**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**CENTRAL VALLEY REGION**

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**ORDER R5-2013-XXXX**
**NPDES NO. CA0078174**

# WASTE DISCHARGE REQUIREMENTS FOR THE CALMAT CO., WALTER A. AND ELIZABETH A. BAUN, AND DARRELL B. AND JANET DELEVAN SANGER SAND AND GRAVEL PLANT FRESNO COUNTY

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

## Table 1. Discharger Information

| | |
|---|---|
| **Discharger** | CalMat Co., Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan |
| **Name of Facility** | Sanger Sand and Gravel Plant |
| **Facility Address** | 17041 E Kings Canyon Road |
| | Sanger, CA 93657 |
| | Fresno 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 CalMat Co., Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan from the discharge point 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 | Process and Excavation Area Water | 36º 43' 2" N | 119º 29' 32" W | Kings River |

## 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>** |

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** | CalMat Co., Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan |
| **Name of Facility** | Sanger Sand and Gravel Plant |
| **Facility Address** | 17041 E Kings Canyon Road |
| | Sanger, CA 93657 |
| | Fresno County |
| **Facility Contact, Title, and Phone** | Lynn Parker, Assistant Plant Manager (559) 787-2534 |
| **Mailing Address** | Same as Facility Address |
| **Type of Facility** | Sand and gravel excavation and processing facility |
| **Facility Design Flow** | 2.9 million gallons per day |

## II. FINDINGS

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

**A. Background.** The CalMat Co. et al. (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2007-0065 and National Pollutant Discharge Elimination System (NPDES) Permit No CA0078174. The Discharger submitted a Report of Waste Discharge, dated 3 February 2012, and applied for a NPDES permit renewal to discharge up to 2.9 million gallons per day (mgd) of process wastewater from Sanger Sand and Gravel Plant (hereinafter Facility). Additional background information is provided in the Fact Sheet (Attachment F).

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

**B. Facility Description**. The Discharger owns and operates the sand and gravel excavation and processing Facility. Water (a mixture of groundwater and recycled water from the supply pond) is used to wash aggregate at the aggregate processing plant. No chemicals are added during washing. The process wastewater is discharged to a settling pond and then to a supply pond. The impounded processed water in the supply pond is either recycled back for reuse in processing or discharged through a porous cobble/aggregate levee at Discharge Point 001 (see table on cover page) to the Kings River, a water of the United States, between Friant-Kern Canal and Peoples Weir within the South Valley Floor Hydrologic Unit, Consolidated Hydrologic Area (No. 551.70). Attachment B provides maps 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 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 Attachment G 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 (Pub. Resources Code, § 21000 et seq.).

**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 Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Point Source Category, Construction Sand and Gravel Subcategory in 40 CFR 436 and 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 the *Water Quality Control Plan for the Tulare Lake Basin Second Edition (Revised*

*January 2004)* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Table II-1 of the Basin Plan identifies the beneficial uses of certain specific water bodies. The Kings River is listed in Table II-1. 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. As discussed in detail in the Fact Sheet, beneficial uses applicable to the Kings River between the Friant-Kern Canal and Peoples Weir are listed in Table 5 below.

The Basin Plan also designates beneficial uses for groundwater underlying the Facility. Groundwater underlying the Facility is in Detailed Analysis Unit (DAU) # 236 of the Kings Basin. The designated uses of groundwater for this DAU are listed in Table 5 below.

**Table 5. Basin Plan Beneficial Uses**

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 | Kings River – Friant-Kern Canal to Peoples Weir | Existing:<br>Municipal and domestic supply (MUN);<br>Agricultural supply (AGR);<br>Industrial process supply (PRO);<br>Water contact recreation (REC-1);<br>Non-contact water recreation (REC-2);<br>Warm freshwater habitat (WARM);<br>Wildlife habitat (WILD); and<br>Groundwater recharge (GWR). |
| -- | Groundwater | Existing:<br>Municipal and domestic supply (MUN);<br>Agricultural supply (AGR);<br>Industrial service supply (IND); and<br>Industrial process supply (PRO). |

Requirements of this Order specifically 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 Total Maximum Daily Load (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 limitations 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 effluent limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules or interim effluent limitations.

**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 acute and chronic whole effluent toxicity, electrical conductivity, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. The rationale for including these limitations is explained in the Fact Sheet (Attachment F).

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 standard[s] 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. This Order, unlike previous Order R5-2007-0065, does not include a manganese effluent limitation or mass-based effluent limitations for total suspended solids. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

**P. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or

becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, 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 Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

**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 (Attachment F).

**S. Provisions and Requirements Implementing State Law.** The provisions/requirements in section V.B, VI.A.2.m, and portions of section 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. R5-2007-0065 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 pollutants or wastewater at a location or in a manner different from that described in the Findings and the Fact Sheet (Attachment F) 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 condition of pollution or nuisance as defined in section 13050 of the Water Code.

**D.** Discharge of waste classified as ‘hazardous’ as defined in Title 23, California Code of Regulations (CCR), Section 2521(a) , et seq., or ‘designated’, as defined in Section 13173 of the Water Code, is prohibited.

**E.** Discharges of waste from onsite and offsite ready-mix concrete and asphalt operations to surface water are prohibited.

## IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

### A. Effluent Limitations – Discharge Point No. 001

#### 1. Final Effluent Limitations – Discharge Point No. 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001A until establishment of Monitoring Location EFF-001B, as required by Special Provision VI.C.2.c. of this Order, at which time compliance shall then be

measured at Monitoring Location EFF-001B as described in the Monitoring and Reporting Program (Attachment E):

**a.** The effluent limitations in Table 6:

**Table 6. Final Effluent Limitations – Discharge Point No. 001**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | 30-Day Median | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| ***Conventional Pollutants*** | | | | | | |
| Total Suspended Solids | mg/L | -- | 20 | 30 | -- | -- |
| pH | standard units | -- | -- | -- | 6.5 | 8.3 |
| Electrical Conductivity @ 25 °C | µmhos/cm | 200 | -- | 250 | -- | -- |

**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
**ii.** 90%, median for any three consecutive bioassays.

**c. Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

**d. Average Monthly Flow.** The average monthly discharge flow shall not exceed 2.9 million gallons per day (mgd).

### 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 Kings River:

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

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

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

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

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

6. **Dissolved Oxygen:**

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

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

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

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

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

9. **pH.** The pH to be depressed below 6.5 nor raised above 8.3.

10. **Pesticides:**

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

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

    **c.** Pesticides to be present in concentration in excess of the maximum contaminant levels specified in Table 64444-A (Organic Chemicals) of section 64444 of Title 22 of the CCR.

11. **Radioactivity:**

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

**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 CCR.

**12. Salinity.** Electrical conductivity @ 25 ˚C to exceed 200 µmhos/cm.

**13. Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

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

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

**16. Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses, or to domestic or municipal water supplies.

**17. Temperature.** The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at RSW-001 and RSW-002.

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

**19. Turbidity.** Turbidity to increase more than:

**a.** 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs;

**b.** 20 percent where natural turbidity is between 5 and 50 NTUs;

**c.** 10 NTUs where natural turbidity is between 50 and 100 NTUs; nor

**d.** 10 percent where natural turbidity is greater than 100 NTUs.

## B. Groundwater Limitations

**1.** Release of waste constituents from any storage, treatment, or disposal component shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the Facility and discharge area(s) to contain waste constituents in concentrations greater than natural background quality.

# 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.** 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(s) responsible for the work.

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

**m.** In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum effluent limitation, instantaneous maximum effluent limitation, maximum daily effluent limitation, acute toxicity effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 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)].

**n.** 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.

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

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

requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

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

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

**d. Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

**e. Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of

a water quality objective for aluminum, copper, or lead, this Order may be reopened and effluent limitations added for aluminum, copper, or lead.

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

**a. Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective and the narrative effluent limitation in this Order, 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 work plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE work plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

**i. Toxicity Reduction Evaluation (TRE) Work Plan**. **By <90 days from the effective date of this Order>**, the Discharger shall submit to the Central Valley Water Board a TRE work plan for approval by the Executive Officer. The TRE work plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE work plan must be developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

**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)(NOEC = No Observed Effect Concentration). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

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

**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 in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

**(a)** If the results of four (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 Facility 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.

**b. Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives for aluminum, copper, and lead. This Order requires the Discharger to conduct monitoring for aluminum, copper, and lead as outlined in the Monitoring and Reporting Program (Attachment E). The Discharger shall conduct a constituent study for aluminum, copper, and lead that evaluates the results of monitoring at EFF-001B as follows:

| Task | Compliance Date |
|---|---|
| i. Begin monthly effluent and receiving water monitoring for aluminum, copper, and lead at Monitoring Locations EFF-001B, RSW-001, and RSW-002 per the Monitoring and Reporting Program. | Monthly sampling at EFF-001B beginning after completion of Special Provision VI.C.2.c. (**1 December 2013**). |
| ii. Submit Constituent Study results and reasonable potential analysis. | **1 July 2015** |
| iii. If the new aluminum, copper, and/or lead data at Monitoring Location EFF-001B demonstrate that reasonable potential exists, submit a Treatment Feasibility Study and Work Plan to reduce the discharge of aluminum, copper, and/or lead. | **1 December 2015** |

**c. Effluent Monitoring Location (EFF-001B) Establishment. By 30 November 2013,** the Discharger shall establish an accessible location to monitor the effluent between the cobble/aggregate levee outer bank and the Kings River or other location that is representative of the actual discharge to the Kings River. The Discharger shall conduct effluent monitoring at EFF-001B in accordance with the Monitoring and Reporting Program (Attachment E). To confirm that Monitoring Location EFF-001B has been established, the Discharger shall submit a report to the Regional Water Board **by 16 December 2013.** The report shall include pictures of the established location and a description of how effluent monitoring will be conducted at the Monitoring Location EFF-001B.

**d. Discharge Point 001 Flow Monitoring Evaluation. By <6 months from adoption of this Order>**, the Discharger shall submit a technical report for Executive Officer approval that proposes an accurate and reliable means for determining discharge flow from Discharge Point 001. The technical report shall include a proposed implementation schedule as appropriate for the new flow determination method. The Discharger submitted a Discharge Point and Receiving Water Monitoring Evaluation on 23 June 2008. The report concluded that the current estimations used to determine the flow discharged from cobble/aggregate levee to the Kings River are accurate. However, some of the average flows reported during the previous Permit term were negative estimated flows even when there was a visible discharge from the cobble/aggregate levee to the Kings River. Thus, a new flow determination method is necessary.

**3. Best Management Practices and Pollution Prevention – Not Applicable**

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

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

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

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

**ii.** Weeds shall be minimized.

**iii.** Dead algae, vegetation, and debris shall not accumulate on the water surface.

**iv.** Vegetation management operations in areas that attract nesting birds shall be carried out either before or after, but not during, the 1 April to 30 June bird nesting season.

**c.** The Discharger shall maintain and operate the ponds in a manner that protects the integrity of containment levees and prevents overtopping or overflows. Unless a California registered civil engineer certifies (based on design, construction, and conditions of operations and maintenance) that less freeboard is adequate, the operating freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

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

**6. Other Special Provisions**

**a.** This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of groundwater and storm water subject to their control.

**7. Compliance Schedules – Not Applicable**

## VII. COMPLIANCE DETERMINATION

**A. Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.c.).** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a. shall constitute compliance with the effluent limitation.

## ATTACHMENT A – DEFINITIONS

**Arithmetic Mean ($\mu$)**
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: $\Sigma x$ 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.

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

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

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

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

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 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 Reporting Level (RL), but greater than or equal to the laboratory's Method Detect Limit (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).

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

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

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

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

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

**Median**
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If

the number of measurements (*n*) is odd, then the median = $X_{(n+1)/2}$. If *n* is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the *n*/2 and *n*/2+1).

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

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

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

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

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

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

**Pollution Prevention**
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to

another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Central Valley Water Board.

