CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2010-XXXX
NPDES NO. CA0082201

WASTE DISCHARGE REQUIREMENTS FOR THE SANTA FE AGGREGATES, INC. AND WALTER JOHN~~.~~ SEABORN SAND AND GRAVEL PLANT TULARE COUNTY

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

Table 1. Discharger Information

Discharger	Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn
Name of Facility	Sand and Gravel Plant
Facility Address	22400 Avenue 335
	Woodlake, CA 93286
	Tulare 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 Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Groundwater and storm water	36º 23' 30" N	119º 04' 00" W	St. Johns River
002	Groundwater and storm water discharged to groundwater recharge system	36° 23' 39" N	119° 4' 14" W	Groundwater
003	Groundwater and recycled aggregate wash water in Settling Pond No. 2	36° 23' 33" N	119° 3' 45" W	Groundwater

Table 3. Administrative Information

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

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

_____
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	Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn
Name of Facility	Sand and Gravel Plant
Facility Address	22400 Avenue 335
	Woodlake, CA 93286
	Tulare County
Facility Contact, Title, and Phone	~~Bruce Bunting~~Ken Ulm, Plant Manager (559) 564-3302
Mailing Address	P.O. Box 3042, Modesto, CA 95353
Type of Facility	Sand and gravel excavation and processing facility
Facility Design Flow	1.99 million gallons per day (mgd)

II. FINDINGS

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

A. Background. Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0058 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082201. The Discharger submitted a Report of Waste Discharge, dated 16 December 2009, and applied for a NPDES permit renewal to discharge up to 1.99 million gallons per day (mgd) of groundwater and storm water from the Sand and Gravel Plant, hereinafter Facility.

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

B. Facility Description. Santa Fe Aggregates, Inc. owns and operates a sand and gravel excavation and processing facility. Walter John~~.~~ Seaborn owns the land on which the Facility is located. The treatment system consists of a settling pond where groundwater and storm water are collected prior to discharge. Wastewater is discharged from Discharge Point 001 (see table on cover page) to the St. Johns River, a water of the United States and a distributary of the Kaweah River (at a point below Lake Kaweah) within Kaweah Delta Hydrologic Area (No. 558.10). A portion of the pumped groundwater is diverted to a groundwater recharge system west of the Facility (Discharge Point 002). The groundwater recharge system is a drainage basin that consists of underground perforated pipes within a layer of gravel. The perforated pipes allow water to drain into the surrounding gravel layer and percolate into the local groundwater aquifer. The Discharger also operates an aggregate processing facility. Wash water that is generated from processing is discharged to a second settling pond, Settling Pond No. 2 (Discharge Point 003), and recycled. Wash water is not discharged

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to the St. Johns River. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

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

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

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on 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. 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

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criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted a *Water Quality Control Plan 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. 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. The Basin Plan does not specifically identify beneficial uses for St. Johns River, but does identify present and potential uses for Valley Floor Waters. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to St. Johns River and groundwater are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	St. Johns River	Agricultural supply (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); support of rare, threatened, or endangered species (RARE); and ground water recharge (GWR).
002, 003	Groundwater	Municipal and domestic supply (MUN), AGR, IND, PRO, REC-1, REC-2

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.

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

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

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules and interim effluent limitations and discharge specifications.

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, ~~oil and grease,~~ settleable solids, and total suspended solids. The WQBELs consist of restrictions on chloride, electrical conductivity @ 25 ºC, pH, and acute toxicity. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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

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

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) 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 where limitations may be relaxed. ~~All effluent limitations in this Order are at least as stringent as the effluent limitations in WDRs Order No. R5-2005-0058.~~Some effluent limitations in this Order are less stringent than those in Order No. R5-2005-0058. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and

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13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

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

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections V.B, and portions of section VI.C~~.2.b.~~ of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0058 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

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D. Discharge of wash water to surface water is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	~~--~~1.99	~~1.99~~--	--	--
Chloride	mg/L	--	175	--	--
Electrical Conductivity @ 25 ºC	µmhos/cm	--	1000	--	--
~~Oil and Grease~~	~~mg/L~~	~~--~~	~~35~~	~~--~~	~~--~~
pH	standard units	--	--	6.5	8.3
Settleable Solids	mL/L	0.1	0.5	--	--
Total Suspended Solids	mg/L	25	45	--	--

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

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

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 St. Johns 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.

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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 5.0 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, raised above 8.3, nor changed by more than 0.3 units.

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;

11. **Radioactivity:**

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

12. **Suspended 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.

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

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

15. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to domestic or municipal water supplies.

16. **Temperature.** The natural temperature to be increased by more than 5°F.

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

18. **Turbidity.** The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs;

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

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

    d. More than 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 (federal NPDES standard conditions from 40 CFR 122) Standard Provisions 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.

