegradation provisions of State Water Board Resolution No. 68-16.

2. 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.

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 Central Valley Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

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 USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

a. Flow. The Facility was designed to provide treatment for up to a design flow of 0.070 MGD. Therefore, this Order contains a maximum daily discharge flow effluent limit to the storage reservoir from the filter backwash settling ponds of 0.070 MGD.

b. TSS. The Central Valley Water Board finds that Total Suspended Solids (TSS) is more likely to be re-suspended than settleable solids in the settling ponds prior to discharge, and are therefore more likely to vary in the discharge than concentrations of settleable solids.

To establish limitations for TSS, the Central Valley Water Board examined several permits that regulate wastewater discharges from water treatment plants. A summary of these TSS limitations is presented in the table, below.

Table F-4. Summary of TSS Effluent Limitations in General Permits

State	General NPDES Permit No.	TSS Effluent Limitations (mg/L)		
		Average Monthly	Average Weekly	Maximum Daily
Arkansas	ARG640000	20	--	30
California (San Francisco Bay Region)	CAG382001	30	45	--
Massachusetts	MAG640000	30	--	50
New Hampshire	NHG640000	30	--	50
South Carolina	SCG646000	30	--	60
Washington	[1]	[2]	[2]	[2]
West Virginia	WV0115754	30	--	60

[1] General NPDES permit number not assigned.
[2] TSS is not limited.

The Central Valley Water Board also considered research performed for USEPA in 1987 (SAIC, Model Permit Package for the Water Supply Industry, EPA Contract No. 68-01-7043). This study found that 76 percent of water treatment plants surveyed used sedimentation lagoons for wastewater treatment. In these facilities, average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) of 30 mg/L and 45 mg/L, respectively, were representative of the current permitting practice for TSS at that time. Analysis of actual monitoring data in the facilities studied showed the 95th percent occurrence (monthly average) and 99th percent occurrence (maximum daily) levels of treatment to be 28.1 mg/L and 44.4 mg/L, respectively. The study recommended limitations of 30 mg/L and 45 mg/L as the AMEL and MDEL, respectively, for a model NPDES permit.

Considering this information, the Central Valley Water Board established an AMEL and MDEL of 30 mg/L and 50 mg/L in Order No. R5-2007-0078 based on BPJ. These technology-based effluent limitations are retained in this Order.

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	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD		0.070	--	--
Total Suspended Solids	mg/L	30	50	--	--

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the

beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses.

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for New York Flat Creek, but does identify present and potential uses for the Yuba River (Englebright Dam to Feather River), to which New York Flat Creek, via Dry Creek, is tributary. Thus, beneficial uses applicable to the tributary to New York Flat Creek are as follows:

Table F-6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**On-site storage reservoir and Unnamed tributary to New York Flat Creek**	Table II-1 of the Basin Plan: 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); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm and cold (SPWN);and Wildlife habitat (WILD). State Water Board Resolution No. 88-63: Municipal and domestic supply (MUN). Groundwater: Municipal and domestic water supply (MUN); Industrial service supply (IND), Industrial process supply (PRO), and Agricultural supply (AGR).

In reviewing whether the existing and/or potential uses of the Yuba River (Englebright Dam to Feather River) apply to the on-site storage reservoir and the

unnamed tributary to New York Flat Creek, the Central Valley Water Board has considered the following facts:

i. Municipal and Domestic Supply and Agricultural Supply

The Central Valley Water Board is required to apply the beneficial uses of municipal and domestic supply to the on-site storage reservoir and unnamed tributary to New York Flat Creek based on State Water Board Resolution No. 88-63 which was incorporated in the Basin Plan pursuant to Central Valley Water Board Resolution No. 89-056. In addition, the State Water Board has issued water rights to existing water users along New York Flat Creek, Dry Creek and the Yuba River downstream of the discharge for domestic and irrigation uses. The on-site storage reservoir and the unnamed tributary to New York Flat Creek likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water. In addition to the existing water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased domestic and agricultural uses of the water in the New York Flat Creek.

ii. Water Contact and Noncontact Recreation and Esthetic Enjoyment

The Central Valley Water Board finds that the receiving water flows through residential areas, there is ready public access to the unnamed tributary to New York Flat Creek, exclusion of the public is unrealistic and contact recreation activities current exist along the unnamed tributary to New York Flat Creek and downstream waters and these uses are likely to increase as the population in the area grows.

iii. Groundwater Recharge

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Flow downstream and percolation to groundwater provide a source of municipal and irrigation water supply.

iv. Preservation and Enhancement of Fish, Wildlife, and other Aquatic Resources

The on-site storage reservoir and unnamed tributary to New York Flat Creek flows to the Yuba River via Dry Creek. The California Department of Fish and Game (DFG) has verified that the fish species present in the downstream waters (New York Flat Creek) are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration and rearing habitat for juvenile salmon and steelhead, necessitating a cold water designation. The Basin Plan (Table II-1, Footnote (2)), the cold water designation applies to the unnamed tributary to New York Flat Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L.

Upon review of the flow conditions, habitat values, and beneficial uses of the on-site storage reservoir and unnamed tributary to New York Flat Creek, and the facts described above, the Central Valley Water Board finds that the beneficial uses identified in the Basin Plan for the Yuba River (Englebright Dam to Feather River) are applicable to the on-site storage reservoir and unnamed tributary to New York Flat Creek.

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 effluent and ambient background data submitted in SMRs from July 2007 to May 2012, and in a priority pollutant scan conducted on 11 November 2011.

c. **Assimilative Capacity/Mixing Zone.** The Central Valley Water Board finds that based on the available information, the onsite storage reservoir and unnamed tributary to New York Flat Creek, absent the discharge, is an ephemeral stream. The ephemeral nature means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. The discharge, primarily during the summer months, maintains the aquatic habitat; therefore, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the unnamed tributary to New York Flat Creek help support the aquatic life. The unnamed tributary to New York Flat Creek would be dry without the discharge and during periods when sufficient background flows provide hydraulic continuity with New York Flat Creek. Dry conditions can occur in the fall, winter and spring months when there is no discharge to the unnamed tributary to New York Flat Creek from the Facility, particularly in low rainfall years. Significant dilution may occur during and immediately following high rainfall events. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water goals, and aquatic life.

d. **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.

e. **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 SIP[1], the CTR[2] and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4)) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (Id., p.10).

As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces hardness-dependent CTR criteria based on the reasonable worst-case downstream ambient hardness that ensure these metals do not cause receiving water toxicity under any downstream receiving water condition. Under this methodology, the Central Valley Water Board considers all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body[3]. 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.

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

[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

[3] 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.