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

**Standard Deviation ($\sigma$)**
Standard Deviation is a measure of variability that is calculated as follows:

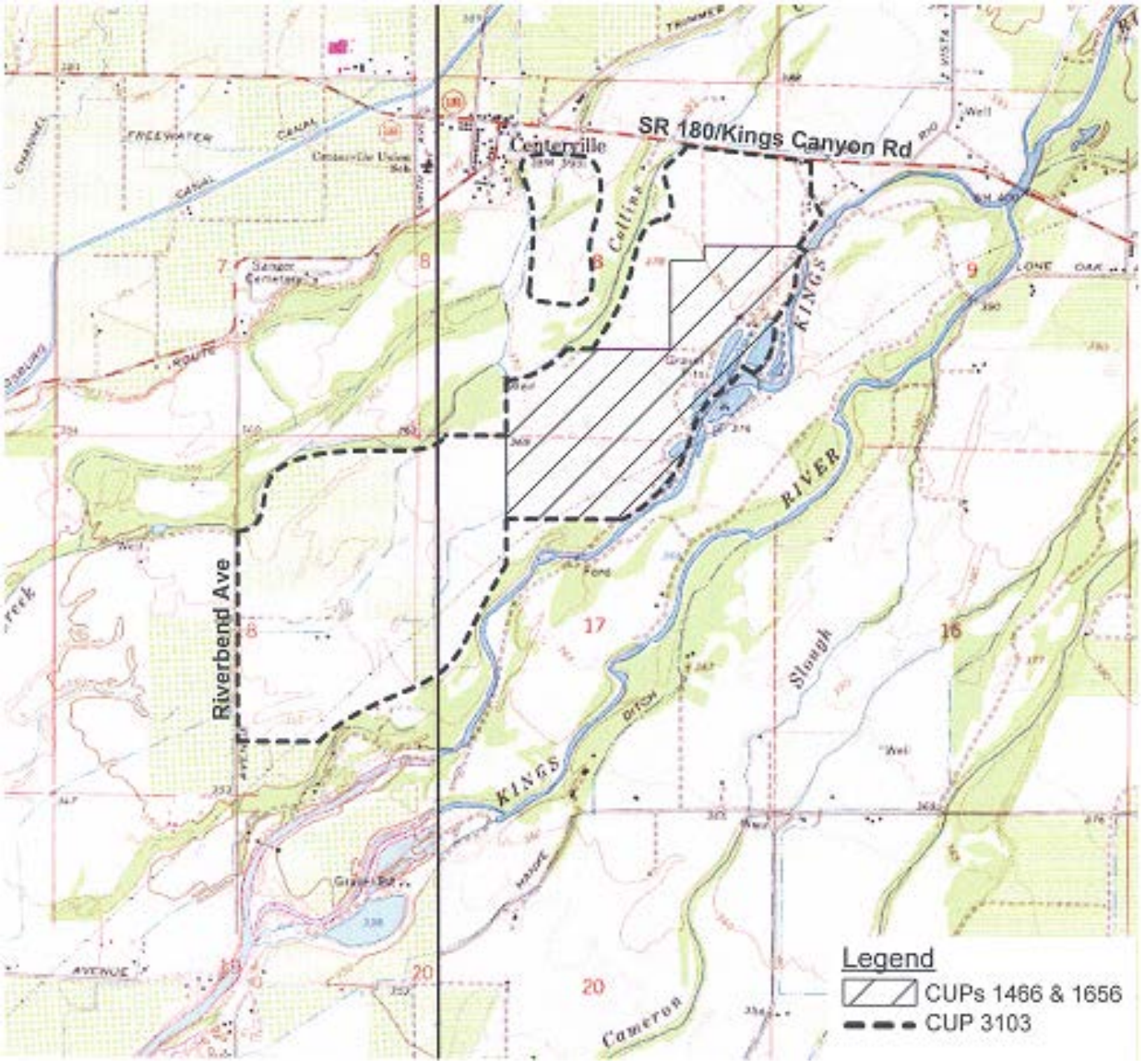
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

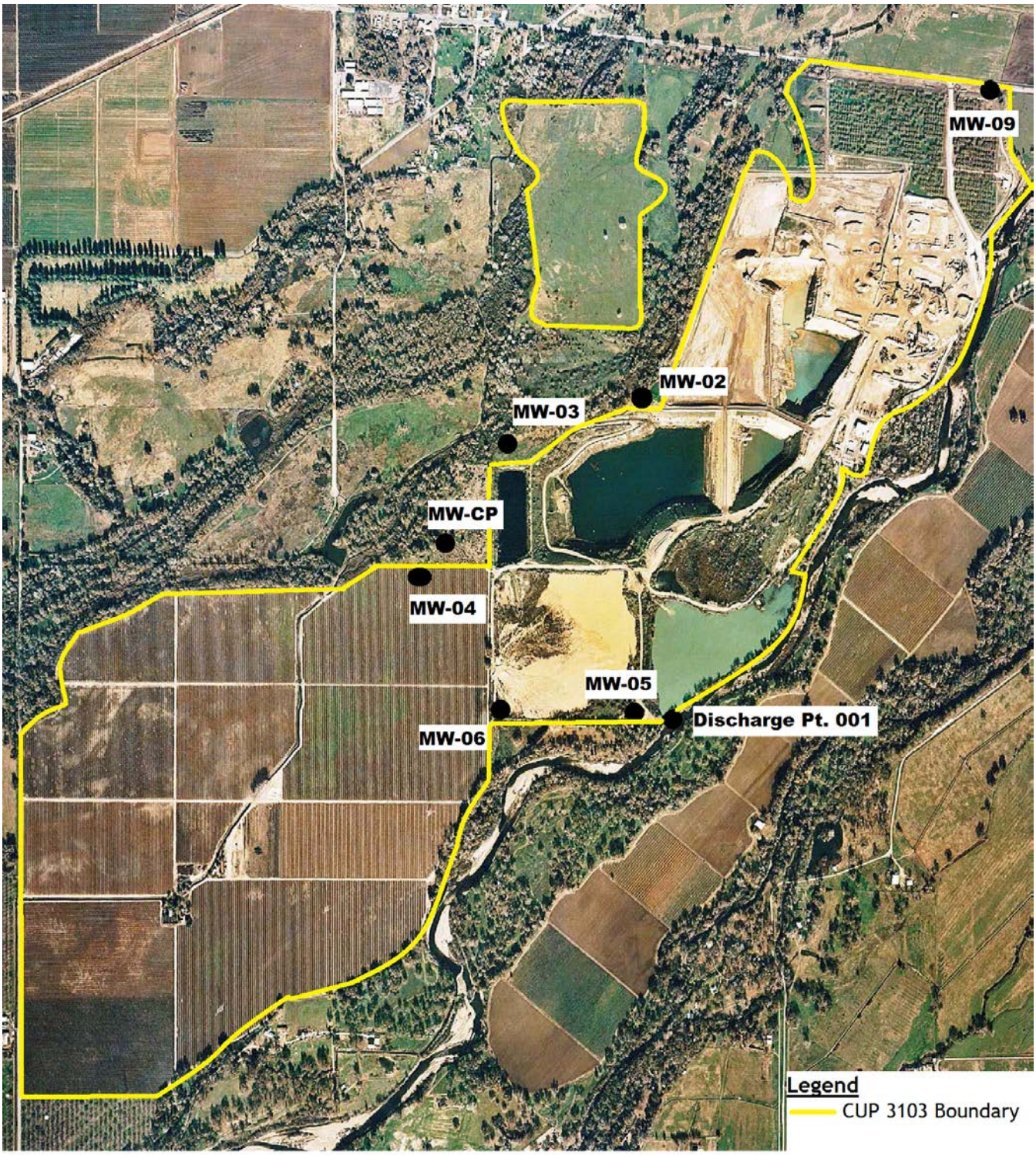
- $x$ is the observed value;
- $\mu$ is the arithmetic mean of the observed values; and
- $n$ is the number of samples.

**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

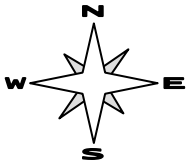


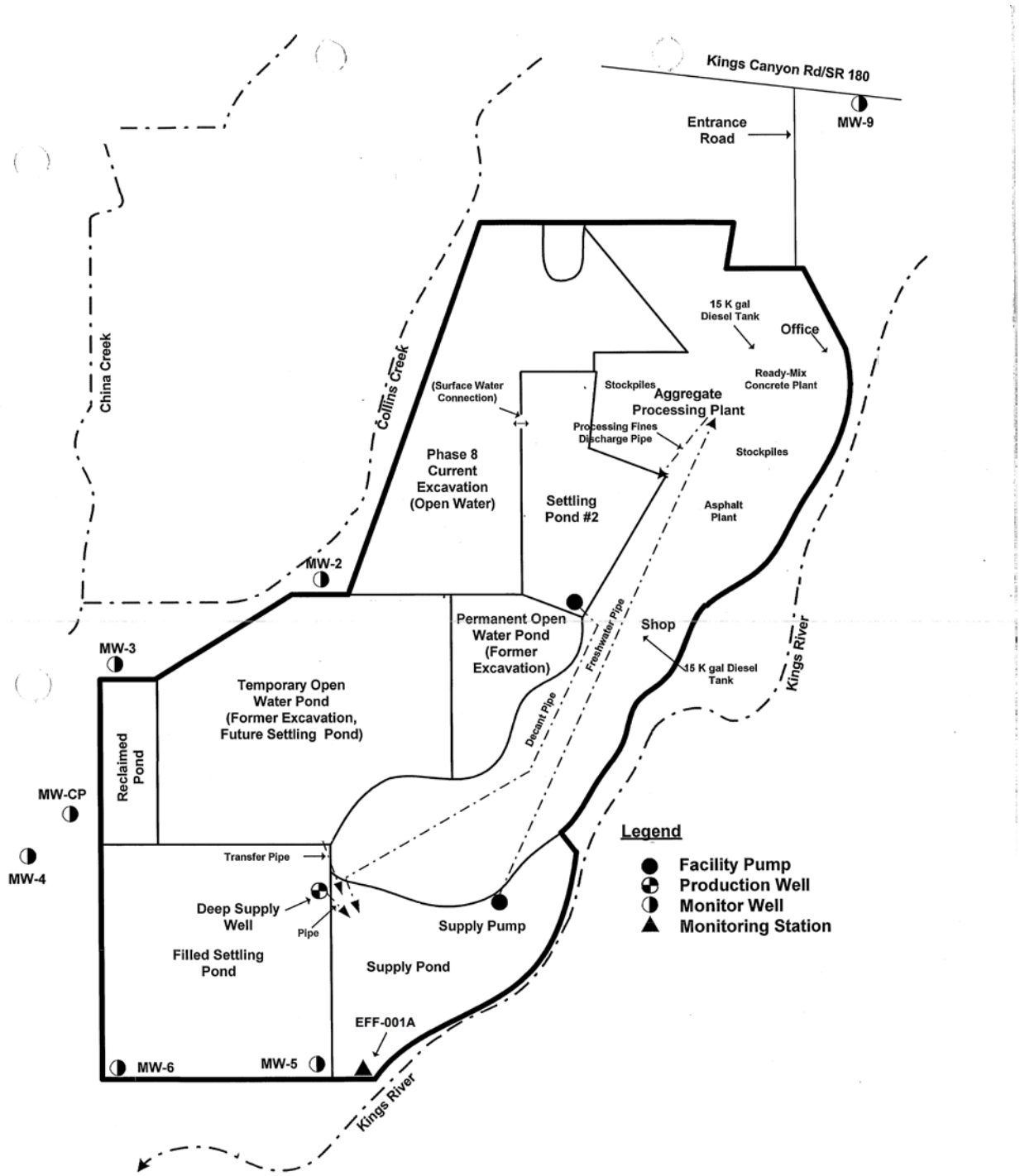

| | | |
|---|---|---|
| Drawing Reference:<br>SANGER AND WAHTOKE<br>U.S.G.S TOPOGRAPHIC MAP<br>7.5 MINUTE QUADRANGLE<br>*Not to scale* | SITE LOCATION MAP - 1<br><br>CalMat Co. et al.<br>Sanger Sand and Gravel Plant<br>Fresno County | N<br>W E<br>S |