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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

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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

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Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

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

The technical report shall:

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

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

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

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

k. 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 CWC, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

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m. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, 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 CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

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

C. Special Provisions

1. Reopener Provisions

a. 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

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requirements may be included in this Order as a result of the special condition monitoring data.

b. This Order may be reopened to address conditions that necessitate a major modification of a permit, as described in 40 CFR 122.62, including:

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

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

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

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Chronic Whole Effluent Toxicity. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exhibits toxicity as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE 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. Initial Investigative TRE Work Plan. <Within 90 days of the effective date of this Order>, the Discharger shall submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

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

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

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

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

iii. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate a TRE is > **1 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.

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 adequate evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

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

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(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 **sixty (60) days** of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit to the Central Valley Water Board a detailed 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 include an implementation schedule and must be developed in accordance with USEPA guidance.[1]

~~**b.Groundwater Monitoring.** To determine compliance with Groundwater Limitation V.B. or to otherwise ensure consistency with the Basin Plan, the Discharger shall submit a groundwater monitoring well installation work plan that satisfies the Standard Monitoring Well Provisions for Waste Discharge Requirements (Attachment H). The monitoring well network shall include one or more background monitoring wells and a sufficient number of designated monitoring wells that monitor first-encountered groundwater downgradient from the groundwater recharge system and both settling ponds to evaluate compliance with Groundwater Limitation V.B. The work plan may also propose, as appropriate, the use of existing monitoring wells near or at the Facility. All monitoring wells shall comply with the appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards contained in the local well ordinance adopted pursuant to CWC section 13801.~~

~~The Discharger shall install approved monitoring wells and commence groundwater monitoring in accordance with this Order's Monitoring and Reporting Program (MRP). Task v. outlined below requires the Discharger to characterize background quality of monitored constituents in a technical report. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of natural background groundwater quality to that in wells used to monitor the Facility. Determination of natural background quality shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration. The Discharger shall comply with the following compliance schedule in implementing the work required by this Special Provision:~~

~~Task~~	~~Compliance Date~~
~~i. Submit Technical Report: Monitoring Well Installation Work Plan and Time Schedule~~	~~**<3 months following adoption of this Order>**~~

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

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~~Task~~	~~Compliance Date~~
~~ii. Implement Monitoring Well Installation Work Plan~~	~~**120 days following approval by the Executive Officer.**~~
~~iii. Complete Monitoring Well Installation and Commence Groundwater Monitoring.~~	~~**In accordance with the approved implementation schedule.**~~
~~iv. Submit Technical Report: Monitoring Well Installation Report of Results (see Attachment H).~~	~~**In accordance with the approved implementation schedule.**~~
~~v. Submit Technical Report: Natural Background Quality.~~	~~**3 years following completion of Task iv.**~~

~~Technical reports submitted pursuant to this Provision are subject to the requirements of Provision VI.A.2.k and are subject to Executive Officer approval.~~

~~If the monitoring shows that any measured waste constituent concentration exceeds natural background water quality, the technical report shall evaluate the cause of the exceedance and evaluate the degradation for consistency with State Water Board Resolution No. 68-16 and make appropriate recommendations. In no case shall the discharge be allowed to cause an exceedance of Basin Plan water quality objectives. This Order may be reopened thereafter to ensure consistency with State Water Board Resolution No. 68-16, including the addition of numeric groundwater limitations.~~

b. Groundwater Data. The Discharger shall submit, **by <18 months following effective date of this Order>**, a technical report that includes the following items:

i. Well construction details for the onsite office well, Jobe well, and Leach well,

ii. Clarification on whether iron and manganese data presented for the Jobe and Leach wells are in total or dissolved form, and

iii. Four quarters of monitoring data for the onsite office well (see Attachment E for monitoring requirements).

c. Manganese Background Study. The Discharger shall submit, **by <3 years following adoption of this Order>**, a technical report that includes a characterization of natural surface water quality in the St. Johns River for manganese. The report must also include an evaluation of the extent to which the effluent is used for irrigation when the St. Johns River is not used to convey irrigation supplies from Lake Kaweah. Depending on the findings, this Order may be reopened and additional manganese limitations added.

3. Best Management Practices and Pollution Prevention – Not Applicable

~~**a.Salinity Evaluation and Minimization Work Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the~~

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~~Facility. The plan shall be completed and submitted to the Central Valley Water Board **by <9 months following adoption of this Order>** for approval by the Executive Officer.~~

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.

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.

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ATTACHMENT A – DEFINITIONS

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

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

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

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 CWC section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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

Carcinogenic
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).

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

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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.

Dissolved Analyte
The concentration of analyte in an aqueous sample that will pass through a 0.45 µm membrane filter prior to sample acidification.

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.

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

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

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

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

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

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Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Attachment B, revised as of 3 July 1999.