(a) The SIP requires 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 hardness[1]. For comparing the maximum ambient background concentration to the applicable criterion, the reasonable worst-case upstream ambient hardness was used to adjust the criteria. This is appropriate, because this area is outside the influence of the discharge. Since the discharge does not impact the upstream hardness, the effect of the effluent hardness was not included in this evaluation.

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

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

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[1] The pollutant must also be detected in the effluent.

[2] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.

[3] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP.

Using a calculated hardness value ensures that the Central Valley Water Board considers all possible mixed downstream values that may result from these two independent variables. Relying on receiving water sampling alone is less likely to capture all possible mixed downstream conditions.

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

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

Where:

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

ECA = C (when C ≤ B)[3] (Equation 2)

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".

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

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 criteria[1]. The 2006 Study proves that regardless of whether the effluent hardness is lower or greater than the upstream hardness, the reasonable worst-case flow condition is the effluent dominated condition (i.e., no receiving water flow)[2]. Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 12 mg/L to 19 mg/L, based on 3 samples in January 2007, November 2011, and August 2012. The upstream receiving water hardness varied from 20 mg/L to 29 mg/L, based on 2 samples collected in January 2007 and August 2012. No downstream receiving water hardness samples were collected during the same period. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 12 mg/L. As demonstrated in the example shown in Table F-7, 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 <u>always</u> at the lowest observed upstream receiving water hardness (i.e., 20 mg/L)
- Upstream receiving water copper concentration <u>always</u> 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.

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

Where:

C_{MIX} = Mixed concentration (e.g. metals or hardness)
C_{RW} = Upstream receiving water concentration

[1] 2006 Study, p. 5700
[2] There are two typographical errors in the 2006 Study in the discussion of Concave Down Metals when the effluent hardness is less than the receiving water hardness. The effluent and receiving water hardness were transposed in the discussion, but the correct hardness values were used in the calculations. The typographical errors were confirmed by the author of the 2006 Study, by email dated 1 April 2011, from Dr. Robert Emerick to Mr. James Marshall, Central Valley Water Board.

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-7 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-7. Copper ECA Evaluation

Lowest Observed Effluent Hardness	**12 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness	**20 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration	**0.3 µg/L[1]**
Copper $ECA_{chronic}$[2]	**1.5 µg/L**

Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	19.92	2.4	2.3	**Yes**
	5%	19.6	2.3	2.3	**Yes**
	15%	18.8	2.2	2.2	**Yes**
	25%	18	2.2	2.1	**Yes**
	50%	16	1.9	1.9	**Yes**
	75%	14	1.7	1.7	**Yes**
Low Flow	100%	12	1.5	1.5	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of **20 mg/L**.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of **12 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-8).

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

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 cadmium, a Concave Up Metal, in Table F-8, below. As previously mentioned, the lowest effluent hardness is 12 mg/L, while the upstream receiving water hardness ranged from 20 mg/L to 29 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 29 mg/L.

In this case for cadmium, the lowest possible fully-mixed downstream hardness is 12 mg/L (see last row of Table F-8), which corresponds to a total recoverable chronic ECA of 0.4 µg/L, using Equations 1 and 2. However, a lower chronic ECA is required to ensure the discharge does not cause toxicity at any location in the receiving water, at or downstream of the discharge, which would be a violation the Basin Plan's narrative toxicity objective[1]. This is because for concave up metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in CTR criterion exceedances[2]. As shown in Table F-8, an acute ECA of 0.4 µg/L is necessary to be protective under all discharge conditions. In this example for cadmium, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

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-8, for cadmium.

[1] "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan, p. III-8.01.)

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

Table F-8. Cadmium ECA Evaluation

Lowest Observed Effluent Hardness	**12 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness	**29 mg/L**
Reasonable Worst-case Upstream Receiving Water Cadmium Concentration	**1.1 µg/L[1]**
Cadmium ECA_{acute}[2]	**0.4 µg/L**

Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Cadmium[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	28.8	1.1	1.1	**Yes**
	5%	28.2	1.1	1.1	**Yes**
	15%	26.5	1.0	1.0	**Yes**
	25%	24.8	0.9	0.9	**Yes**
	50%	20.5	0.8	0.7	**Yes**
	75%	16.3	0.6	0.6	**Yes**
Low Flow	100%	12.0	0.4	0.4	**Yes**

1 Reasonable worst-case upstream receiving water cadmium concentration calculated using Equation 1 for acute criterion at a hardness of **29 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 cadmium 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-9 lists all the CTR hardness-dependent metals and the associated ECA used in this Order.

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

CTR Metals	**ECA (µg/L, total recoverable)**	
	acute	**chronic**
Copper	1.9	1.5
Chromium III	305.9	36.5
Cadmium	0.4	0.5
Lead	4.3	0.17
Nickel	78.0	8.7
Silver	0.08	--
Zinc	19.9	19.9

3. Determining the Need for WQBELs

a. The Central Valley Water Board conducted the RPA in accordance with section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority

pollutants, the State Water Board has held that the Regional Water Boards 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 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.

Not all constituents with no reasonable potential are discussed in this order

i. Cadmium

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for cadmium. The Basin Plan also includes a hardness dependent water quality objective for cadmium. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 0.47 µg/L and the applicable CTR chronic (4-day average) criterion is 0.05 µg/L, as total recoverable. The Basin Plan maximum water quality objective for cadmium is 0.05 µg/L.

(b) RPA Results. The maximum effluent concentration (MEC) for cadmium was non-detect (<3.3 µg/L) as shown in the table below. The maximum observed upstream concentration was also non-detect (<3.3 µg/L). 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 cadmium. 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.

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

Cadmium Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<3.3	<3.3	0.25	0.47	0.05

ii. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. The Basin Plan also includes a hardness dependent water quality objective for copper. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 1.97 µg/L and the applicable CTR chronic (4-day average) criterion is 1.52 µg/L, as total recoverable. The Basin Plan maximum objective for copper is 1.9 µg/L.

(b) RPA Results. The maximum effluent concentration (MEC) for copper was non-detect (<1.17 µg/L) (as total recoverable) while the maximum observed upstream receiving water concentration was also non-detect (<1.17 µg/L) (as total recoverable) as shown in the table below. Therefore, copper in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above either the CTR criteria for the protection of freshwater aquatic life or the Basin Plan maximum water quality objective.

Copper Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<1.17	<1.17	0.5	1.97	1.52

iii. Lead

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 5.49 µg/L and the applicable CTR chronic (4-day average) criterion is 0.21 µg/L, as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for lead was non-detect (<0.88 µg/L) (as total recoverable) while the maximum observed upstream receiving water concentration was also non-detect (<0.88 µg/L) (as total recoverable) as shown in the table below. 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 lead. 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.