SITE LOCATION MAP - 2

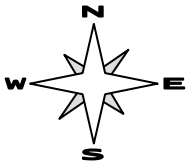
CalMat Co. et al.
Sanger Sand and Gravel Plant
Fresno County



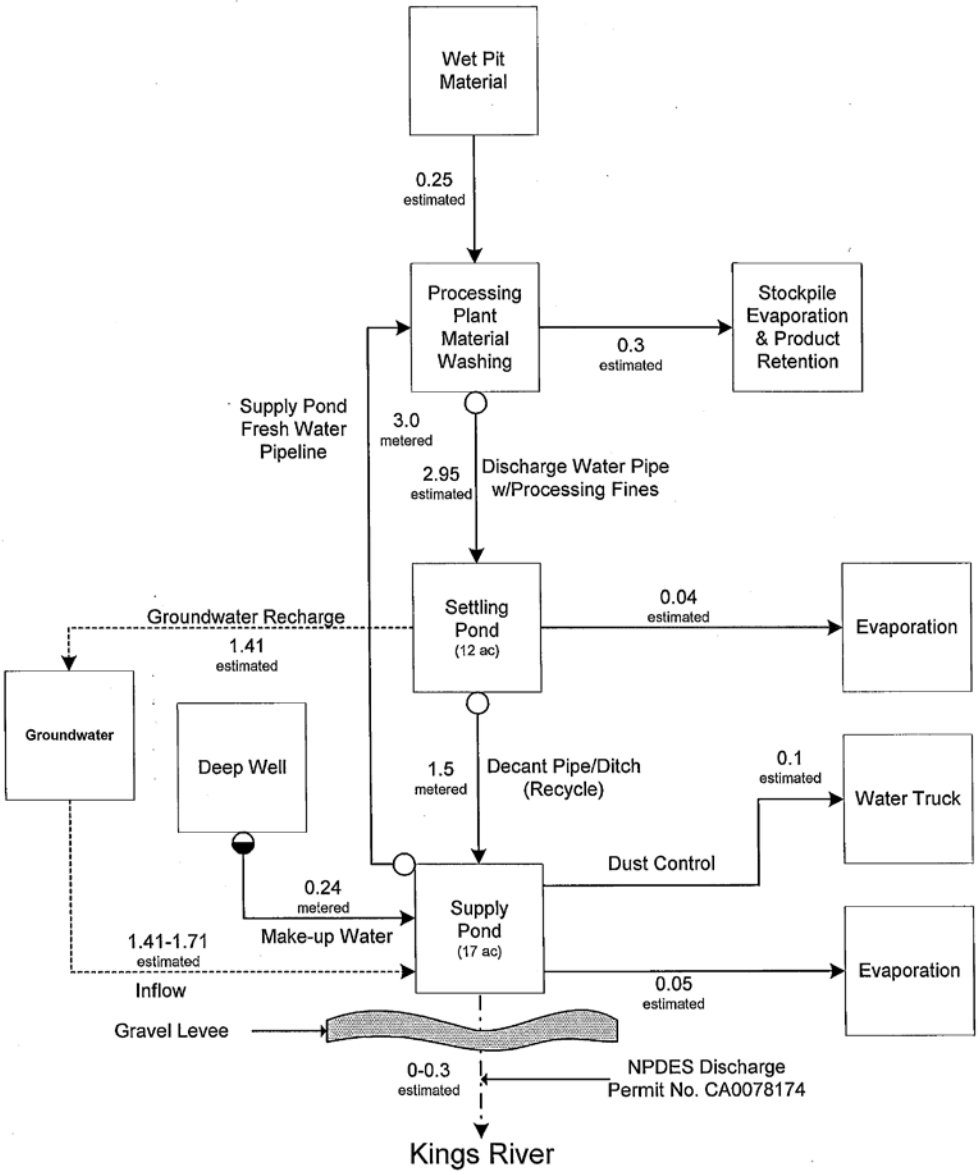



SITE LOCATION MAP - 3

CalMat Co. et al.
Sanger Sand and Gravel Plant
Fresno County



## ATTACHMENT C – FLOW SCHEMATIC




Legend:

- Direction of Flow
- Recharge
- Pump
- Well

CalMat Co. dba Vulcan Materials Company
Western Division
17041 E Kings Canyon Rd, Sanger
Sand and Gravel Processing Plant

**Process Water Flow (mgd)**

# 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 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 Central Valley Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); Wat. Code §13383):

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

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

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

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

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

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

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

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

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

**5.** Notice

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

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

## H. Upset

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

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

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

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

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

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

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

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

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

## II. STANDARD PROVISIONS – PERMIT ACTION

### A. General

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

### B. Duty to Reapply

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

### C. Transfers

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

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

**B. Records of monitoring information shall include:**

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

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

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

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

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

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

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

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

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

## V. STANDARD PROVISIONS – REPORTING

### A. Duty to Provide Information

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

### B. Signatory and Certification Requirements

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

**2.** All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR 122.22(a)(1))

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

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

**b.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized

representative may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

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

**4.** If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c))

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

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

## C. Monitoring Reports

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

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

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

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

## D. Compliance Schedules

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

## E. Twenty-Four Hour Reporting

**1.** The Discharger shall notify the California Emergency Management Agency (formerly 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 Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii))

## F. Planned Changes

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

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

**2.** The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements

under 40 CFR 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR 122.41(l)(1)(ii))

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

### G. Anticipated Noncompliance

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

### H. Other Noncompliance

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

### I. Other Information

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

## VI. STANDARD PROVISIONS – ENFORCEMENT

**A.** The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the 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 Central Valley 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 Central Valley 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 Central Valley Water Board in accordance with section 122.44(f). (40 CFR 122.42(a)(2)(iv))

# ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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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. Water Code sections 13267 and 13383 also authorize the Regional Water Quality Control Board, Central Valley Region (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 shall be conducted by a laboratory certified for such analyses at the California 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, and temperature, 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 must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff, State Water Board staff, USEPA staff, and/or their authorized representatives. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to 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.

## II. MONITORING LOCATIONS

The Discharger shall establish and monitor the following 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 |
|---|---|---|
| 001 | EFF-001A | Inside the supply pond at the point of discharge through the porous levee and as close as possible to the levee |
| 001 | EFF-001B | A location representative of the discharge of processed wastewater from the Facility to the Kings River |
| -- | PND-001 | Settling pond |
| -- | PND-002 | Supply pond |
| -- | MW-CP | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-02 | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-03 | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-04 | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-05 | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-06 | Groundwater monitoring well (See Attachment B for location) |
| -- | MW-09 | Groundwater monitoring well (See Attachment B for location) |
| -- | RSW-001 | In the Kings River between 100 feet to 1.2 miles upstream of Discharge Point 001 |
| -- | RSW-002 | In the Kings River approximately 700 feet downstream of Discharge Point 001 |

## III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

## IV. EFFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location EFF-001A and EFF-001B

1. The Discharger shall monitor processed wastewater at Monitoring Location EFF-001A as specified in Table E-2 below until 30 November 2013. Beginning 1 December 2013, the Discharger shall cease effluent monitoring at Monitoring Location EFF-001A and commence monitoring at Monitoring Location EFF-001B as specified in Table E-2 below when accessible and safe to do so. At times when it is not feasible to monitor process wastewater at Monitoring Location EFF-001B, the Discharger shall conduct monitoring as specified in Table E-2 at Monitoring Location EFF-001A.

**Table E-2. Effluent Monitoring**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Flow | mgd | [1] | Continuous | -- |
| ***Conventional Pollutants*** | | | | |
| Total Suspended Solids | mg/L | Grab | 1/Month | [2] |
| pH | standard units | Grab | 1/Week [5, 10] | [2, 3] |
| ***Priority Pollutants*** | | | | |
| Copper, Total Recoverable | µg/L | Grab | 1/Month [11] | [2, 4] |
| Lead, Total Recoverable | µg/L | Grab | 1/Month [11] | [2, 4] |
| Priority Pollutants and Other Constituents of Concern | vary | Grab | 2/Permit Term [5, 7] | [2, 4, 8] |
| ***Non-Conventional Pollutants*** | | | | |
| Aluminum, Total Recoverable OR Acid-Soluble | µg/L | Grab | 1/Month [11] | [2, 6] |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/Month [5] | [2] |
| Iron, Total Recoverable | mg/L | Grab | 1/Quarter | [2] |
| Hardness, Total (as $CaCO_3$) | mg/L | Grab | 1/Quarter | [2] |
| Manganese, Total Recoverable | mg/L | Grab | 1/Quarter | [2] |
| General Minerals [9] | mg/L | Grab | 1/Year [5] | [2] |
| Total Petroleum Hydrocarbons as Diesel (TPHd) | µg/L | Grab | 1/Quarter | [2] |
| Whole Effluent Toxicity (see Section V. below) | -- | -- | -- | -- |

[1] Flow shall be determined as approved under Special Provision VI.C.2.d. Until Special Provision VI.C.2.d. is satisfied, monthly average discharge flow to the Kings River may be estimated. The methodology, including calculations to estimate flow shall be submitted in monthly monitoring reports.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or an EPA approved Alternate Testing Procedure; where no methods are specified for a given pollutant that meet a specific reporting limit or method performance standard, an alternate method can be approved by the Executive Officer. For acid-soluble aluminum, the analytical method described in footnote 6 is considered an approved

alternate method by the Central Valley Water Board for the purposes of this Order.

[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

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

[5] Concurrent with receiving water sampling on the Kings River.

[6] Samples can be analyzed by using 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.

[7] Priority pollutants shall be sampled once between 1 January 2014 – 30 June 2014 and once between 1 July 2016 – 31 December 2016 of this Order. Monitoring shall be conducted concurrently with upstream receiving water monitoring for priority pollutants and other constituents of concern. See Attachment G for a list of priority pollutants and other constituents of concern as well as other information related to this monitoring.

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

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

[10] pH is not required to be monitored for until 1 December 2013. If Monitoring Location EFF-001B is not established by 1 December 2013, monitoring results for pH at Monitoring Location EFF-001A will be used for compliance determination of the effluent pH limitation specified in Section IV.A.1.a. of this Order.

[11] Aluminum, copper, and lead are not required to be monitored for until 1 December 2013.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

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

**2.** *Sample Types* – The samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the Monitoring Location EFF-001A until 30 November 2013. Beginning 1 December 2013, effluent samples shall be taken at Monitoring Location EFF-001B when feasible.

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

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

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

**6.** Test Methods – The acute toxicity testing samples shall be analyzed using *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to*

*Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

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

**2.** *Sample Types* – Effluent samples shall grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the Monitoring Location EFF-001A until 30 November 2013. Beginning 1 December 2013, effluent samples shall be taken at Monitoring Location EFF-001B when feasible. 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.** Test 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 (Method Manual).

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

7. *Dilutions* – For 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 Toxicity Reduction Evaluation (TRE) monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-3, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

**Table E-3. 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 Method Manual, and its subsequent amendments or revisions; or

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

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

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

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

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

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

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

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports following completion of the test and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE work plan.

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 and RSW-002

1. The Discharger shall monitor the Kings River at RSW-001 and RSW-002 as specified in Table E-4 below only when discharges at Discharge Point 001 are occurring.