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

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

No Observed Effect Concentration (NOEC)
The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

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

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product

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reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Central Valley Water Board.

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

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

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

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

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

Total Recoverable Analyte
The concentration of analyte determined either by “direct analysis” of an unfiltered acid preserved sample with turbidity of <1 NTU, or by analysis of the solution extract of an unfiltered aqueous sample following digestion by refluxing with hot dilute mineral acid(s).

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.

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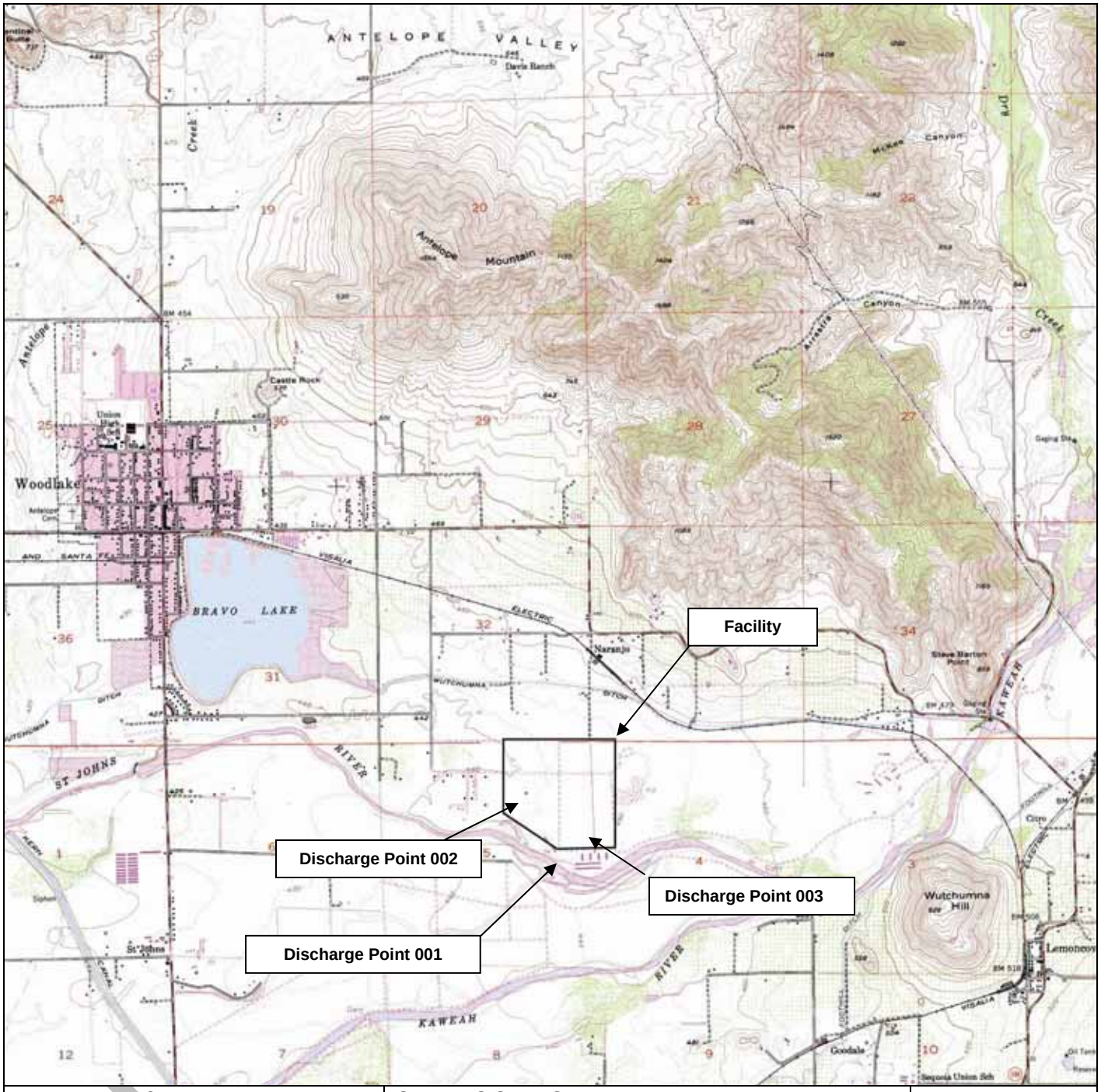
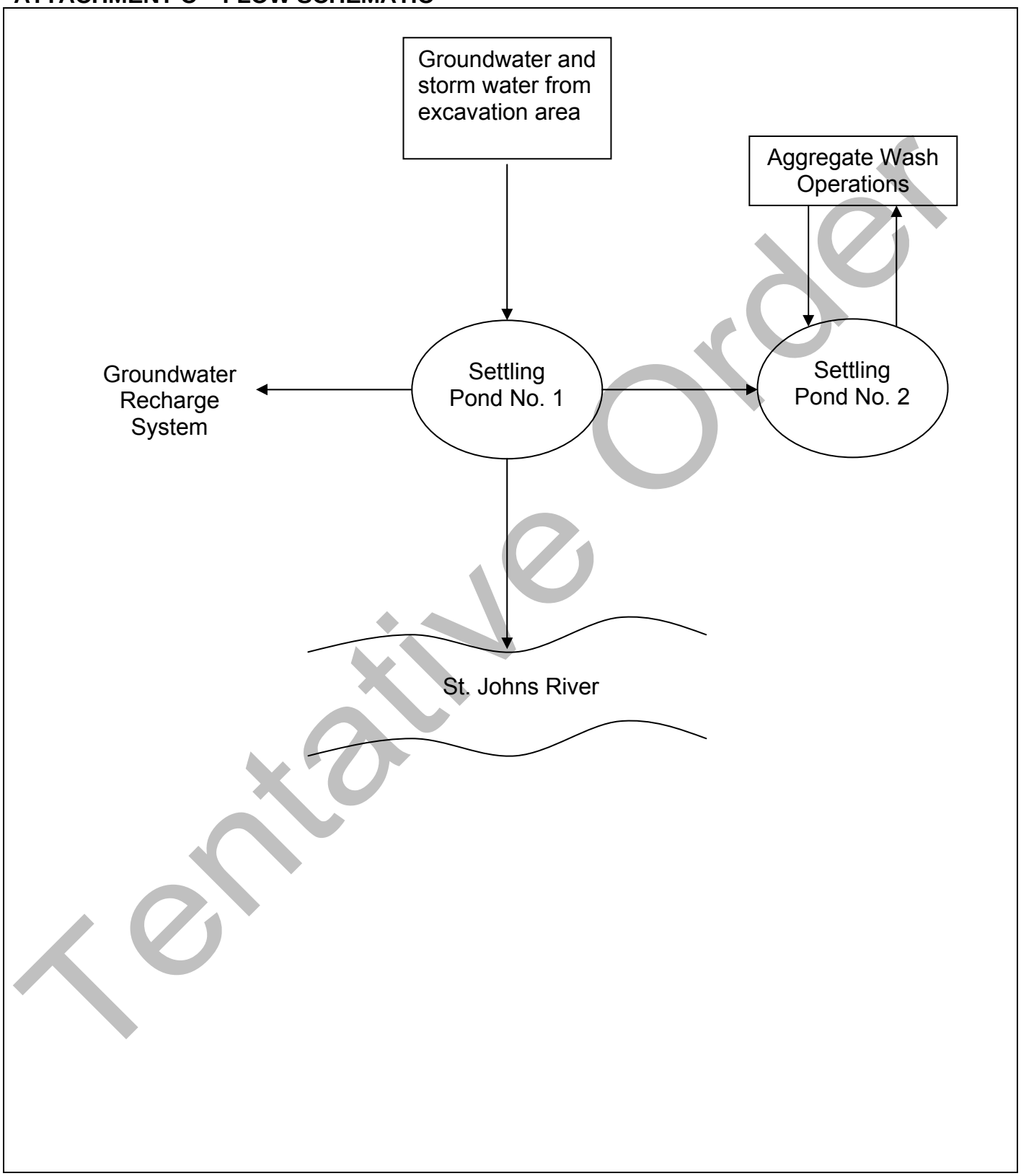
ATTACHMENT B – MAP