Lead Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<0.88	<0.88	0.5	5.49	0.21

iv. Mercury

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for mercury. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 1.40 µg/L and the applicable CTR chronic (4-day average) criterion is 0.77 µg/L., as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for mercury was non-detect (<0.2 µg/L) while the maximum observed upstream receiving water concentration was also non-detect (<0.2 µg/L) as shown in the table below. Therefore, mercury in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above either the CTR criteria for the protection of freshwater aquatic life or the Basin Plan maximum water quality objective.

Mercury Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<0.2	<0.2	0.5	1.40	0.77

v. Nickel

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for nickel. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average)

criterion is 78.0 µg/L and the applicable CTR chronic (4-day average) criterion is 8.7 µg/L., as total recoverable.

(b) RPA Results. The maximum effluent concentration (MEC) for nickel was non-detect (<11.3 µg/L) (as total recoverable) while the maximum observed upstream receiving water concentration was also non-detect (<11.3 µg/L) (as total recoverable) as shown in the table below. 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 nickel. 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.

Nickel Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<11.3	<11.3	1.0	78.0	8.7

vi. Silver

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for silver. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 0.11 µg/L.

(b) RPA Results. The maximum effluent concentration (MEC) for silver was non-detect (<0.5 µg/L) while the maximum observed upstream receiving water concentration was also non-detect (<0.5 µg/L) (as total recoverable) as shown in the table below. 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 silver. 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.

Silver Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<0.5	<0.5	0.25	0.11	--

vii. Zinc

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for zinc. The Basin Plan also includes a hardness dependent water quality objective for zinc. Using the default conversion factors and reasonable worst-case measured hardness, as described in section IV.C.2.e of this Fact Sheet, the applicable CTR acute (1-hour average) criterion is 6.02 µg/L and the applicable CTR chronic (4-day average) criterion is 19.9 µg/L., as total recoverable. The Basin Plan maximum water quality objective for zinc is 6.0 µg/L.

(b) RPA Results. The maximum effluent concentration (MEC) for zinc was non-detect (<4.6 µg/L) (as total recoverable) while the maximum observed upstream receiving water concentration was also non-detect (<4.6 µg/L) (as total recoverable) as shown in the table below. Therefore, zinc in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan maximum water quality objective.

Zinc Effluent and Receiving Water Data (2007-2012):

Date	Effluent (µg/L)	Receiving Water (µg/L)	SIP Minimum Level (µg/L)	Basin Plan Criteria (µg/L)	Acute Criteria (µg/L)	Chronic Criteria (µg/L)
11-8-11	<4.6	<4.6	1.0	6.0	6.02	19.9

viii. 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 EC, TDS, 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, chloride. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, 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.

Table F-10. Salinity Water Quality Criteria/Objectives

Parameter	Secondary MCL[1]	Effluent	
		Average	Maximum
EC (µmhos/cm)	900, 1600, 2200	44.7	75.3
TDS (mg/L)	500, 1000, 1500	[2]	[2]
Sulfate (mg/L)	250, 500, 600	[2]	[2]
Chloride (mg/L)	250, 500, 600	[2]	[2]

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

2 Data not available

(1) Chloride. The secondary MCL 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 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.

(2) Electrical Conductivity. The secondary for 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 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.

(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 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.

(b) RPA Results

(1) Chloride. Effluent and receiving water data for chloride is not available.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent EC of 44.7 µmhos/cm, with a range from 33.5 µmhos/cm to 75.3 µmhos/cm. These levels do not exceed the Secondary MCL. The background receiving water EC averaged 43.4 µmhos/cm.

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

(4) Total Dissolved Solids. Effluent and receiving water data for sulfate is not available.

(c) RPA Results. Based on the relatively low reported EC, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity.

c. Constituents with Limited Data. Not Applicable

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, chlorine residual, pH, settleable solids, diazinon and chlorpyrifos. 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. Aluminum is not a CTR constituent. The Basin Plan includes the narrative toxicity objective, which states that, "*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's *Policy for Application of*

Water Quality Objectives requires the Central Valley Water Board to consider, "*on a case-by case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective*." (Basin Plan, p. IV.-17.00; see also, 40 CFR 122.44(d)(vi).)

The Central Valley Water Board considered all available material and relevant information submitted by the Discharger, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations, the USEPA National Recommended Ambient Water Quality Criteria (NAWQC) and supporting studies, National Recommended Water Quality Criteria-Correction, and site-specific aluminum studies conducted by other dischargers within the Central Valley Region in evaluating the appropriate criteria for protection of the beneficial uses to comply with the narrative toxicity objective.

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. 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 $CaCO_3$) to determine the effects on striped bass and brook trout. The USEPA secondary maximum contaminant level for protection of human health for aluminum is 200 µg/L, evaluated as an annual average.

In April 1999, USEPA released the National Recommended Water Quality Criteria-Correction. There were no corrections to the 1988 aluminum recommended criteria; however, USEPA recognized that they were aware of field data indicating that many high quality waters of the U.S. contain more than 87 µg/L aluminum, when either total recoverable or dissolved is measured (i.e., the higher levels of aluminum did not affect beneficial uses). Information in Footnote L to the NAWQC Correction summary table for aluminum suggests the use of a WER may be appropriate in instances where water quality ambient conditions differ from those used by EPA.

Limited receiving water monitoring data in an unnamed tributary New York Flat Creek (two samples at 20 and 29 mg/L as $CaCO_3$, with a pH of

7.07 and 7.00) indicates the NAWQC study conditions (pH and hardness ranges) are somewhat similar too, but not specifically within the range observed in the receiving water. Hardness of the discharge from the settling basins to the on-site storage reservoir to the unnamed tributary to New York Flat Creek ranged from 12 to 19 mg/L as $CaCO_3$ for three samples, with pH ranges from 6.57 to 8.15. No data is available for the hardness or pH of the discharge from the on-site storage reservoir to the unnamed tributary to New York Flat Creek.

Site specific aluminum toxicity studies have been conducted within the Central Valley Water Board Region. These studies were performed by dischargers for the purpose of evaluating the appropriate chronic aquatic life criterion for implementing the Basin Plan's narrative toxicity objective. The results of the aluminum toxicity studies indicate that the NAWQC chronic criterion of 87 µg/L aluminum may be overly stringent for hardness ranging from 16 mg/L to 250 mg/L as $CaCO_3$.