**Table E-4. Receiving Water Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Total Suspended Solids | mg/L | Grab | 1/Month | [1] |
| pH | standard units | Grab | 1/Week [7] | [1, 2] |
| Temperature | °F | Grab | 1/Week | [1, 2] |

| | | | | |
|---|---|---|---|---|
| Total Petroleum Hydrocarbons as Diesel (TPHd) | µg/L | Grab | 1/Quarter | [1] |
| Electrical Conductivity @ 25 ºC | µmhos/cm | Grab | 1/Month [7] | [1] |
| Aluminum, Total Recoverable OR Acid-Soluble | µg/L | Grab | 1/Month | [1, 3] |
| Copper, Total Recoverable | µg/L | Grab | 1/Month | [1, 4] |
| General Minerals [8] | mg/L | Grab | 1/Year [7] | [1] |
| Iron, Total Recoverable | mg/L | Grab | 1/Month | [1] |
| Lead, Total Recoverable | µg/L | Grab | 1/Month | [1, 4] |
| Manganese, Total Recoverable | mg/L | Grab | 1/Month | [1] |
| Priority Pollutants and other Constituents of Concern | vary | Grab[6] | 2/Permit Term [5] | [1, 4, 6] |
| Dissolved Oxygen | mg/L | Grab | 1/Month | [1, 2] |
| Turbidity | NTU | Grab | 1/Month [9] | [1] |

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or an EPA approved Alternate Testing Procedure; where no methods are specified for a given pollutant that meet a specific reporting limit or method performance standard, an alternate method can be approved by the Executive Officer. For acid-soluble aluminum, the analytical method described in footnote 3 is considered an approved alternate method by the Central Valley Water Board for the purposes of this Order.

[2] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[3] Samples can be analyzed by 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] The maximum required Reporting Level (RL) is specified in Attachment G, Table G-1, Priority Pollutants and Other Constituents of Concern.

[5] Monitoring only required as RSW-001. Priority pollutants shall be sampled once between 1 January 2014 – 30 June 2014 and once between 1 July 2016 – 31 December 2016 of this Order. Monitoring shall be conducted concurrently with effluent monitoring for priority pollutants and other constituents of concern. See Attachment G for a list of priority pollutants and other constituents of concern as well as other information related to this monitoring.

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

[7] Concurrent with effluent sampling.

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

[9] Concurrent with effluent sampling for total suspended solids (TSS).

**2.** In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-001 and RSW-002. Notes on receiving water conditions shall be summarized in the monitoring reports. Attention shall be given to the presence or absence of:

i. Floating or suspended matter
ii. Discoloration
iii. Bottom deposits
iv. Aquatic life
v. Visible films, sheens coatings
vi. Fungi, slimes, or objectionable growths
vii. Potential nuisance conditions

## B. Groundwater Monitoring

### 1. Monitoring Locations MW-CP, MW-02, MW-03, MW-04, MW-05, MW-06, and MW-09

Monitoring wells MW-CP, MW-02, MW-03, MW-04, MW-05, MW-06, and MW-09 shall be monitored in accordance with this section. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to collecting samples and after measuring the water level, each monitoring well shall be purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water (e.g., until the temperature, specific conductivity, and pH have stabilized.) Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing.

**Table E-5. Groundwater Monitoring Requirements**

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|---|---|---|---|
| Depth to Groundwater[1] | ±0.01 feet | Measured | 1/Quarter | -- |
| Groundwater Elevation[2] | ±0.01 feet | Calculated | 1/Quarter | -- |
| Gradient | feet/foot | Calculated | 1/Quarter | -- |
| Gradient Direction | -- | Calculated | 1/Quarter | -- |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/Quarter | [3] |
| Temperature | °F | Grab | 1/Quarter | [3] |
| Total Petroleum Hydrocarbons as Diesel (TPHd) | µg/L | Grab | 1/Quarter | [3] |
| Total Dissolved Solids | mg/L | Grab | 1/Quarter | [3] |
| pH | standard units | Grab | 1/Quarter | [3] |
| Chloride | mg/L | Grab | 1/Quarter | [3] |
| Iron, Dissolved | µg/L | Grab | 1/Quarter | [3, 4] |
| Manganese, Dissolved | µg/L | Grab | 1/Quarter | [3, 4] |

[1] Groundwater depth shall be measured prior to purging the wells and measured to the nearest one-hundredth of a foot below ground surface.
[2] Elevations shall be calculated to the nearest one-hundredth of a foot from mean sea level. The groundwater elevation shall be measured prior to purging the wells.
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or other methods approved by the Executive Officer.
[4] Samples placed in an acid-preserved bottle must first be filtered through a 0.45 µm nominal pore size filter. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

2. The Discharger shall submit any water quality information that is required to be collected by its Conditional Use Permit. The information shall be submitted with the monthly self-monitoring reports.

## IX. OTHER MONITORING REQUIREMENTS

### A. Pond Monitoring – Monitoring Location PND-001 and PND-002

The Discharger shall inspect the condition of the ponds once per week and write visual observations in a bound logbook. Notations shall include observation of whether weeds are developing in the water or along the bank, and their location; whether burrowing animals or insects are present; and the color of the ponds (e.g., dark sparking green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log during each month shall be submitted along with the monthly self-monitoring report.

## X. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

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

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

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

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

### B. Self Monitoring Reports (SMRs)

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

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

3. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the eSMRs.

4. 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 | First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month | All | Submit with monthly SMR (due first day of second month following month of sampling) |
| 1/Day | First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month | (Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling. | Submit with monthly SMR (due first day of second month following month of sampling) |
| 1/Week | First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month | Sunday through Saturday | Submit with monthly SMR (due first day of second month following month of sampling) |
| 1/Month | First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month | First day of calendar month through last day of calendar month | Submit with monthly SMR (due first day of second month following month of sampling) |
| 1/Quarter | Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date | 1 January through 31 March<br>1 April through 30 June<br>1 July through 30 September<br>1 October through 31 December | 1 May<br>1 August<br>1 November<br>1 February |
| 1/Year | 1 January following (or on) permit effective date | 1 January through 31 December | Submit with the monthly SMR in which sample was taken (e.g. if a sample is taken in March, the result must be included in the March SMR [due 1 May]) |
| 2/Permit Term | 1 January 2014 (1st event)<br>1 July 2016 (2nd event) | Once between 1 January 2014 and 30 June 2014 and once between 1 July 2016 and 31 December 2016 | Submit with the monthly SMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March SMR [due 1 May]) |

5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Reporting Level (RL) and the current laboratory's 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 Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. The Discharger's laboratory(ies) may, as allowed by the rules governing alterations to ML values in section 2.4.3 of the SIP, employ a calibration standard lower than the ML value in Appendix 4 of the SIP.

**6. 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.

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

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

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

**c.** The Discharger shall attach or enter a cover letter with each eSMR. 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. Violations must also be entered into the CIWQS web site under the Violations tab for the reporting period in which the violation occurred.

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

**e.** Reports must clearly show when discharging to Discharge Point No. 001. Reports must show the date that the discharge started and stopped.

**8. Calculation Requirements**. The following shall be calculated and reported in the eSMRs:

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

**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.19.a-d. 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.

## C. Discharge Monitoring Reports (DMRs) – Not Applicable

## D. Other Reports

1. **Special Study Reports and Technical Reports.** As specified in the compliance time schedules required in the Special Provisions contained in section VI of the Order, special study and technical reports shall be submitted in accordance with the following reporting requirements.

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

| Special Provision | Reporting Requirements |
|---|---|
| Toxicity Reduction Evaluation (TRE) Work Plan (Section VI.C.2.a.) | Submit work plan by **<90 days from the effective date of this Order>** |
| Constituent Study (Section VI.C.2.b.) | Submit Constituent Study results and reasonable potential analysis by **1 July 2015** |
| Effluent Monitoring Location (EFF-001B) Establishment (Section VI.C.2.c.) | Submit report by **16 December 2013** |
| Discharge Point 001 Flow Monitoring Evaluation (Section VI.C.2.d.) | Submit technical report by <**6 months from adoption of this Order>** |

2. The Discharger shall report the results of any special studies, chronic toxicity testing, and TRE/TIE required by Special Provisions VI.C.2 of this Order. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in the Special Provision at section VI.C.7 of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date AND/OR in compliance with SMR reporting requirements describe in subsection X.B. above.

3. **By <60 days from permit adoption>**, the Discharger shall submit a report outlining Reporting Levels (RLs), method detection limits, and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required RLs for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, 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 G-1 (Attachment G) provides required maximum RLs in accordance with the SIP.

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

   **a.** The names and general responsibilities of all persons employed at the Facility.

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

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

   **d.** 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** | 5D102010001 |
| **Discharger** | CalMat Co., Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan |
| **Name of Facility** | Sanger Sand and Gravel Plant |
| **Facility Address** | 17041 E Kings Canyon Road |
| | Sanger, CA 93657 |
| | Fresno County |
| **Facility Contact, Title and Phone** | Lynn Parker, Assistant Plant Manager, (559) 787-2534 |
| **Authorized Person to Sign and Submit Reports** | Tom Ferrell, Regional Environmental Manager, (559) 979-2215 |
| **Mailing Address** | 11599 N Friant Road<br>Fresno, CA 93720 |
| **Billing Address** | Same as Mailing Address |
| **Type of Facility** | Industrial, SIC 1442. Sand and gravel (aggregate) excavation and processing facility, SIC 2951 Asphalt Batch, SIC 3273 Ready-mixed concrete |
| **Major or Minor Facility** | Minor |
| **Threat to Water Quality** | 2 |
| **Complexity** | B |
| **Pretreatment Program** | Not Applicable |
| **Reclamation Requirements** | Not Applicable |
| **Facility Permitted Flow** | 2.9 million gallons per day (mgd) |
| **Facility Design Flow** | 2.9 million gallons per day (mgd) |
| **Watershed** | South Valley Floor Hydrologic Unit (No. 551.70) |
| **Receiving Water** | Kings River |
| **Receiving Water Type** | River |

The CalMat Co., a Delaware corporation, is the operator of the Sanger Sand and Gravel Plant (hereinafter Facility), a sand and gravel (aggregate) excavation and processing facility with an asphalt batch plant. In January 1999, the Vulcan Materials Company, a

New Jersey corporation, became the sole owner of the stock of CalMat Co. Subsequently, the CalMat Co. registered the name Vulcan Materials Company, Western Division, which CalMat Co. uses in its business activities. The CalMat Co. has a long term lease agreement with Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan whom own most of the property at 17041 E Kings Canyon Road, Sanger, CA 93657 on which the Facility is located. CalMat only owns the property that contains the settling pond. Together the CalMat Co., Walter A. and Elizabeth A. Baun, and Derrell D. and Janet Delevan are hereinafter referred to as Discharger or CalMat Co. et al.

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.

The Facility discharges wastewater to Kings River, a water of the United States, and was regulated by Order R5-2007-0065 which was adopted on 22 June 2007 and expired on 1 August 2012. The terms and conditions of Order R5-2007-0065 were administratively extended and remained in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit were adopted pursuant to this Order.

The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 3 February 2012.

## II. FACILITY DESCRIPTION

The Discharger excavates aggregate and operates a sand and gravel processing plant and settling and supply ponds on a 660-acre site just west of the Kings River on East Kings Canyon Road near Sanger. The Discharger processes approximately 900 - 1,300 tons of aggregate per hour. The products are then sold to outside customers, to the on-site asphalt concrete plant, or to the on-site ready mixed concrete plant. Builders Concrete operates the on-site ready-mix concrete plant through a sublease with the CalMat Co., which leases the land from Walter A. and Elizabeth A. Baun, and Darrell B. and Janet Delevan. Water used in concrete batching leaves the site in the form of ready-mix concrete. No water from the concrete operations enters the aggregate operations’ process flow. The Facility normally operates eight to 12 hours per day, but is permitted to operate 24 hours per day to meet market demand.

In March 1989, an oil slick on the Kings River downstream from the Facility was reported to the California Department of Fish and Game. Contamination sources responsible for the discharge were identified at the Facility. The primary source of the discharge was diesel fuel that had leaked or spilled from an on-site aboveground tank (AGT) owned by Sanger Rock and Sand (former owner). In addition, there was a leaking 8,500-gallon underground storage tank (UST) that caused diesel and pentachlorophenol (PCP) groundwater contamination. The Discharger removed the AGT and UST, installed an interceptor trench with a conventional pump and treat system, and used an insitu chemical oxidation technique to treat/remove the residual petroleum hydrocarbon contaminants in the underlying groundwater. In December 2006, the Central Valley

Regional Water Quality Control Board (Central Valley Water Board) determined no further action was necessary regarding the identified release of diesel.