Drawing Reference: WOODLAKE, CA U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Photorevised 1969* *Not to scale*	SITE LOCATION MAP SANTA FE AGGREGATES, INC. SAND AND GRAVEL PLANT TULARE COUNTY SECTION 5, T18S, R27E, MDB&M	N W E S

ATTACHMENT C – FLOW SCHEMATIC



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ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

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

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

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

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

G. Bypass

1. Definitions

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

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

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

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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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

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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).)

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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

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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).)

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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 report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 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

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application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. 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));

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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).)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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

I. GENERAL MONITORING PROVISIONS

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

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

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). 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 and turbidity, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH and turbidity must be kept onsite and shall be available for inspection by Central Valley Water Board, State Water Board, United States Environmental Protection Agency, 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 to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

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

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

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

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

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

II. MONITORING LOCATIONS

The Discharger shall monitor the following locations to demonstrate compliance with the effluent limitations, receiving water limitations, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	Effluent; Downstream from the last addition of wastes prior to discharge to St. Johns River (36º 23' 30" N, 119º 04' 00" W)
--	RSW-001	On St. Johns River at least 100 feet upstream from Discharge Point 001
--	RSW-002	On St. Johns River approximately 1800 feet downstream of Discharge Point 001
--	PND-001	Settling Pond No. 1
--	PND-002	Settling Pond No. 2
--	G-001~~ through G-00N~~	~~Groundwater monitoring wells as approved by the Executive Officer after the adoption of this Order.~~Onsite office groundwater well