Therefore, due to 1) the site-specific hardness and pH conditions being greater than the hardness conditions under which the NAWQC chronic criterion was developed, 2) the results of studies conducted in the Central Valley Water Board Region, 3) the Discharger's chronic and acute toxicity studies, which showed no adverse effects or toxicity at 100% effluent, and 4) the presence of fish life in both the backwash settling ponds and on-site storage reservoir, the applicability of the NAWQC chronic criterion remains uncertain. For these reasons, the NAWQC chronic criterion of 87 µg/L has not been included in the Reasonable Potential Analysis at this time. However, although there is substantial doubt that the 87 µg/L criterion is applicable, the appropriate chronic aquatic life criterion may be somewhere between the 87 µg/L criterion and the higher acute aquatic life and Secondary MCL objectives. Therefore the appropriate chronic aquatic life criterion must be determined. This Order requires the Discharger to conduct a site-specific study to determine the appropriate chronic aquatic life criterion for aluminum. The NAWQC acute aquatic life criterion of 750 µg/L and the USEPA secondary MCL for protection of human health of 200 µg/L have been used to conduct the RPA.

(b) RPA Results. The effluent concentrations for 14 samples collected from the backwash settling ponds (Discharge Point No. 001) from May 2008 to December 2011, ranged from <10 (MDL) to 510 µg/L for total recoverable aluminum during the term of the previous permit. The average for the 14 samples from May 2008 to December 2011 was 192 µg/L. The results calculated on a calendar year for the quarterly samples at Discharge Point 001 were 154 µg/L for 2008, 231 µg/L for 2009 (based on only two quarters of sampling), 150 µg/L for 2010, and 253 µg/L for 2011. The sample result for the first quarter sample in March 2012 was 696 µg/L. The MEC for aluminum at Discharge Point 001 was below the aquatic life criterion of 750 µg/L.

The discharger also sampled the source water from Forbestown Ditch to the treatment Facility on 15 August 2012 and reported a result for total recoverable aluminum of 525 µg/L.

The Discharger uses a polymer containing aluminum in the drinking water treatment process. The result above of the single sample for the source water used for the drinking water indicates aluminum is also present in the source water. Based on the information above the discharge does not have reasonable potential to exceed the acute aquatic life criterion of 750 µg/L. However, the discharge from Discharge Point 001 does have the reasonable potential to exceed the secondary MCL of 200 µg/L (annual average). This Order requires the Discharger to conduct a site-specific study to determine the appropriate chronic aquatic life criterion for aluminum and contains a reopener provision for aluminum to establish a chronic aquatic life criterion, if appropriate, based on results of the study.

The Discharger is currently in the process of discontinuing the use of the aluminum-based coagulant in the wastewater treatment process. This use was the likely source of aluminum in the effluent.

(c) WQBELs. This Order contains a final annual average effluent limitation for aluminum of 200 µg/L (calendar year) for discharges to the on-site storage reservoir (Discharge Point 001).

(d) Plant Performance and Attainability. Analysis of the annual average effluent data indicates that the discharge has exceeded 200 µg/L as an annual average. The Central Valley Water Board concludes, therefore, that immediate compliance with the annual average effluent limitations is not feasible, and a compliance schedule along with interim effluent limits is warranted, to give the Discharger time to come into compliance with the new effluent limits.

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

(b) RPA Results. 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. 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. The Discharger does not add chemicals for dechlorination of the filter backwash water and relies on

passive dechlorination in the on-site storage reservoir to comply with the WQBELs for total residual chorine. The compliance point in the previous Order, R5-2007-0078 (Discharge Point 002) has been moved to Discharge Point 001. This seems appropriate since the on-site storage reservoir is hydrologically connected to the unnamed tributary which flows into New York Flat Creek. However, since Chlorine sampling has not been previously required at Discharge Point 001 it is unknown whether immediate compliance with these effluent limitations is feasible, however, based on conversations with the Discharger, immediate compliance with the proposed effluent limits is feasible.

iii. Diazinon and Chlorpyrifos

(a) WQO. The Sacramento River has been identified on the 303(d) list as an impaired water body due to elevated concentrations of diazinon and chlorpyrifos. The Central Valley Water Board recently completed a total maximum daily load (TMDL) for diazinon and chlorpyrifosin in the the Sacramento and Feather Rivers and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives. The Basin Plan Amendment for the control of diazinon and chlorpyrifos was adopted on 21 October 2005 and was approved by the State Water Board on 2 May 2006. The amendment was approved by USEPA and went into effect on 20 December 2006.

The amendment "…*modifies the Basin Plan Chapter III (Water Quaity Objectives) to establish site specific numeric objectives for diazinon and chlorpyrifos in the Sacramento River, and identifies the requirement to meet the additive toxicity formula already in Basin Plan Chapter IV (Implementation), for the additive toxicity of diazinon abd chlorpyrifos."*

The amendment provides that: *"The Waste Load Allocations (WLA) for all NPDES-permitted dischargers … shall not exceed the sum (S) of one (1) as defined below:*

Where

C_D = *diazinon concentration in µg/L of the point source discharge*
C_C = *chlorpyrifos concentration in µg/L of the point source discharge*
WQO_D = *acute or chronic diazinon water quality objective in µg/L*
WQO_C = *acute or chronic chlorpyrifos water quality objective in µg/L*

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as 'non-detectable' concentrations are considered to be zero."

(b) RPA Results. Effluent and receiving water data for the Facility are not available. However, the waste load allocation applies to all NPDES discharges. As stated above, diazinon and chlorpyrifos have been identified as constituents of concern in the Sacramento River, to which the discharge is hydraulically connected.

(c) WQBELs. Average monthly effluent limitations and maximum daily effluent limitations have been calculated using the procedures in Section 1.4 of the SIP and consistent with the TMDL waste load allocation resulting in the following effluent limits for diazinon and chlorpyrifos.

Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\text{-}avg}}{0.079} + \frac{C_{C\text{-}avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\text{-}avg}}{0.16} + \frac{C_{C\text{-}avg}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

(d) Plant Performance and Attainability. No data is available from the Facility to indicate the presence or absence of diazinon and chlorpyrifos. It is unlikely that diazinon and chlorpyrifos will be detected at concentrations exceeding applicable water quality objectives as sales of all non-agricultural uses of diazinon were banned on 31 December 2004 and sales of the majority of non-agricultural uses of chlorpyrifos were banned in December 2001. The discharger does not add diazinon or chlorpyrifos to the process water. In addition, the presence of diazinon and chlorpyrifos as contaminants in chemicals the operator adds to the water for disinfection and coagulation is unlikely. Therefore, the immediate compliance with the effluent limit is feasible.

iv. 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. Due to the water treatment process the pH can be changed as compared to the source water. Effluent limits are needed to ensure that such changes in pH of the effluent do not cause the pH of the

receiving water to be out of the acceptable range (6.5 to 8.5) as specified in the basin plan. The effluent pH at Discharger Point 001 ranged from 6.57 to 8.17.