In August 2007, Fresno County approved Conditional Use Permit (CUP) 3103. Fresno County CUP 3103 granted the Discharger the following changes to the Facility: increase of the excavation area from 220 to 440 acres, utilization of wet mining methods instead of dry mining methods, elimination of the Kings River water for aggregate processing, and use of groundwater from a deep well as a water source for aggregate processing. Dry mining methods, which required pit dewatering, ceased in December 2008 and wet mining methods commenced in the beginning of 2009.

## A. Description of Wastewater and Biosolids Treatment or Controls

**1.** Processed wastewater is disposed of by evaporation or percolation in the settling and supply ponds and subsequent discharge from the supply pond to the Kings River or recycled as described below:

**a.** Approximately 3.0 million gallons per day (mgd) of water is pumped from the supply pond and is used to wash aggregate at the Facility. No chemicals are added during washing. The water in the supply pond consists of recycled water from the settling pond, groundwater pumped from the deep well, and groundwater from infiltration.

**b.** After the aggregate material is washed, approximately 2.95 mgd of the slurry water containing processing fines (clay and silt) is discharged to the unlined 12-acre settling pond. An estimated 1.4 mgd percolates to the groundwater and approximately 1.5 mgd of water is decanted to the supply pond.

**c.** The Discharger estimates that approximately 1.41 to 1.71 mgd of groundwater infiltrates into the supply pond and an additional 0.24 mgd of groundwater is pumped into the supply pond from a deep well. Approximately 3.0 mgd is pumped back to the processing plant to wash material. The Discharger estimates in the ROWD that approximately 0.3 mgd is discharged to the Kings River at Discharge Point No. 001 through a porous levee made of river stones and gravel that is approximately 10 feet high, 10 feet wide at the top, 30 feet wide at the base, and 75 feet long.

## B. Discharge Points and Receiving Waters

**1.** The Facility is located in Section 8, 9, 17, and 18 of T14S, R23E, MDB&M, as shown in Attachment B, a part of this Order.

**2.** Processed wastewater is discharged from the supply pond at Discharge Point No. 001 to Kings River, a water of the United States at a point latitude 36º 43’ 2” N and longitude 119º 29’ 32” W.

**3.** Shallow soils in the vicinity of the Facility are largely clean sands and gravels with silty overbank materials.

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

Effluent Limitations contained in Order No. R5-2007-0065 for discharges from Discharge Point No. 001 (previous Monitoring Location M-001) and monitoring data from the term of Order No. R5-2007-0065 are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

| Parameter | Units | Effluent Limitation | | Monitoring Data (From August 2007 To April 2012) | |
|---|---|---|---|---|---|
| | | Average Monthly | Maximum Daily | Highest Average Monthly Discharge | Highest Daily Discharge |
| Flow | mgd [1] | 2.9 | -- | 2.1 | -- |
| pH | Standard units | -- | 6.0-9.0 [2] | -- | 6.9-9.4 |
| Electrical Conductivity at 25ºC (EC) | µmhos/cm | 200 | 250 | 210 | 210 |
| Total Suspended Solids (TSS) | mg/L | 20 [3] | 30 | 31 | 31 |
| Manganese, Total Recoverable | µg/L | -- | 50 [4] | 98 | 98 |

[1] Million gallons per day
[2] Instantaneous minimum – instantaneous maximum
[3] 30-day median
[4] Concentrations of manganese in the discharge shall not exceed the natural background quality of the receiving water (Kings River), or 50 mg/L, whichever is greater.

## D. Compliance Summary

The following compliance summary applies to the Facility during the term of Order No. R5-2007-0065 (NPDES Permit No. CA0078174) up to April 2012:

**1.** Administrative Civil Liability (ACL) Order No. R5-2008-0608 assessed mandatory penalties for violations of Waste Discharge Requirements Order 5-00-007 in the amount of $6,000.00. The Discharger paid the mandatory minimum penalties.

**2.** Based on data contained in self-monitoring reports from August 2007 to April 2012 the Facility exceeded the effluent limitations for electrical conductivity, TSS, manganese, and pH.

**3.** An inspection of the Facility was conducted on 8 March 2012. The major findings from the inspection report are as follows:

The Discharger's estimate of final effluent flow is not representative of the actual discharge from Discharge Point No. 001 (see Section VII.B.2. of this Fact Sheet for further details). In addition, the Discharger was not conducting annual calibration of the pH meter as required in the permit and in the pH meter owner's manual.

### E. Planned Changes

No changes are planned for the Facility.

## 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 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 plan as specified in the Finding contained at section II.H of this Order.

   **a.** *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, Revised January 2004* (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 construction, sand and gravel, asphalt batch plants, and ready-mix concrete plant. Storm water discharges from the Facility are regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001). The Discharger's waste discharger identification number (WDID) for the storm water permit is 5F10I019186. The WDID for the onsite ready-mix concrete plant is 5F10I022845.

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 11 October 2011, USEPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR Part 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal requirements will be imposed on dischargers to WQLSs. Point source dischargers will be assigned or allocated a maximum allowable load of critical pollutants*." The Kings River between Friant-Kern Canal and Peoples Weir is not listed on the 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. No TMDLs are scheduled for Kings River between Friant-Kern Canal and Peoples Weir.

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 IV.C.3 of this Fact Sheet.

## E. Other Plans, Policies and Regulations

1. The discharge authorized herein to the settling and storage ponds, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005, *et seq.* (hereafter Title 27). The exemption, pursuant to Title 27 CCR, section 20090(b), is provided if the following conditions are met:

**a.** Waste discharge requirements are issued;

**b.** The waste discharge requirements implement the Basin Plan and allow discharge only in accordance with the Basin Plan;

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

**d.** The wastewater is nonhazardous and it is unnecessary to manage it as hazardous waste according to Title 22, CCR, Division 4.5, Chapter 11.

## 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 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-21, contains an implementation policy, "*Application of Water Quality Objectives*", that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This Policy complies with 40 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-6) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated 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 the 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 requires that water 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, which requires water quality objectives be established for the prevention of nuisance within a specific area.

The Basin Plan prohibits conditions that create nuisance. Prohibition III.C also reflects general situations that, if created, justify cleanup or abatement enforcement activities and assessment of administrative civil liabilities.

4. **Prohibition III.D (No discharge of "hazardous wastes").** This prohibition concerns two categories of waste that are subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged, have a high potential for creating a condition that would violate Prohibition III.C as well.

5. **Prohibition III.E (No discharge of waste from ready-mix concrete or asphalt operations).** This prohibition is necessary, as concrete or asphalt operations may discharge waste constituents (such as metals) in a manner that could alter the overall character and therefore threaten water quality of the Kings River.

## 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 Effluent Limitations Guidelines and Standards for the Mineral and Mining and Processing Point Source Category in 40 CFR 436 and 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.** This Order retains the average monthly effluent flow limitation of 2.9 mgd. Special Provision VI.C.2.d. of this Order requires the Discharger to evaluate the current reporting method for effluent flow and propose a new method.

**b. pH.** Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Point Source Category, Construction Sand and Gravel Subcategory in 40 CFR 436 (ELGs) require discharges of process generated wastewater pollutants from facilities that recycle wastewater for use in processing shall not cause pH to be depressed below 6.0, nor raised above 9.0 standard units. This ELG applies to the Facility. However, as described in Section IV.C.3. of this Fact Sheet, this Order establishes WQBELs for pH of 6.5 to 8.3 based on the Basin Plan objectives.

**c. Total Suspended Solids.** WDRs Order R5-00-007 established, and WDRs Order R5-2007-0065 carried over, a 30-day median effluent limitation of 20 mg/L and a daily maximum effluent limitation of 30 mg/L for total suspended solids (TSS), which are TBELs developed using BPJ. This Order carries over the TBELs established by WDRs Order R5-00-007.

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

**Table F-3. Summary of Technology-based Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | |
|---|---|---|---|---|---|---|
| | | Average Monthly | 30-day Median | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| Flow | mgd | 2.9 | -- | -- | -- | -- |
| Total Suspended Solids | mg/L | -- | 20 | 30 | -- | -- |
| pH | standard units | -- | -- | -- | 6.0[1] | 9.0[1] |

[1] This Order contains pH limitations of 6.5 to 8.3 based on the Basin Plan objectives (see Section IV.C.3. of this Fact Sheet for further discussion)

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

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water be achieved by July 1, 1983.*" Federal regulations, developed to implement

the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 CFR 131.3(e) 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 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 beneficial uses from Table II-1 of the Basin Plan applicable to Kings River between Friant-Kern Canal to Peoples Weir and to Kings Basin are listed below. Groundwater underlying the Facility is in Detailed Analysis Unit (DAU) # 236 of the Kings Basin. The designated uses of groundwater for this DAU are listed in Table F-4 below:

**Table F-4. Basin Plan Beneficial Uses**

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|---|---|---|
| 001 | Kings River | Existing:<br>Municipal and domestic supply (MUN);<br>Agricultural supply (AGR);<br>Industrial process supply (PRO);<br>Water contact recreation (REC-1);<br>Non-contact water recreation (REC-2);<br>Warm freshwater habitat (WARM);<br>Wildlife habitat (WILD); and<br>Groundwater recharge (GWR) |
| --- | Groundwater | Existing:<br>Municipal and domestic supply (MUN);<br>Agricultural supply (AGR);<br>Industrial service supply (IND); and<br>Industrial process supply (PRO) |

b. **Effluent and Ambient Background Data**. The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from August 2007 through April 2012 (unless otherwise indicated herein), which includes effluent and ambient background data submitted in SMRs.

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

**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 WQ 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 WQ 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. 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

[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.

procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

**(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 are 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 Water Quality-Based Effluent Limitations.** The remaining discussion in this section relates to the development of WQBELs when it has been determined that the discharge has reasonable potential to cause or contribute to an exceedance of the CTR hardness-dependent metals criteria in the receiving water.

A 2006 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

[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.

water and effluent hardness vary based on flow and other factors, but the variability of receiving water and effluent hardness is sometimes independent. Using a calculated hardness value ensures that the Central Valley Water Board considers all possible mixed downstream values that may result from these two independent variables. Relying on receiving water sampling alone is less likely to capture all possible mixed downstream conditions.

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

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,

[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)

lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

***ECA for Chronic Cadmium, Chromium (III), Copper, Nickel, and Zinc*** – For Concave Down Metals (i.e., chronic cadmium, chromium (III), copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR 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 44.9 mg/L to 77.8 mg/L, based on seven samples from January 2008 to January 2012. The upstream receiving water hardness varied from 6.7 mg/L to 73 mg/L, based on 13 samples from January 2008 to March 2012, and the downstream receiving water hardness varied from 6.8 mg/L to 48 mg/L, based on six samples between February 2009 to October 2009. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 44.9 mg/L. As demonstrated in the example shown in Table F-5 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., 6.7 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.

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

[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.

Where:

$C_{MIX}$ = Mixed concentration (e.g. metals or hardness)
$C_{RW}$ = Upstream receiving water concentration
$C_{Eff}$ = Effluent concentration
EF = Effluent fraction

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

**Table F-5. Copper ECA Evaluation**

| | | | | | |
|---|---|---|---|---|---|
| **Lowest Observed Effluent Hardness** | | | | | **44.9 mg/L (as $CaCO_3$)** |
| **Lowest Observed Upstream Receiving Water Hardness** | | | | | **6.7 mg/L (as $CaCO_3$)** |
| **Highest Assumed Upstream Receiving Water Copper Concentration** | | | | | **0.93 µg/L[1]** |
| **Copper $ECA_{chronic}$[2]** | | | | | **4.7 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% | 7.08 | 1.0 | 1.0 | **Yes** |
| | 5% | 8.61 | 1.1 | 1.1 | **Yes** |
| | 15% | 12.43 | 1.6 | 1.5 | **Yes** |
| | 25% | 16.25 | 2.0 | 1.9 | **Yes** |
| | 50% | 25.8 | 2.9 | 2.8 | **Yes** |
| | 75% | 35.35 | 3.8 | 3.8 | **Yes** |
| Low Flow | 100% | 44.9 | 4.7 | 4.7 | **Yes** |

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 6.7 mg/L.