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

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1. The Discharger shall monitor groundwater and storm water at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods:

Table E-2. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	–
Boron, Total Recoverable	mg/L	Grab	~~1/Month~~1/Year	1
Chloride	mg/L	Grab	~~1/Month~~1/Quarter[12]	1
Copper, Total Recoverable	µg/L	Grab	1/Year[9]	1
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	~~2/Week~~1/Quarter[12]	1
Iron, Total Recoverable	mg/L	Grab	1/Month[13]	1
Iron, Dissolved	mg/L	Grab	1/Month[10]	1, 11
Manganese, Total Recoverable	mg/L	Grab	1/Month[13]	1
Manganese, Dissolved	mg/L	Grab	1/Month[10]	1, 11
~~Oil and Grease~~	~~mg/L~~	~~Grab~~	~~1/Month~~	~~1~~
pH	standard units	Grab	1/Month	1
Settleable Solids	mL/L	Grab	1/Week	1
Total Suspended Solids	mg/L	Grab	~~1/Week~~1/Month	1
Hardness, Total (as $CaCO_3$)	mg/L	Grab	~~1/Month~~1/Quarter	1
Priority Pollutants[5]	µg/L	Grab	~~2~~1/Permit Cycle[3, 4]	1, 2
Metals, Total Recoverable[6]	µg/L	Grab	3/Permit Cycle[7,8]	1,2

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR 136. The detection limits shall be low enough to determine compliance with the effluent limitations or the applicable water quality objective for those constituents without effluent limitations.

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

[3] Priority pollutants shall be sampled ~~in 2012 and 2014~~once during the first year of this Order. If any pollutants are detected in the effluent, the Discharger shall collect and analyze quarterly (1/quarter) samples for the detected constituents for one year.

[4] Concurrent with upstream receiving water monitoring for priority pollutants.

[5] Priority pollutants shall be those listed in Attachment ~~I~~H of this Order.

[6] Metals referred to in this program shall include aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium III, chromium VI, lead, mercury, nickel, selenium, silver, thallium, and zinc.

[7] Metals shall be sampled in 2012, 2013, and 2014.

[8] Concurrent with receiving water monitoring for metals.

[9] Concurrent with effluent hardness monitoring and receiving water monitoring for total recoverable copper.

[10] Monthly monitoring required for the first 24 months following the effective date of this Order.

[11] 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.

[12] If the quarterly monitoring detects the constituent at or above its effluent limitation, the Discharger shall increase monitoring to once per month for three months or until the constituent is detected below its effluent limitation, whichever is longer.

[13] Monthly monitoring is required for the first 24 months following the effective date of this Order, after which the Discharger may reduce monitoring to once per quarter. The Discharger shall notify the Central Valley Water Board in writing if and when it decides to begin quarterly monitoring.

If the discharge is intermittent rather than continuous, the Discharger shall monitor and record data for all constituents listed above on the first day of each intermittent discharge and thereafter the frequencies of analysis given in the schedule shall apply. The Discharger shall not be required to monitor and record data more often than twice the frequencies listed in the schedule unless the results of monitoring pollutants appear to violate effluent limitations, in which case, the frequency of sampling must be increased to daily until compliance is verified.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform **annual (1/year)** acute toxicity testing. After two years of monitoring, the Discharger may request to reduce monitoring for the remainder of this Order subject to approval from the Executive Officer.

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

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

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

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

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

1. *Monitoring Frequency* – The Discharger shall perform ~~**annual (1/year)**~~ three species chronic toxicity testing **once during the first year of this Order**. ~~If after three consecutive sampling events the Discharger can demonstrate that the discharge does not cause or have reasonable potential to cause, or contribute to chronic toxicity in the St. Johns River, the Discharger may request to discontinue monitoring for the remainder term of this Order subject to approval of the Executive Officer.~~

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

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

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

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

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

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

7. *Dilutions* – For regular and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and two controls. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-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

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

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

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

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

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

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the

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method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

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

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

   b. The statistical methods used to calculate endpoints;

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

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

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

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

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted **within 30 days** following completion of the tests 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

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VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor St. Johns River consistent with Table E-4 at RSW-001 and RSW-002 only when there is flow present at RSW-001 and effluent 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
Flow[1]	mgd	Gauging Station	1/Week[2]	[3]
Electrical Conductivity @ 25 °C	µmhos/cm	Grab	1/Week	[3]
pH	standard units	Grab	~~1/Week~~/1Month	[3]
Turbidity	NTU	Grab	1/Week	[3]
Copper, Total Recoverable	µg/L	Grab	1/Year[11]	[3]
Iron, Total Recoverable	mg/L	Grab	1/Month	[3]
Iron, Dissolved	mg/L	Grab	1/Month[12]	[3, 13]
Manganese, Total Recoverable	mg/L	Grab	1/Month	[3]
Manganese, Dissolved	mg/L	Grab	1/Month[12]	[3, 13]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	~~1/Month~~1/Quarter	[3]
Priority Pollutants[7]	µg/L	Grab	~~2~~1/Permit Cycle[5,6]	[3, 4]
Metals, Total Recoverable[8]	µg/L	Grab	3/Permit Cycle[9,10]	[3,4]