(c) WQBELs. Effluent limitations at Discharge Point 001 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. Based on monitoring data from the term of the previous Order No. R5-2007-0078, the discharge from the settling ponds (Discharge Point 001) was within the range of 6.5 to 8.5. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. 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.*" The previous permit used 0.1 mL/L as an AMEL, and 0.2 mL/L as an MDEL to implement the Basin Plan's narrative objective. These concentrations have proven to be effective in preventing exceedances of the Basin Plan's narrative objective for settleable substances. Therefore, these limits were carried over to this permit.

(b) RPA Results. Settleable solids have the potential of being discharged in the settled filter backwash water if an upset occurs or if the Facility is not operated properly. Therefore, this order establishes effluent limitations for settleable solids.

(c) WQBELs. This Order contains average monthly and average daily effluent limitations for settleable solids. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

(d) Plant Performance and Attainability. Settleable solids were not detected in the effluent from the settling ponds (Discharge Point 001), based on monitoring conducted between May 2008 and December 2011. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for total chlorine residual, pH, settleable solids, aluminum, diazinon and chlorpyrifos. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below.

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

$$ECA = C + D(C - B) \quad \text{where } C>B, \text{ and}$$
$$ECA = C \quad \text{where } C \leq B$$

where:

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

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

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

d. Aquatic Toxicity Criteria. WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e., LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

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

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

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

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

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

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

Table F-11. Summary of Water Quality-Based Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units			6.5	8.5
Settleable Solids	mL/L-hr	0.1	0.2		

c. 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.

d. 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.

e. Aluminum. Aluminum to exceed the Secondary MCL of 200 µg/L as an annual average (calendar year).

f. Chlorpyrifos and Diazinon. Chorpyrifos and diazinon concentrations shall not exceed the sum of one (1.0) as defined below:

i. Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\text{-}avg}}{0.079} + \frac{C_{C\text{-}avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

ii. Maximum Daily Effluent Concentration

$$S_{AMEL} = \frac{C_{D\text{-}max}}{0.6} + \frac{C_{C\text{-}max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

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.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires two samples (1st and 3rd year or permit) in permit lifecycle chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

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

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a

NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions 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 TRE in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

D. Final Effluent Limitations

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

[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)

does not include effluent limitations expressed in terms of mass. 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.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. The rationale for using the instantaneous minimum and maximum effluent limitations for pH 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).

All effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order. The effluent limitations (total residual chlorine and acute toxicity) at Discharge Point 002 have been removed; however, the point of compliance has been changed to Discharge Point 001. The previous limits at Discharge Point 002 are not applicable to Discharge Point 001.

4. Satisfaction of Antidegradation Policy

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will

result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

a. **Surface Water.** The permitted surface water 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.

a. **Groundwater.** The Discharger utilizes unlined settling basins for treatment of filter backwash water. Filter backwash water contains constituents such as TDS, EC, and metals that may be present in the raw water. Percolation from the settling basins may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution No. 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution No. 68-16 that:

   i. the degradation is limited in extent;

   ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

   iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and

   iv. the degradation does not result in water quality less than that prescribed in the Basin Plan.

   This Order does not allow for an increase in flow or mass of pollutants to groundwater from that allowed in Order No. R5-2007-0078. Therefore, a complete antidegradation analysis is not necessary. The permitted discharge is consistent with the antidegradation provisions of State Water Board Resolution No. 68-16. This Order retains the groundwater limitations from Order No. R5-2007-0078, which requires that the discharge shall not cause the underlying groundwater to be degraded. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions

on flow and total suspended solids. The WQBELs consist of restrictions on pH, total chlorine residual, settleable solids, aluminum, diazinon, and chlorpyrifos. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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

Summary of Final Effluent Limitations
Discharge Point No. 001

Table F-12. Summary of Final Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				Basis[1]
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD		0.070			DC
pH	standard units			6.5	8.5	BP
Settleable Solids	mL/L-hr	0.1	0.2			BP
Total Suspended Solids	mg/L	30	50			BPJ

[1] DC – Based on the design capacity of the Facility.
BPJ – Based on best professional judgment.
BP – Based on water quality objectives contained in the Basin Plan.

a. **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.

b. **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.

c. Aluminum. Aluminum not to exceed the Secondary MCL of 200 µg/L as an annual average (calendar year).

d. Chlorpyrifos and Diazinon. Chorpyrifos and diazinon concentrations shall not exceed the sum of one (1.0) as defined below:

i. Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\text{-}avg}}{0.079} + \frac{C_{C\text{-}avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L
$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

ii. Maximum Daily Effluent Concentration

$$S_{AMEL} = \frac{C_{D\text{-}max}}{0.6} + \frac{C_{C\text{-}max}}{0.025} \leq 1.0$$

$C_{D\text{-}max}$ = maximum daily diazinon effluent concentration in µg/L
$C_{C\text{-}max}$ = maximum daily chlorpyrifos effluent concentration in µg/L

E. Interim Effluent Limitations - Aluminum

1. Compliance Schedule for Aluminum.

Based on the sample results for the effluent, it appears that the Discharger may be in immediate non-compliance with effluent limitations for aluminum upon issuance of the permit. New or modified control measures are necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Compliance Schedule Policy includes a provision that authorizes the use of compliance schedules in NPDES permits for effluent limitations based on a newly interpreted water quality objective or criterion. The WQBELs for aluminum are based on a new interpretation of the narrative toxicity standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the effluent limitations for aluminum is established in the Order. The schedule is as short as possible considering the Discharger's intent to eliminate the surface water discharge within five years, and the need for upgraded treatment to meet the new limitations.

Interim performance-based MDELs have been established in this Order. The interim limitations were determined as described in section IV.E.3., below, and are in effect through permit expiration date . 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 prepare and implement a pollution

prevention plan that is in compliance with CWC section **13263.3(d)(3**. The interim numeric effluent limitations and source control measures will result in the highest discharge quality that can reasonably be achieved until final compliance is attained.

2. Interim Limits for Aluminum.

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

The interim limitations for 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.

When there are less than 10 sampling data points available, the EPA Technical Support Document for Water Quality-based Toxics Control ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5 2).

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

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

Table F-13. Interim Effluent Limitation Summary– Discharge Point 001

Parameter	Units	Maximum Effluent Concentration	Mean	Standard Deviation	Number of Samples	Interim Limitation (Annual Average-Calendar Year)
Aluminum	µg/L	696	217	176	16	798

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

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

a. **pH**. Order No. R5-2007-0078 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. 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.

b. Turbidity. Order No. R5-2007-0078 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.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

III. 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 authorize the Regional Water Boards 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 raw water entering the Facility for treatment and/or storage in the on-site storage reservoir.

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.