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 44.9 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

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-5 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.

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-6).

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

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 lead, a Concave Up Metal, in Table F-6, below. As previously mentioned, the lowest effluent hardness is 44.9 mg/L, while the upstream receiving water hardness ranged from 6.7 mg/L to 73 mg/L, and the downstream receiving water hardness ranged from 6.8 mg/L to 48 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 6.7 mg/L.

Using the procedures discussed above to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water flow conditions (high flow to low flow) and under all known hardness conditions, as demonstrated in Table F-6 for lead.

**Table F-6. Lead ECA Evaluation**

| | | | | | |
|---|---|---|---|---|---|
| **Lowest Observed Effluent Hardness** | | | | | **44.9 mg/L** |
| **Reasonable Worst-case Upstream Receiving Water Hardness** | | | | | **6.7 mg/L** |
| **Reasonable Worst-case Upstream Receiving Water Lead Concentration** | | | | | **0.10 µg/L[1]** |
| **Lead $ECA_{chronic}$[2]** | | | | | **0.84 µg/L** |
| **Effluent Fraction[6]** | | **Fully Mixed Downstream Ambient Concentration** | | | |
| | | **Hardness[3] (mg/L) (as $CaCO_3$)** | **CTR Criteria[4] (µg/L)** | **Lead[5] (µg/L)** | **Complies with CTR Criteria?** |
| High Flow | 1% | 7.1 | 0.11 | 0.11 | **Yes** |
| | 5% | 8.6 | 0.14 | 0.14 | **Yes** |
| | 15% | 12.4 | 0.22 | 0.21 | **Yes** |
| | 25% | 16.3 | 0.31 | 0.29 | **Yes** |
| | 50% | 25.8 | 0.57 | 0.47 | **Yes** |
| | 75% | 35.4 | 0.85 | 0.66 | **Yes** |
| Low Flow | 100% | 44.9 | 1.1 | 0.84 | **Yes** |

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 6.7 mg/L.

2 ECA calculated using Equation 4 for chronic criterion.

3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Based on the procedures discussed above, Table F-7 lists all the CTR hardness-dependent metals and the associated ECAs used in this Order.

**Table F-7. Summary of ECA Evaluations for CTR Hardness-dependent Metals**

| CTR Metals | ECA (µg/L, total recoverable) | |
|---|---|---|
| | acute | chronic |
| Copper | 6.6 | 4.7 |
| Chromium (III) | 900 | 110 |
| Cadmium | 1.6 | 1.3 |
| Lead | 22 | 0.84 |
| Nickel | 240 | 27 |
| Silver | 0.42 | -- |
| Zinc | 61 | 61 |

### 3. Determining the Need for WQBELs

In this Order, the RPA procedures from section 1.3 of the SIP were used to evaluate reasonable potential for CTR/NTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs. Non-CTR constituents were evaluated on an individual basis.

Estimated concentrations (J-Flags) are not quantifiable but do confirm the presence of a substance below the analytical method's minimum level. 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. Additionally, Section 2.4 of the SIP allows the Central Valley Water Board to require in the permit that the discharger shall report the Reporting Level (RL) selected from the MLs listed in Appendix 4 of the SIP.

**a. Constituents with Insufficient Data.** Reasonable potential cannot be determined for the following constituents because effluent data are insufficient. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

**i. Metals**

**(a) WQOs.** Water quality objectives vary per metal constituent.

**(b) RPA Results.** Previous Order R5-2007-0065 established the effluent monitoring location inside the supply pond as close as possible to the porous levee. However, monitoring results within the supply pond for some constituents, particularly metals, may not be representative of the actual discharge to the Kings River. Some removal of metals may occur when process wastewater is discharged through the cobble/aggregate levee. From August 2007 to April 2013, effluent monitoring was only conducted within the supply pond; therefore, due to the uncertainty of the supply pond monitoring results, reasonable potential cannot be asserted for metals based on the effluent monitoring data from August 2007 to April 2012.

Special Provision VI.C.2.c. of this Order requires the Discharger to establish a monitoring location representative of the actual discharge to the Kings River (Monitoring Location EFF-001B). Effluent monitoring shall be conducted at the representative effluent monitoring location, Monitoring Location EFF-001B, upon completion of Special Provision VI.C.2.c. of this Order. Aluminum and lead concentrations reported within the supply pond exceed applicable water quality criteria. In addition, copper concentrations in the upstream receiving water were reported at concentrations higher than applicable water quality criteria. Therefore, this Order requires monthly effluent monitoring for aluminum, copper, and lead at EFF-001B once Special Provision VI.C.2.c. is satisfied to determine if aluminum, copper, and lead in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria. In addition, Special Provision VI.C.2.b. of this Order requires the Discharger to conduct a Constituent Study to evaluate the presence of aluminum, copper, and lead in the effluent and determine if the Facility's discharge has

reasonable potential to cause or contribute to an exceedance of applicable water quality standards.

**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 for CTR constituents. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

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

**i. Iron**

**(a) WQO.** The Secondary Maximum Contaminant Level (MCL) – Consumer Acceptance Limit for iron is 300 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply. Secondary MCLs are drinking water standards contained in CCR, Division 4, Chapter 3 (Title 22). Title 22 requires compliance with these standards on an annual average basis. Hence, the RPA for Secondary MCLs should be compared to the highest annual average to determine if there is reasonable potential. In addition, the USEPA developed National Recommended Ambient Water Quality Criteria (NAWQC) for protection of freshwater quality life for iron of 1,000 µg/L.

**(b) RPA Results.** To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average iron concentration. The maximum reported concentration inside the supply pond for iron was 910 µg/L based on 61 effluent monitoring results, while the maximum annual average iron concentration in the supply pond was 299 µg/L. The maximum upstream receiving water concentration for iron was 200 µg/L, based on four monitoring results. As detailed in this Fact Sheet, there is uncertainty regarding how representative the monitoring results taken inside the supply pond are of the actual discharge to the Kings River since concentrations reported in the supply pond could potentially be reduced by seeping through the cobble/aggregate levee. However, the monitoring results taken inside the supply pond for iron did not exceed applicable water quality criteria. Therefore, there is no reasonable potential to cause or contribute to an in-stream exceedance of a water quality standard based on the monitoring. However, this Order requires additional receiving water monitoring and continued effluent monitoring for iron. Should monitoring results indicate that the discharge has reasonable potential to cause or

contribute to an exceedance of a water quality standard, this Order may be reopened or modified by adding an appropriate effluent limitation.

**ii. Manganese**

**(a) WQO.** The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply. As discussed above for iron, secondary MCLs are drinking water standards contained in Title 22. Title 22 requires compliance with these standards on an annual average basis. Thus, the RPA for Secondary MCLs should be compared to the highest annual average to determine if there is reasonable potential.

**(b) RPA Results.** To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar annual average manganese concentration. Previous Order R5-2007-0065 included a manganese effluent limit stating that the manganese effluent concentration shall not exceed the natural background quality of the Kings River, or 50 µg/L, whichever is greater. As previously stated, at the time of issuance of the previous Order, the Kings River was an optional influent source. Since approximately April 2007, the Facility no longer uses the Kings River as an influent source. The Discharger only uses groundwater from an onsite deep well for washing aggregate. The maximum calendar average effluent and upstream receiving water concentration between August 2007 to April 2012 was 27 µg/L and 38 µg/L, respectively.

As detailed in this Fact Sheet, there is uncertainty as to how representative the monitoring results taken inside the supply pond are of the actual discharge to the Kings River since concentrations reported in the supply pond could potentially be reduced by seeping through the cobble/aggregate levee. However, the monitoring results taken inside the supply pond for manganese did not exceed applicable water quality criteria. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for manganese and the effluent limitations for manganese have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of this Fact Sheet).

**c. Constituents with WQBELs.** WQBELs are included in this Order for electrical conductivity and pH. A detailed discussion about the reasoning for inclusion of WQBELs for pH and electrical conductivity is provided below.

**i. pH**

**(a) WQO.** The Basin Plan contains a water quality objective for surface waters that "*[T]he pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH*."

**(b) RPA Results.** The receiving water monitoring results indicates that at times the Kings River exceeds the pH maximum level of 8.3. Therefore, to ensure that the Facility's discharge does not cause or contribute to the exceedance of the Basin Plan pH objective, WQBELs for pH are included in this Order.

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

**(d) Plant Performance and Attainability.** The monitoring data shows that the supply pond pH concentration ranges from 6.9 to 9.48. However, as previously discussed, there is uncertainty as to whether the supply pond monitoring data are truly representative the actual discharge to the Kings River. Therefore, compliance with the new pH effluent limitations cannot be determined at time of issuance of this Order.

**ii. Salinity**

**(a) WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for boron, electrical conductivity (EC), total dissolved solids (TDS), and sulfate. 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 constituents Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this

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

**Table F-8. Salinity Water Quality Criteria/Objectives**

| Parameter | Agricultural WQ Goal[1] | Secondary MCL[3] | Basin Plan | USEPA NAWQC | Effluent | |
|---|---|---|---|---|---|---|
| | | | | | Average | Maximum |
| Boron (mg/L) | Varies | N/A | 1.0 | N/A | 0.039[4] | 0.039[4] |
| Chloride (mg/L) | Varies | 250, 500, 600 | 175 | 860 1-hr<br>230 4-day | 3.7 | 5.1 |
| EC (µmhos/cm) | Varies[2] | 900, 1600, 2200 | 200 | N/A | 169 | 210 |
| TDS (mg/L) | Varies | 500, 1000, 1500 | N/A | N/A | N/A | N/A |
| Sulfate (mg/L) | Varies | 250, 500, 600 | N/A | N/A | 7.08 | 8.42 |

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

[2] The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors.

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

[4] The Discharger reported four effluent boron monitoring results. The only reported detection was 0.039 mg/L (estimated value).

**(1) Boron.** The Basin Plan states that discharges to surface waters, including stream channels, shall not exceed a boron content of 1.0 mg/L.

**(2) Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The Basin Plan states that discharges to surface waters, including stream channels, shall not exceed a chloride content of 175 mg/L.

**(3) Electrical Conductivity.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. The Basin Plan contains a site-specific EC objective of 200 µmhos/cm for the Kings River between Friant-Kern Canal to Peoples Weir.

**(4) 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.

**(5) 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.

**(b) RPA Results.**

**(1) Boron.** The maximum reported effluent and upstream receiving water boron concentration was 0.039 mg/L (estimated value, MDL = 0.018 mg/L and ML = 0.10 mg/L) and 0.029 mg/L (estimated value, MDL = 0.018 mg/L and ML = 0.10 mg/L), respectively. These levels do not exceed the Basin Plan boron limit of 1 mg/L.

**(2) Chloride.** Chloride concentrations in the effluent ranged from 3 mg/L to 5.1 mg/L, with an average of 3.7 mg/L. Background concentrations in the Kings River ranged from 1.3 mg/L to 6 mg/L, with an average of 3.8 mg/L, for five samples collected by the Discharger from January 2008 through January 2012. These levels do not exceed the Basin Plan chloride limit of 175 mg/L.