[1] The RSW-001 flow monitoring location shall be at McKays Point gauging station, St. Johns River (CDEC station ID JRM, operated by the US Army Corps of Engineers). Flow monitoring is not required at RSW-002.
[2] Record 1/day during irrigation season.
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR 136.
[4] For priority pollutant constituents, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan or SIP).
[5] Priority pollutants shall be sampled ~~in 2012 and 2014~~once during the first year of this Order. If any pollutants are detected in the receiving water, the Discharger shall collect and analyze quarterly (1/quarter) samples for the detected constituents for one year.
[6] Concurrent with effluent monitoring for priority pollutants.
[7] Priority pollutants shall be those listed in Attachment ~~I~~H of this Order.
[8] Metals referred to in this program shall include aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium III, chromium VI, lead, mercury, nickel, selenium, silver, thallium, and zinc.
[9] Metals shall be sampled in 2012, 2013, and 2014.
[10] Concurrent with effluent monitoring for metals.
[11] Concurrent with receiving water hardness monitoring and effluent monitoring for total recoverable copper.
[12] Monthly monitoring required for the first 24 months following the effective date of this Order.
[13] 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. 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

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receiving water conditions shall be summarized in the monitoring reports. Attention shall be given to the presence 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 Location G-001 ~~through G-00N~~

Groundwater samples shall be collected from ~~approved groundwater monitoring wells~~the onsite office groundwater well as specified in Table E-5 below. Prior to collecting samples and after measuring the water level, the 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 and screen, or additionally the filter pack pore volume. Samples shall be collected using standard USEPA methods. ~~As monitoring wells are installed, they will be automatically added to the monitoring and reporting program and shall be monitored as follows:~~

Table E-5. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater[1]	feet	Measured	1/Quarter	--
Groundwater Elevation[2]	feet	Calculated	1/Quarter	--
~~Gradient~~	~~feet/feet~~	~~Calculated~~	~~1/Quarter~~	~~--~~
~~Gradient Direction~~	~~--~~	~~Calculated~~	~~1/Quarter~~	~~--~~
Temperature	ºF	Grab	1/Quarter	--
pH	standard units	Grab	1/Quarter	--
Electrical Conductivity @ 25 ºC	µmhos/cm	Grab	1/Quarter	--
Total Dissolved Solids	mg/L	Grab	1/Quarter	[3]
Arsenic, Dissolved	µg/L	Grab	1/Quarter	[4]
Boron, Dissolved	µg/L	Grab	1/Quarter	[4]
Chloride	mg/L	Grab	1/Quarter	--
Iron, Dissolved	µg/L	Grab	1/Quarter	[4]
Manganese, Dissolved	µg/L	Grab	1/Quarter	[4]

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[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] ~~Groundwater elevation shall be used to calculate the direction and gradient of groundwater flow.~~ Elevations shall be calculated to the nearest one-hundredth of a foot from mean sea level.

[3] TDS shall be determined using EPA Method No. 160.1 for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS or equivalent analytical procedures specified in 40 CFR 136, and reported as TDS, VDS (volatile dissolved solids), and IDS (inorganic dissolved solids).

[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 REPORTING REQUIREMENTS

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

1. The Discharger shall inspect the condition of the ponds once per month and write visual observations in a bound logbook. Notations shall include observations 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 sparkling 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 monitoring report the following month.

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

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

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B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State Water Board or the Central Valley Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (~~http://www.waterboards.ca.gov/ciwqs/index.html~~http://ciwqs.waterboards.ca.gov/). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

~~2.~~3. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. The Discharger shall submit SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

~~3.~~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	On permit effective date	All	First day of the second calendar month following month of sampling
1/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of the second calendar month following month of sampling
2/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of the second calendar month following month of sampling
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of the second calendar month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following permit effective date	1 January through 1 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	Submit with monthly report by the first day of the second calendar month following the applicable quarter
1/Year	1 January following (or on) permit effective date~~2011~~	1 January through 31 December	Submit with monthly report by 1 February
1/Year (Acute Toxicity)	1 January following (or on) permit effective date	1 January through 31 December	Within 30 days following completion of test

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Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
~~2~~1/Permit Cycle	~~1 January 2012~~ ~~1 January 2014~~On permit effective date	~~1 January through 31 December 2012~~ ~~1 January through 31 December 2014~~**<Permit effective date>** through **<One year after permit effective date>**	First day of the second calendar month following month of sampling
1/Permit Cycle (Chronic Toxicity)	On permit effective date	**<Permit effective date>** through **<One year after permit effective date>**	Within 30 days following completion of test
3/Permit Cycle	1 January 2012 1 January 2013 1 January 2014	1 January through 31 December 2012 1 January through 31 December 2013 1 January through 31 December 2014	First day of the second calendar month following month of sampling

~~4.~~5. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

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

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

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

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

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

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

~~5.~~6. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the Central Valley Water Board and the State Water Board, the

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Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

6.7. **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.