2. Monitoring for chlorpyrifos and diazinon (1/year) has been included in this Order to determine compliance with the effluent limitations and the Basin Plan.

3. Effluent monitoring frequencies and sample types for flow (continuous), turbidity, settleable solids, total suspended solids, ammonia, acute and chronic toxicity have been retained from Order No. R5-2007-0078 to determine compliance with effluent limitations for these parameters. Effluent monitoring frequencies for chlorine residual, pH have been increased at Discharge Point 001. Monitoring for manganese, nickel, and hardness has been added at Discharge Point 001.

4. Monitoring data collected over the existing permit term for bis (2-ethylhexyl) phthalate did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, a quarterly monitoring requirement for this parameter has not been retained from Order No. R5-2007-0078. Monitoring for this constituent is included in the priority pollutant monitoring required twice during the third year of the permit term.

5. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2007-0078, and was used to conduct a RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established has been included. This Order requires monitoring twice during the third year of the permit term in order to collect data to conduct an RPA for the next permit renewal. See Attachment I of more detailed requirements related to performing priority pollutant monitoring.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with the previous Order No. R5-2007-0078 annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Consistent with the previous Order No. R5-2007-0078 chronic whole effluent toxicity testing is required once during the term of this 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.

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.6.a. of this Order.

2. 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. During the third year of this permit term, the Discharger is required to conduct monitoring twice of the effluent at EFF-001 and of the receiving water at RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I. Rationale for Provisions

F. Standard Provisions

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

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with

40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

G. 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. Aluminum Reopener. This Order requires the Discharger to conduct a site-specific study or other study acceptable to the Executive Officer to determine the appropriate chronic aquatic life criterion for aluminum. If the results of the Study indicate the appropriate chronic aquatic life criterion is being exceeded in the discharge, the permit may be reopened and aluminum effluent limitations modified, if appropriate.

c. Pollution Prevention. This Order requires the Discharger prepare pollution prevention plans following CWC section **13263.3(d)(3)** for **aluminum**. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans

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 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. 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. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including:

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

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

f. 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.

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, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

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

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

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states,

"*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.*" Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

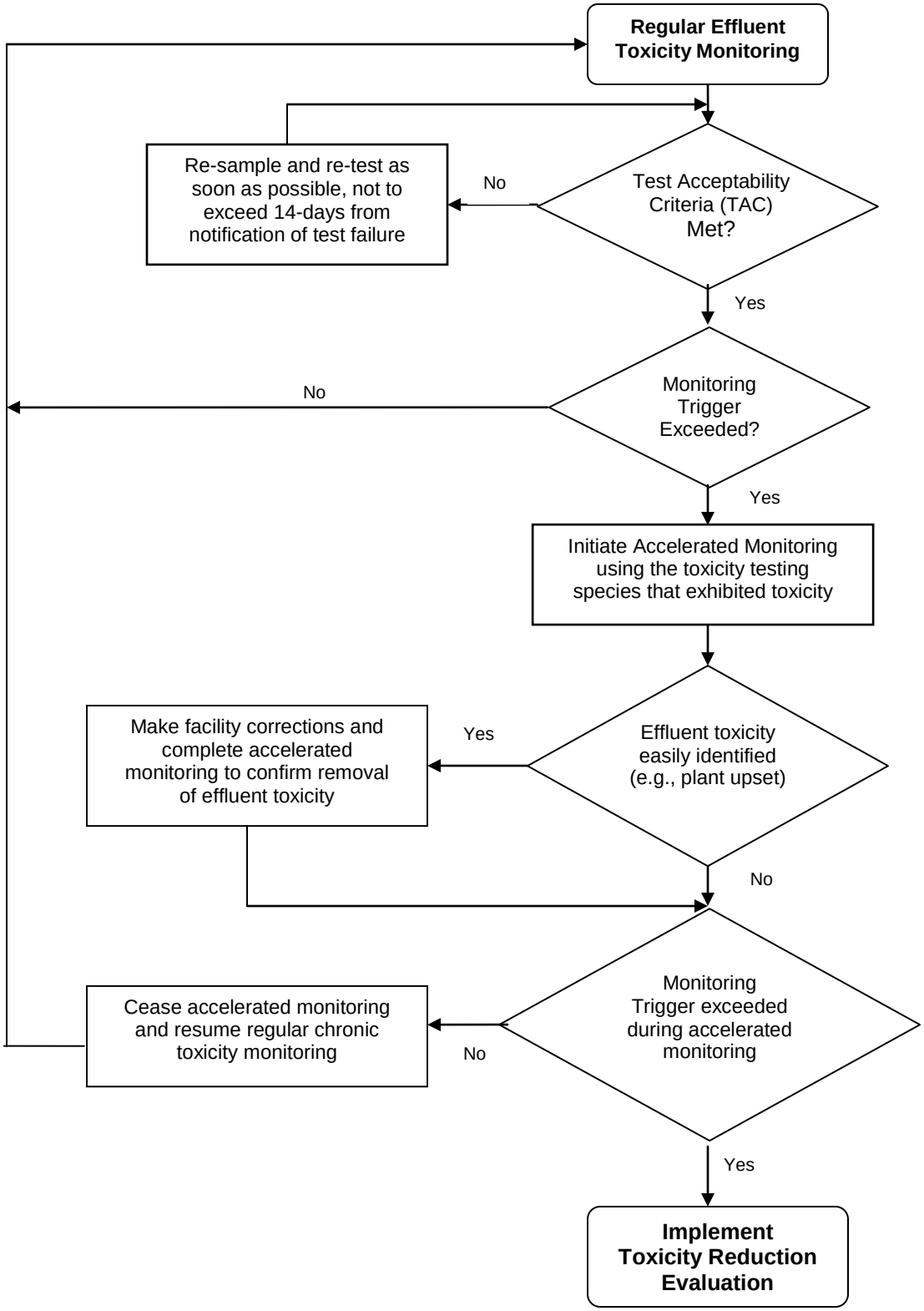
See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Workplan in accordance with 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. Effluent and Receiving Water Characterization Study. This Order requires the Discharger to prepare a water monitoring study to ensure adequate information is available for the next permit renewal.

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: **Aluminum**. The Discharger shall comply with the following time schedule in Section Vi.C.7.

d. Aluminum Site-Specific Study. This Order requires the Discharger to conduct a site-specific study or other study acceptable to the Executive Officer to determine the appropriate chronic aquatic life criterion for aluminum.