**(3) Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average EC concentration in the supply pond of 169 µmhos/cm, with a range from 150 µmhos/cm to 210 µmhos/cm. These levels exceed the Basin Plan site-specific EC objective of 200 µmhos/cm. The background receiving water EC ranged from 16 µmhos/cm to 160 µmhos/cm, with an average of 62 µmhos/cm. Downstream receiving water EC ranged from 20 µmhos/cm to 160 µmhos/cm, with an average of 65 µmhos/cm. Therefore, it appears that the discharge does not cause or contribute to an exceedance of the Basin Plan water quality objective.

**(4) Sulfate.** Sulfate concentrations in the effluent ranged from 5.2 mg/L to 8.42 mg/L, with an average of 7.1 mg/L. Background concentrations in the Kings River ranged from 2.5 mg/L to 7.4 mg/L, with an average of 4.6 mg/L. These levels do not exceed the secondary MCL.

**(5) Total Dissolved Solids.** TDS was not sampled for in the effluent between August 2007 and April 2012. The background receiving water TDS ranged from 38 mg/L to 120 mg/L, with an average of 70 mg/L.

**(c) WQBELs.** Previous Order R5-2007-0065 established an average monthly effluent limitation (AMEL) for EC of 200 µmhos/cm and a maximum daily effluent limitation (MDEL) for EC of 250 µmhos/cm based on the Best Professional Judgment (BPJ) of the Regional Water Board. The performance based effluent EC limits were derived using procedures utilized by the USEPA in the development of national, technology-based effluent limits for various point source discharges.

The AMEL of 200 and MDEL of 250 µmhos/cm established in the previous Order R5-2007-0065 are carried over as water quality-based effluent limits.

**(d) Plant Performance and Attainability.** Monitoring data show the Discharger can generally comply with the effluent limitations for EC.

**iii. Whole Effluent Toxicity (See Section IV.C.5. of the Fact Sheet)**

**4. WQBEL Calculations**

**a.** This Order includes WQBELs for pH and electrical conductivity. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below; however, this methodology was not used for pH and electrical conductivity.

**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 is 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-9. Summary of Water Quality-Based Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | |
|---|---|---|---|---|---|
| | | Instantaneous Minimum | Instantaneous Maximum | Average Monthly | Maximum Daily |
| pH | standard units | 6.5 | 8.3 | -- | -- |
| Electrical Conductivity @ 25 °C | µmhos/cm | -- | -- | 200 | 250 |

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

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

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

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. 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 limitations 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-6). Based on chronic WET testing performed by the Discharger from January 2010 through February 2012, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. As shown in Table F-10 below.

**Table F-10. Whole Effluent Chronic Toxicity Testing Results**

| | **Fathead Minnow** *Pimephales promelas* | | **Water Flea** *Ceriodaphnia dubia* | | **Green Algae** *Selenastrum capricornutum* |
|---|---|---|---|---|---|
| Date | Survival (TUc) | Growth (TUc) | Survival (TUc) | Reproduction (TUc) | Growth (TUc) |
| 1/19/2010 | 1 | 1 | 1 | 1 | 1 |
| 2/7/2011 | >1 | >1 | 1 | 1 | 1 |
| 3/22/2011 | 1 | 1 | -- | -- | -- |
| 4/21/2011 | 1 | 1 | -- | -- | -- |
| 5/16/2011 | 1 | 1 | -- | -- | -- |
| 2/21/2012 | 1 | 1 | 1 | 1 | 1 |

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

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 limitations. 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 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-0012, "*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 limitations 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).

[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)

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, Special Provision VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

## D. Final Effluent 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 includes effluent limitations expressed in terms of concentration. 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 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 alternative averaging periods for pH is discussed in section IV.C.3 of this Fact Sheet.

### 3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order, with the exception of effluent limit for manganese and mass-based effluent limitations for total suspended solids. The manganese effluent limit and mass-based effluent limitations for total suspended solids have been removed, consistent with the anti-backsliding requirements of the CWA and federal regulations, as discussed in detail below.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) specifies that, in the case of effluent limitations established on the basis of CWA section 301(b)(1)(c) (i.e., WQBELs), a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit unless requirements in CWA section 303(d)(4) are met. The WQBEL for manganese and the mass-based effluent limitations for total suspended solids established in Order are removed in this Order in accordance with CWA section 303(d)(4).

   CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegredation policy. The 303(d) listings for the Kings River between Friant-Kern Canal and Peoples Weir, as described in section III.D.1 of this Fact Sheet, do not include manganese. Thus, the receiving water is an attainment water for manganese. As discussed in section IV.D.4, the removal or relaxation of WQBELs for manganese is consistent with the antidegredation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

   Previous Order R5-2007-0065 established final mass-based effluent limitations for total suspended solids. 40 CFR 122.45(f)(1)(ii) states that mass-based limitations are not required when applicable standards and limitations are expressed in other terms of measurement. The numerical effluent limitations for total suspended solids is established in this Order are technology based, which are expressed in terms of concentration. Pursuant to 40 CFR 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with federal regulations. This Order does not authorize an increase in flow or concentrations of effluent limitations; therefore, the pollutant load authorized by this Order will be no greater than that of previous Order R5-2007-0065. Removing mass-based effluent limitations for total suspended solids is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16 and do not violate anti-backsliding requirements.

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

   As described in section IV.C.3.b. of this Fact Sheet, updated information that was not available at the time Order R5-2007-00656 was adopted indicates that

manganese in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water.

**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 Central Valley Water Board finds that the removal of manganese is not reasonably expected to result in an increase in pollutants or any additional degradation of the receiving water. Previous Order R5-2007-0065 included a manganese effluent limit for total recoverable manganese which stated that the manganese in the discharge shall not exceed natural background manganese concentrations or 50 µg/L, whichever was greater. As described in section IV.C.3.b. of this Fact sheet, updated information that was not available at the time previous Order R5-2007-0065 was issued indicates that manganese in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. As explained in this Fact Sheet, the discharge is processed wastewater, and the Discharger does not add chemicals to the discharge. The removal of the manganese effluent limitation is not expected to trigger any change in the Facility operation that would increase the mass of pollutants. Thus, there is no reason to believe that existing water quality will be reduced due to adoption of this Order. Consequently, the removal of the manganese effluent limitation mentioned above is consistent with the antidegradation provisions 40 CFR 131.12 and State Water Board Resolution No. 68-16.

**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 acute and chronic whole effluent toxicity, electrical conductivity, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes new effluent limitations for chronic whole effluent toxicity and pH to meet numeric and narrative objectives and protect beneficial uses.

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-11. Summary of Final Effluent Limitations**

| Parameter | Units | Effluent Limitations | | | | | Basis[1] |
|---|---|---|---|---|---|---|---|
| | | Average Monthly | 30-Day Median | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum | |
| Flow | mgd | 2.9 | -- | -- | -- | -- | PO/BPJ |
| Electrical Conductivity @ 25°C | µmhos/cm | 200 | -- | 250 | -- | -- | PO/BP/BPJ |
| Total Suspended Solids | mg/L | -- | 20 | 30 | -- | -- | PO/BPJ |
| pH | standard units | -- | -- | -- | 6.5 | 8.3 | BP |

[1] BPJ – Based on the best professional judgment of the Central Valley Water Board
PO – Based on previous Order R5-2007-0065
BP – Based on water quality objectives contained in the Basin Plan.

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

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

b. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

### E. Interim Effluent Limitations – Not Applicable

### F. Land Discharge Specifications – Not Applicable

### G. Reclamation Specifications – Not Applicable

## V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for

chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

### A. Surface Water

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

### B. Groundwater

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

2. The unlined settling ponds and supply pond discharge to underlying groundwater.

3. The following groundwater limitation in this Order is based on State Water Board Resolution No. 68-16: "*Release of waste constituents from any storage, treatment, or disposal component associated with the Facility wastewater operations, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations greater than natural background water quality.*"

## VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the

Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

**A. Influent Monitoring – Not Applicable**

**B. Effluent Monitoring**

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for pH (1/week), electrical conductivity (1/month), and total suspended solids (1/month), have been retained from Order R5-2007-0065 to determine compliance with effluent limitations for these parameters.

3. Annual effluent monitoring for general minerals contained in Order R5-2007-0065 has been retained in this Order to monitor general effluent quality.

4. Monitoring data collected over the term of Order R5-2007-0065 for aluminum, copper, and lead are insufficient to determine if the discharge has reasonable potential to cause or contribute to an exceedance of applicable water quality criteria as discussed in this Fact Sheet. Therefore, this Order requires monthly aluminum, copper and lead effluent monitoring to determine if each constituent is present in the discharge at concentrations that have reasonable potential to cause or contribute to an exceedance of applicable criteria.

5. Monthly monitoring requirements for iron, manganese, and total petroleum hydrocarbons as diesel have been reduced to 1/month to 1/quarter. The monitoring data collected over the existing permit term did not demonstrate reasonable potential to exceed water quality objectives/criteria for iron, manganese, and total petroleum hydrocarbons as diesel. However, continued effluent monitoring for iron, manganese, and total petroleum hydrocarbons as diesel is required to determine potential for iron, manganese and total petroleum hydrocarbons as diesel to impact groundwater and assess whether Facility operations have impacted groundwater.

6. Effluent hardness is required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with hardness. This Order requires the Discharger to sample its effluent for hardness quarterly following permit adoption.

7. The Central Valley Water Board used the priority pollutant monitoring data submitted by the Discharger over the term of Order R5-2007-0065 to conduct a RPA. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. The monitoring frequency for priority pollutants has been established once between 1 January 2014 and 30 June 2014 and once between 1 July 2016 and 31 December 2016. See Attachment G for more detailed requirements related to performing priority pollutant monitoring.

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

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

## C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitations for acute toxicity.

2. **Chronic Toxicity.** Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the effluent limitation for chronic toxicity.

## 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 water.

b. The Discharger submitted priority pollutant upstream receiving water monitoring data over the term of Order R5-2007-0065. The Central Valley Water Board used the priority pollutant monitoring data to conduct a RPA. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. The monitoring frequency for priority pollutants has been

established once between 1 January 2014 and 30 June 2014 and once between 1 July 2016 and 31 December 2016 in order to collect data to conduct a RPA. See Attachment G for more detailed requirements related to performing the priority pollutant monitoring.

**c.** This Order establishes quarterly monitoring for hardness to ensure the water quality criteria/objectives for hardness-based metals are correctly adjusted when determining reasonable potential as specified in section 1.3 of the SIP.

**2. Groundwater**

**a.** Water Code section 13267 states, in part, *"(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water 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 Central Valley Water Board shall provide 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.

**b.** The unlined settling and supply ponds discharge to underlying groundwater. Iron and manganese are present in most soils in relatively insoluble forms. Under reducing (anaerobic) conditions these constituents are converted to soluble forms that can readily migrate to groundwater in water percolating beneath ponds. This can result in iron and manganese groundwater concentrations that exceed applicable MCLs.

**c.** Previous Order R5-2007-0065 required the Discharger to prepare and complete a monitoring well network and groundwater monitoring program to determine if the Facility caused underlying groundwater to contain waste constituents in concentrations greater than natural background water quality. The Discharger submitted a technical report on 10 February 2011 on the characterization of background concentration of monitored constituents in the groundwater.

**d.** Evidence in the record indicates Facility activities could be causing impacts to surrounding groundwater. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program (Attachment E). Groundwater monitoring is necessary to determine compliance with the groundwater limitations contained in section V.B. of this Order and to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including Resolution No. 68-16.

**e.** The Discharger has indicated through correspondence with Central Valley Water Board staff and in the 3 February 2012 ROWD that mining operations at the Facility will expand in accordance with Fresno County CUP 3103. If required by the Executive Officer, the Discharger must augment its monitoring well network to further evaluate the impact that Facility activities may have on surrounding groundwater.

## E. Other Monitoring Requirements

### 1. Ponds

Visual observations of ponds are required to assess the general characteristics of water in the ponds, potential impact on receiving streams, the potential for nuisance conditions to develop, and the integrity of pond embankments.