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

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

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

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

Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, CA 93706-2007

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C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

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

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

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

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

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ATTACHMENT F – FACT SHEET

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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	5D541046001
Discharger	Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn
Name of Facility	Sand and Gravel Plant
Facility Address	22400 Avenue 335
	Woodlake, CA 93286
	Tulare County
Facility Contact, Title and Phone	~~Bruce Bunting~~Ken Ulm, Plant Manager (559) 564-3302
Authorized Person to Sign and Submit Reports	Ron Turcotte, President, (209) 524-7321
Mailing Address	P.O. Box 3042, Modesto, CA 95353
Billing Address	Same as Mailing Address
Type of Facility	Industrial, SIC Code 1442; sand and gravel (aggregate) excavation and processing facility
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	C
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	1.99 million gallons per day (mgd)
Facility Design Flow	1.99 mgd
Watershed	South Valley Floor Hydrologic Unit, Kaweah Delta Hydrologic Area (No. 558.10)
Receiving Water	St. Johns River
Receiving Water Type	River

A. Santa Fe Aggregates, Inc. is the owner and operator of the Sand and Gravel Facility, a sand and gravel excavation facility. Walter John~~.~~ Seaborn owns the property at 22400 Avenue 335, Woodlake, CA 93286 on which the Facility is located. Together Santa Fe Aggregates, Inc. and Walter John~~.~~ Seaborn are hereinafter referred to as Discharger.

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

B. The Facility discharges wastewater to St. Johns River, a water of the United States, and is currently regulated by Order No. R5-2005-0058, which was adopted on 29 April 2005 and expired on 27 April 2010. The terms and conditions of the current Order have been administratively continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its WDRs and NPDES permit on 16 December 2009. Supplemental information was received on 4 February 2010 and 1 April 2010.

II. FACILITY DESCRIPTION

The Discharger excavates sand and gravel and operates a sand and gravel processing plant, settling ponds, and a groundwater recharge system along the St. Johns River two miles southeast of Woodlake. The Facility is located in Section 5, T18S, R27E, MDB&M, as shown in Attachment B, a part of this Order. The Facility was previously owned by Kaweah River Rock Company, Inc. and was sold to Santa Fe Aggregates, Inc. in January 2010.

A. Description of Wastewater and Biosolids Treatment or Controls

1. Infiltrated groundwater from the bottom of the sand and gravel quarry is intercepted by ditches and then gravity flows to an unlined settling pond (Settling Pond No. 1). Storm water also flows to Settling Pond No. 1. Water from Settling Pond No. 1 is discharged to St. Johns River. Discharge from the Facility is intermittent, occurring only when the pump is activated by a float when the water reaches a certain level.

2. A portion of the pumped groundwater is diverted to a groundwater recharge system west of the Facility and 600 feet north of the river. The groundwater recharge system consists of underground perforated pipes within a layer of gravel. The perforated pipes allow water to drain into the surrounding gravel layer and percolate into the local groundwater aquifer.

3. Wash water, generated from processing sand and gravel, is discharged to a second unlined settling pond (Settling Pond No. 2) and recycled to wash aggregate extracted from the site. No chemicals are added to the process. Settling Pond No. 2 is approximately 600 feet from the eastern boundary of the plant. No wash water is discharged into St. Johns River.

4. Domestic waste generated on site is discharged to a septic tank/leach field system regulated by Tulare County.

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B. Discharge Points and Receiving Waters

1. **Discharge Point 001.** Groundwater and storm water are discharged at Discharge Point 001 to St. Johns River at a point latitude 36° 23' 30" N and longitude 119° 04' 00" W. Discharge Point 001 is in the Kaweah Delta Hydrologic Area (No. 558.10).

2. **Discharge Point 002.** Groundwater and storm water from Settling Pond No. 1 not discharged to the St. Johns River is discharged to a groundwater recharge system west of the Facility and 600 feet north of the St. Johns River at ~~a~~ approximately a point latitude 36° 23' 39" N and longitude 119° 4' 14" W.

3. **Discharge Point 003.** Wash water from aggregate processing is discharged to Settling Pond No. 2 and recycled. Settling Pond No. 2 is about 600 feet from the eastern boundary of the plant. No wash water is discharged into the St. Johns River.