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 New York Flat Creek.

b. CWC Section 13263.3(d)(2) Pollution Prevention Plans. A pollution prevention plan for **aluminum** is required in this Order per CWC section 13263.3(d)(1)(C). The pollution prevention plans required in section VI.C.3 and in section VI.C.7 of this Order, shall, at a minimum, meet the requirements outlined in CWC section 13263.3(d)(2). The minimum requirements for the pollution prevention plans include the following:

i. An analysis of one or more of the pollutants, as directed by the State Water Board, a Regional Water Board, or a POTW, that the Facility discharges into water or introduces into POTWs, a description of the sources of pollutants, and a comprehensive review of the processes used by the Discharger that result in the generation and discharge of the pollutants.

ii. An analysis of the potential for pollution prevention to reduce the generation of the pollutants, including the application of innovative and alternative technologies and any adverse environmental impacts resulting from the use of these methods.

iii. A detailed description of the tasks and time schedules required to investigate and implement various elements of pollution prevention techniques.

iv. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action.

v. A description of the Discharger's existing pollution prevention methods.

vi. A statement that the Discharger's existing and planned pollution prevention strategies do not constitute cross-media pollution transfers unless clear environmental benefits of such an approach are identified to the satisfaction

of the State Water Board, the Regional Water Board, or the POTW, and information that supports that statement.

vii. Proof of compliance with the Hazardous Waste Source Reduction and Management Review Act of 1989 [Article 11.9 (commencing with section 25244.12) of Chapter 6.5 of Division 20 of the Health and Safety Code) if the Discharger is also subject to that act.

4. Construction, Operation, and Maintenance Specifications

a. Backwash Pond Operating Requirements. This Order requires the Discharger to maintain adequate freeboard, operate the backwash ponds to prevent breeding of mosquitoes and prevent inundation or washout.

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions

a. Sludge Disposal Requirements. The Discharger removes sludge from the backwash settling ponds annually for transport to a landfill for disposal. This Order requires an annual report for sludge disposal.

b. Low Threat Discharges. Order No. R5-2007-0078 included effluent limitations, special provisions, and monitoring requirements for low threat discharges by the Discharger, such as well development water, construction dewatering, pump/well testing, pipeline/tank pressure testing, pipeline/tank flushing or dewatering, condensate discharges, unspecified water supply system discharges and other miscellaneous dewatering/low threat discharges. The Central Valley Water Board issued Order No. R5-2008-0081, *Waste Discharge Requirements for Dewatering and Other Low Threat Discharges* (General Order) on 12 June 2008. The General Order applies to individuals, public agencies, private businesses, and other legal entities discharging relatively pollutant-free wastewaters that pose little or no threat to the quality of surface waters, for a duration of either 4 months or less in duration or have an average dry weather flow less than 0.25 MGD. This Order does not apply to low threat discharges from the Facility and requires the Discharger to submit a Notice of Applicability (NOA) for coverage under Order No. R5-2008-0081 prior to discharging low threat wastewater.

13. Compliance Schedules – Aluminum

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: Aluminum. The Discharger submitted a request, and justification (dated 17 April 2013), for a compliance schedule for compliance with final effluent limitations for Aluminum. The compliance schedule justification included all items specified in the Compliance Schedule Policy. This Order establishes a compliance schedule for the new Aluminum requirements and requires full compliance by **expiration date of this Order.** The Discharger shall comply with the following time

schedule to ensure compliance with the final effluent limitations (200 µg/L secondary MCL objective as an annual average):

Table F-14. Compliance Schedule - Aluminum

Task	Compliance Date
Submit and Implement Pollution Prevention Plan (PPP)[1] for aluminum	**Within 6 months** after effective date of this Order
Submit Method of Compliance Workplan/Schedule	**Within 1 year** after effective date of this Order
Progress Reports[2]	**31 January**, annually, after approval of work plan until final compliance
Submit Method of Compliance Report	**Within 2 years** after the permit effective date
Begin Compliance Project	**Within 3 years** after the permit effective date
Full Compliance	**Within 5 years** after the permit effective date

[1] The PPP for aluminum shall be prepared and implemented in accordance with CWC section 13263.3(d)(2) as outlined in the Fact Sheet.

[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 with the final effluent limitations.

IV. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

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

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices **by 5:00 p.m. on 12 June 2013.**

C. Public Hearing

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

Date:	**25, 26 July 2013**
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

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

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

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

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Ron Falkowski at (530) 224-3227.

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
Aluminum	µg/L	510[1]	8.53[2]	200	750[3]	87[4,5]	-	-	-	200[6]	Yes
Cadmium	µg/L	<3.3	<3.3	0.05	--	0.47	--	--	0.4[7]	5[8]	No, B>C
Copper	µg/L	<1.17	<1.17	1.52	--	1.52	1300	--	1.9[7]	1000[6]	No
Lead	µg/L	<0.88	<0.88	0.21	5.49	0.21	--	--	--	15[8]	No, B>C
Mercury	µg/L	<0.2	<0.2	0.05	0.77	1.40	--	--	--	2[8]	No, B>C
Nickel	µg/L	<11.3	<11.3	8.68	8.68	78.04	610	4,600	78[7]	100[6]	No, B>C
Silver	µg/L	<0.5	<0.5	0.11	--	0.11	--	--	--	100[6]	No, B>C
Zinc	µg/L	<4.6	<4.6	6.02	19.87	6.02	--	--	19.9[7]	5000[6]	No

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

Footnotes:

(1) Sample analysis from Discharge Point 001 – annual average is 192 µg/L
(2) ND sample- concentration given as MDL (samples taken from unnamed tributary to New York Flat Creek)
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average
(4) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day Average.
(5) The chronic criterion for the protection of freshwater aquatic life of 87 µg/L may not be applicable because receiving water conditions are not similar to those under which the criterion was developed. The discharge does exhibit reasonable potential to exceed the acute criterion for the protection of freshwater aquatic life and the secondary MCL for aluminum.
(6) Secondary MCL
(7) Based on minimum receiving water hardness of 12 mg/L CaCO3
(8) Primary 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
Chlorpyrifos[1]	µg/L	--	0.025[3]	0.015[3]	--	--	--	--	0.321	0.0080	--	0.527	0.0079	0.0079	1.55	0.012	3.11	0.025	0.012	0.025
Diazinon[1]	µg/L	--	0.16[3]	0.10[3]	--	--	--	--	0.321	0.051	--	0.527	0.051	0.053	1.55	0.079	3.11	0.016	0.079	0.016

[1] The calculated AMEL and MDEL for chlorpyrifos and diazinon were used to determine effluent limitations consistent with the TMDL waste load allocation.
Basin Plan water quality objectives

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

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

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

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

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

II. Monitoring Requirements.

A. Semi-Annual Monitoring. Priority pollutant samples shall be collected from the effluent and upstream receiving water (EFF-001 and RSW-001) and analyzed for the constituents listed in Table I-1. **Twice during the third year of the permit cycle** and the results of such monitoring be submitted to the Central Valley Water Board, during the fourth year of the permit term. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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

D. Sample type. All effluent and receiving water samples shall be taken as grab samples.

E. Additional Monitoring/Reporting Requirements. The Discharger shall conduct the monitoring and reporting in accordance with the General Monitoring Provisions and Reporting Requirements in Attachment E.