# VII. RATIONALE FOR PROVISIONS

## A. Standard Provisions

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

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

## B. Special Provisions

### 1. Reopener Provisions

**a. Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity effluent limitation, new acute toxicity limitations, and/or effluent limitations 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 effluent limitation based on that objective.

b. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

c. **Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. This reopener provision allows the Central Valley Water Board to reopen this Order for addition of effluent limitations and requirements for these constituents if after review of the monitoring results or the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.

**2. Special Studies and Additional Monitoring Requirements**

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-6) Based on whole effluent chronic toxicity testing performed by the Discharger from February 2008 through February 2012, the discharge does have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

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

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

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

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE

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

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

**TRE Guidance.** The Discharger is required to prepare a TRE work plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.

Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.

Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.

Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.

Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.

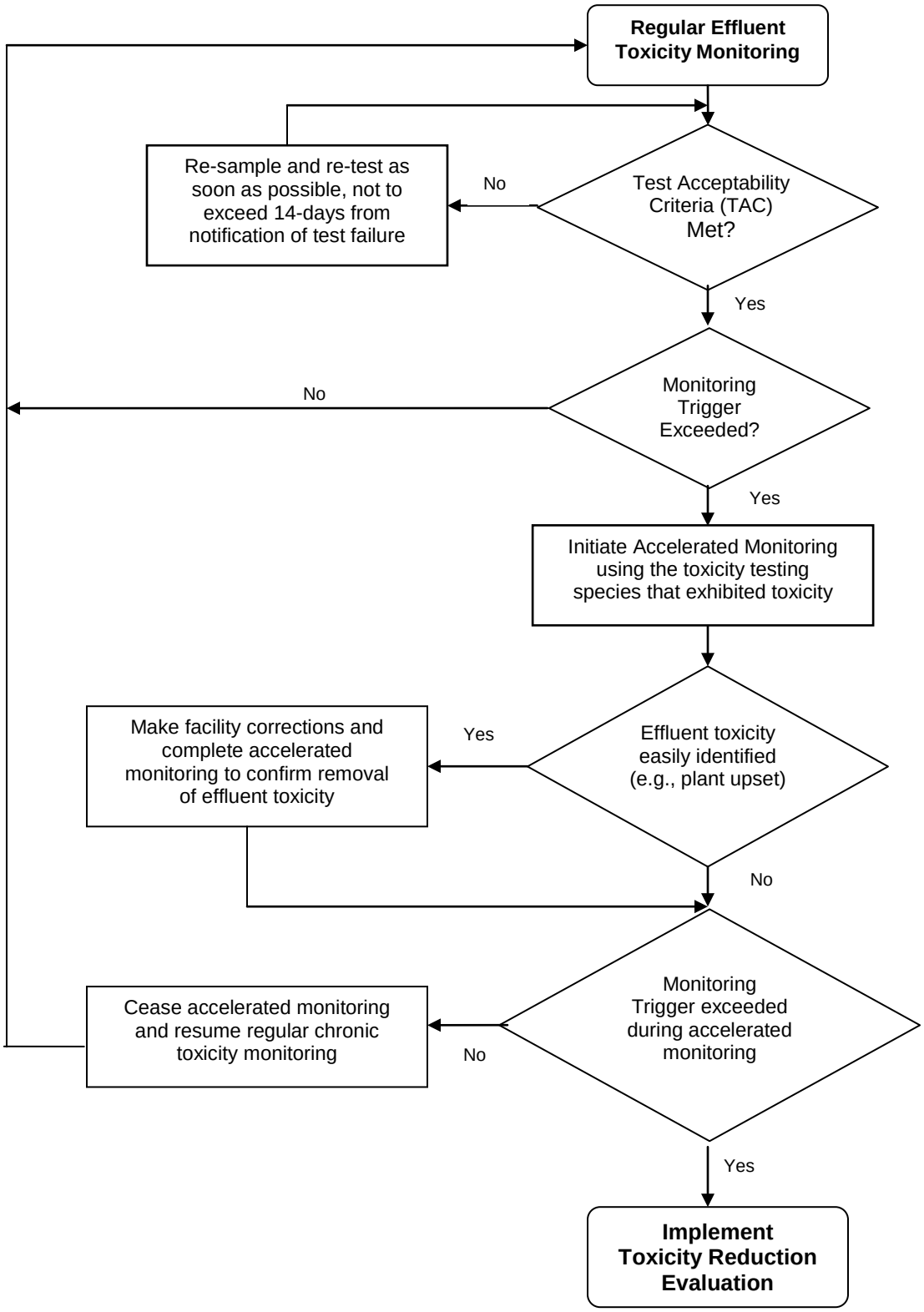
Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.

Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

## Figure F-1. WET Accelerated Monitoring Flow Chart



**b. Constituent Study.** There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. This Order requires the Discharger to complete a study of these constituents' potential effect in the receiving water. If after a review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.

**c. Effluent Monitoring Location (EFF-001B) Establishment.** This Order requires the Discharger to establish an accessible location to monitor the effluent after the cobble/aggregate levee prior to discharge to the Kings River or other location that is representative of the actual discharge to the Kings River. Samples taken on the inside of the cobble/aggregate levee (i.e., in the supply pond) may not be representative of the actual discharge to the Kings River, particularly for metals, because the process wastewater passes through the cobble aggregate levee prior to discharge to the Kings River. Therefore, in order for the Central Valley Water Board to conduct a full reasonable potential analysis of the Facility's discharge, Special Provision VI.C.2.c. of this Order requires the Discharger by 30 November 2013 to establish an effluent monitoring location where representative samples of the actual discharge to the Kings River can be taken.

**d. Discharge Point 001 Flow Monitoring Evaluation.** This Order requires the Discharger to submit a technical report that proposes an accurate and reliable means for determining discharge flow from Discharge Point No. 001 by <6 months from adoption of this Order>. Some of the average flows reported during the previous Permit term were negative estimated flows even when there was a visible discharge from the cobble levee to the Kings River. The technical report shall include a proposed implementation schedule as appropriate for the new flow determination method.

**3. Best Management Practices and Pollution Prevention – Not Applicable**

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

**a.** The Discharger utilizes settling ponds for the disposal of wastewater. Specifications have been included in this permit to assure that the ponds do not cause a nuisance.

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

**6. Other Special Provisions**

**a.** The Discharger must ensure it complies with local policies and regulations pertaining to its mining activities.

### 7. Compliance Schedules – Not Applicable

## VIII. PUBLIC PARTICIPATION

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

### A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following **[Describe Notification Process (e.g., newspaper name and date)]**

### 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 Officer at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **24 June 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<br>11020 Sun Center Dr., Suite #200<br>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, time, 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 following address between 8:00 a.m. and 4:30 p.m., Monday through Friday. The Central Valley Regional Water Board office is at 1685 "E" Street, Fresno, CA 93706. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116.

## 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 Alexander Mushegan at (559) 488-4397.

## ATTACHMENT G – EFFLUENT AND RECEIVING WATER CHARACTERIZATION

**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/water_issues/programs/state_implementation_policy/docs/sip2005.pdf). 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, Second Edition, for the Tulare Lake Basin* (collectively hereinafter Basin Plans)**.** The Basin Plans define virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plans 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.** Priority pollutant samples shall be collected once between **1 January 2014 – 30 June 2014** and once between **1 July 2016 and 31 December 2016** from the effluent and upstream receiving water (EFF-001B and RSW-001) and analyzed for the constituents listed in Table G-1. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

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

**C. Sample type.** All effluent samples shall be taken as grab samples. All receiving water samples shall be taken as grab samples.

**D. 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 G-1. Priority Pollutants and Other Constituents of Concern

| CTR # | Constituent | CAS Number | Maximum Reporting Level (µg/L or noted) |
|---|---|---|---|
| 28 | 1,1-Dichloroethane | 75343 | 0.5 |
| 30 | 1,1-Dichloroethylene | 75354 | 0.5 |
| 41 | 1,1,1-Trichloroethane | 71556 | 0.5 |
| 42 | 1,1,2-Trichloroethane | 79005 | 0.5 |
| 37 | 1,1,2,2-Tetrachloroethane | 79345 | 0.5 |
| 75 | 1,2-Dichlorobenzene | 95501 | 0.5 |
| 29 | 1,2-Dichloroethylene | 107062 | 0.5 |
| | cis-1,2-Dichloroethylene | 156592 | 0.5 |
| 31 | 1,2-Dichloropropane | 78875 | 0.5 |
| 101 | 1,2,4-Trichlorobenzene | 120821 | 0.5 |
| 76 | 1,3-Dichlorobenzene | 541731 | 0.5 |
| 32 | 1,3-Dichloropropene | 542756 | 0.5 |
| 77 | 1,4-Dichlorobenzene | 106467 | 0.5 |
| 17 | Acrolein | 107028 | 2 |
| 18 | Acrylonitrile | 107131 | 2 |
| 19 | Benzene | 71432 | 0.5 |
| 20 | Bromoform | 75252 | 0.5 |
| 34 | Bromomethane | 74839 | 1 |
| 21 | Carbon tetrachloride | 56235 | 0.5 |
| 22 | Chlorobenzene (mono chlorobenzene) | 108907 | 0.5 |
| 24 | Chloroethane | 75003 | 0.5 |
| 25 | 2- Chloroethyl vinyl ether | 110758 | 1 |
| 26 | Chloroform | 67663 | 0.5 |
| 35 | Chloromethane | 74873 | 0.5 |
| 23 | Dibromochloromethane | 124481 | 0.5 |
| 27 | Dichlorobromomethane | 75274 | 0.5 |
| 36 | Dichloromethane | 75092 | 0.5 |
| 33 | Ethylbenzene | 100414 | 0.5 |
| 88 | Hexachlorobenzene | 118741 | 1 |
| 89 | Hexachlorobutadiene | 87683 | 1 |
| 91 | Hexachloroethane | 67721 | 1 |
| 94 | Naphthalene | 91203 | 10 |
| 38 | Tetrachloroethene | 127184 | 0.5 |
| 39 | Toluene | 108883 | 0.5 |
| 40 | trans-1,2-Dichloroethylene | 156605 | 0.5 |
| 43 | Trichloroethene | 79016 | 0.5 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level (µg/L or noted) |
|---|---|---|---|
| 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 | 5 |
| 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 |
| 67 | Bis(2-chloroisopropyl) ether | 39638329 | 10 |
| 68 | Bis(2-ethylhexyl) phthalate | 117817 | 5 |
| 70 | Butyl benzyl phthalate | 85687 | 10 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level (µg/L or noted) |
|---|---|---|---|
| 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 | -- |
| 1 | Antimony | 7440360 | 5 |
| 2 | Arsenic | 7440382 | 1 |
| 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 | 0.2 |
| | Manganese | 7439965 | -- |
| | Molybdenum | 7439987 | -- |
| 9 | Nickel | 7440020 | 1 |

| CTR # | Constituent | CAS Number | Maximum Reporting Level (µg/L or noted) |
|---|---|---|---|
| 10 | Selenium | 7782492 | 5 |
| 11 | Silver | 7440224 | 0.25 |
| 12 | Thallium | 7440280 | 1 |
| | Tributyltin | 688733 | -- |
| 13 | Zinc | 7440666 | 10 |
| 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 | -- |
| | Carbofuran | 1563662 | -- |
| | 2,4-D | 94757 | -- |
| | Dalapon | 75990 | -- |

| CTR # | Constituent | CAS Number | Maximum Reporting Level (µg/L or noted) |
|---|---|---|---|
| | 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 | -- |
| | Hardness (as $CaCO_3$) | | -- |
| | Foaming Agents (MBAS) | | -- |
| | Nitrate (as N) | 14797558 | -- |
| | Nitrite (as N) | 14797650 | -- |
| | pH | | -- |
| | Phosphorus, Total (as P) | 7723140 | -- |
| | Specific conductance (EC) | | -- |
| | Sulfate | | -- |
| | Sulfide (as S) | | -- |
| | Sulfite (as $SO_3$) | | -- |
| | Temperature | | -- |
| | Total Dissolved Solids (TDS) | | -- |