Table I-1. Priority Pollutants

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

[1] The reporting levels required in these tables for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

CTR #	Constituent	CAS Number	Maximum Reporting Level[1] µg/L or noted
39	Toluene	108883	2
40	trans-1,2-Dichloroethylene	156605	1
43	Trichloroethene	79016	2
44	Vinyl chloride	75014	0.5
	Methyl-tert-butyl ether (MTBE)	1634044	
	Trichlorofluoromethane	75694	
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	
	Styrene	100425	
	Xylenes	1330207	
60	1,2-Benzanthracene	56553	5
85	1,2-Diphenylhydrazine	122667	1
45	2-Chlorophenol	95578	5
46	2,4-Dichlorophenol	120832	5
47	2,4-Dimethylphenol	105679	2
49	2,4-Dinitrophenol	51285	5
82	2,4-Dinitrotoluene	121142	5
55	2,4,6-Trichlorophenol	88062	10
83	2,6-Dinitrotoluene	606202	5
50	2-Nitrophenol	25154557	10
71	2-Chloronaphthalene	91587	10
78	3,3'-Dichlorobenzidine	91941	5
62	3,4-Benzofluoranthene	205992	10
52	4-Chloro-3-methylphenol	59507	5
48	4,6-Dinitro-2-methylphenol	534521	10
51	4-Nitrophenol	100027	10
69	4-Bromophenyl phenyl ether	101553	10
72	4-Chlorophenyl phenyl ether	7005723	5
56	Acenaphthene	83329	1
57	Acenaphthylene	208968	10
58	Anthracene	120127	10
59	Benzidine	92875	5
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2
63	Benzo(g,h,i)perylene	191242	5
64	Benzo(k)fluoranthene	207089	2
65	Bis(2-chloroethoxy) methane	111911	5
66	Bis(2-chloroethyl) ether	111444	1

CTR #	Constituent	CAS Number	Maximum Reporting Level[1] µg/L or noted
67	Bis(2-chloroisopropyl) ether	39638329	10
68	Bis(2-ethylhexyl) phthalate	117817	5
70	Butyl benzyl phthalate	85687	10
73	Chrysene	218019	5
81	Di-n-butylphthalate	84742	10
84	Di-n-octylphthalate	117840	10
74	Dibenzo(a,h)-anthracene	53703	0.1
79	Diethyl phthalate	84662	10
80	Dimethyl phthalate	131113	10
86	Fluoranthene	206440	10
87	Fluorene	86737	10
90	Hexachlorocyclopentadiene	77474	5
92	Indeno(1,2,3-c,d)pyrene	193395	0.05
93	Isophorone	78591	1
98	N-Nitrosodiphenylamine	86306	1
96	N-Nitrosodimethylamine	62759	5
97	N-Nitrosodi-n-propylamine	621647	5
95	Nitrobenzene	98953	10
53	Pentachlorophenol	87865	1
99	Phenanthrene	85018	5
54	Phenol	108952	1
100	Pyrene	129000	10
	Aluminum	7429905	50
1	Antimony	7440360	5
2	Arsenic	7440382	10
15	Asbestos	1332214	
	Barium	7440393	
3	Beryllium	7440417	2
4	Cadmium	7440439	0.25
5a	Chromium (total)	7440473	2
5b	Chromium (VI)	18540299	10
6	Copper	7440508	0.5
14	Cyanide	57125	5
	Fluoride	7782414	
	Iron	7439896	
7	Lead	7439921	0.5
8	Mercury	7439976	0.5

CTR #	Constituent	CAS Number	Maximum Reporting Level[1] µg/L or noted
	Manganese	7439965	
	Molybdenum	7439987	
9	Nickel	7440020	5
10	Selenium	7782492	5
11	Silver	7440224	0.25
12	Thallium	7440280	1
	Tributyltin	688733	
13	Zinc	7440666	1
110	4,4'-DDD	72548	0.05
109	4,4'-DDE	72559	0.05
108	4,4'-DDT	50293	0.01
112	alpha-Endosulfan	959988	0.02
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01
	Alachlor	15972608	
102	Aldrin	309002	0.005
113	beta-Endosulfan	33213659	0.01
104	beta-Hexachlorocyclohexane	319857	0.005
107	Chlordane	57749	0.1
106	delta-Hexachlorocyclohexane	319868	0.005
111	Dieldrin	60571	0.01
114	Endosulfan sulfate	1031078	0.05
115	Endrin	72208	0.01
116	Endrin Aldehyde	7421934	0.01
117	Heptachlor	76448	0.01
118	Heptachlor Epoxide	1024573	0.01
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02
119	PCB-1016	12674112	0.5
120	PCB-1221	11104282	0.5
121	PCB-1232	11141165	0.5
122	PCB-1242	53469219	0.5
123	PCB-1248	12672296	0.5
124	PCB-1254	11097691	0.5
125	PCB-1260	11096825	0.5
126	Toxaphene	8001352	0.5
	Atrazine	1912249	
	Bentazon	25057890	

CTR #	Constituent	CAS Number	Maximum Reporting Level[1] µg/L or noted
	Carbofuran	1563662	
	2,4-D	94757	
	Dalapon	75990	
	1,2-Dibromo-3-chloropropane (DBCP)	96128	
	Di(2-ethylhexyl)adipate	103231	
	Dinoseb	88857	
	Diquat	85007	
	Endothal	145733	
	Ethylene Dibromide	106934	
	Glyphosate	1071836	
	Methoxychlor	72435	
	Molinate (Ordram)	2212671	
	Oxamyl	23135220	
	Picloram	1918021	
	Simazine (Princep)	122349	
	Thiobencarb	28249776	
16	2,3,7,8-TCDD (Dioxin)	1746016	
	2,4,5-TP (Silvex)	93765	
	Diazinon	333415	
	Chlorpyrifos	2921882	
	Ammonia (as N)	7664417	
	Chloride	16887006	
	Flow		
	Hardness (as $CaCO_3$)		
	Foaming Agents (MBAS)		
	Nitrate (as N)	14797558	
	Nitrite (as N)	14797650	2,000
	pH		400
	Phosphorus, Total (as P)	7723140	0.1
	Specific conductance (EC)		
	Sulfate		
	Sulfide (as S)		500
	Sulfite (as SO_3)		
	Temperature		
	Total Disolved Solids (TDS)		