4. **Surface Water.** The St. Johns River is a water of the United States and a distributary of the Kaweah River (at a point below Lake Kaweah). The St. Johns River flows to the west for about 24 miles before it drains into the East Branch Cross Creek about 1 mile west of Road 80, near Visalia. Flow data from August 2005 through April 2010 show flow ranged from no flow to a maximum of 2,650 cubic feet per second (cfs), with an average of 390 cfs. Flows are generally higher in the summer months compared to the winter months.

5. **Groundwater.** Shallow soils in the area consist of young and old alluvial deposits. The young alluvium consists of fluvial gravelly sand, silty sand, and clay deposited between 30 to 40 feet below ground surface (bgs). The old alluvium underlies the young alluvium and consists of fine to very coarse gravel, sand, silt, and clay.

   Depth to the first encountered (unconfined) in the area ranges from 10 to 20 feet bgs. Groundwater flows to the west-southwest, and it is of high quality with variable EC around 350 µmhos/cm.

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

Effluent limitations contained in Order R5-2005-0058 and representative monitoring data for discharges from Discharge Point 001 for the term of Order No. R5-2005-0058 are as follows:

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Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data (From August 2005 To April 2010)		
		Average Monthly	Maximum Daily	Lowest Daily Discharge	Highest Daily Discharge	Long-Term Average Discharge[1]
Boron	mg/L	--	--	Not Detected	0.34	0.17
Chloride	mg/L	--	--	53	180[5]	102
EC[2]	µmhos/cm	--	1000	126	879	626
Flow	mgd	--	1.99	0	2.12	0.57
Iron, Total Recoverable	mg/L	--	--	Not Detected	0.47[6]	0.2
Manganese, Total Recoverable	mg/L	--	--	0.13	0.79	0.28
Oil and Grease	mg/L	--	35	Not Detected	Not Detected	Not Detected
pH	Standard Unit	--	6.5-8.3[3]	7.7	8.2	--
Settleable Solids	mL/L	0.1	0.5	Not Detected	0.22	0.06
TSS[4]	mg/L	25	45	Not Detected	40	4.7

1 To calculate the long-term average, one-half of the Method Detection Limit (MDL) for non-detects was used.
2 Electrical Conductivity at 25ºC
3 Minimum to maximum range
4 Total Suspended Solids
5 Highest detected value of 210 mg/L appears to be an outlier. See section IV.C.3 of this Fact Sheet for details.
6 Highest detected value of 1.2 mg/L appears to be an outlier. See section IV.C.3 of this Fact Sheet for details.

D. Compliance Summary

1. A site inspection was conducted on 26 November 2008 to determine compliance with WDRs Order No. R5-2005-0058. The inspection report concluded that the Facility appeared to be operating in accordance with WDRs Order No. R5-2005-0058.

2. During the monitoring period of August 2005 through April 2010, the Discharger exceeded the following effluent limitation established by WDRs Order No. R5-2005-0058 for Discharge Point 001.

Table F-3. Effluent Violations at Discharge Point 001

Parameter	Units	Effluent Limitation		Number of Exceedances	
		Average Monthly	Maximum Daily	Average Monthly Exceedances	Maximum Daily Exceedances
Flow	mgd	--	1.99	--	3[1]

1 All maximum daily exceedances occurred during a heavy rain event

3. During the monitoring period of August 2005 through April 2010, the Discharger has sporadically caused or threatened to cause potential violations of the following receiving water limitations established by WDRs Order No. R5-2005-0058.

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Table F-4. Receiving Water Exceedances

WDRs Order No. R5-2005-0058:	Condition	Number of Exceedances at RSW-002
Receiving Water Limitation C.8	The pH of water to fall below 6.5, exceed 8.3, or change at anytime more than 0.3 units from normal ambient pH.	5
~~Receiving Water Limitation C.18~~	~~The turbidity to increase as follows:~~ ~~More than 1 NTU when natural turbidity is between 0 and 5 NTU.~~ ~~More than 20% where natural turbidity is between 5 and 50 NTU.~~ ~~More than 10 NTUs where natural turbidity is between 50 and 100 NTU.~~ ~~More than 10% when natural turbidity is greater than 100 NTU.~~	~~2~~

E. Planned Changes ~~– Not Applicable~~

The Discharger stated at a 5 January 2011 meeting with Central Valley Water Board staff that it expects the Facility to be completely mined and operations to cease within the next 5-10 years.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   a. ***Water Quality Control Plan 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.

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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 No. 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 sand and gravel facilities. Storm water from the Facility is combined with infiltrated groundwater and discharged to St. Johns River through Discharge Point 001, subject to the requirements of this Order. Additional storm water requirements are not necessary as long as all storm water is collected and discharged through Discharge Point 001. If storm water is discharged from the Facility in any other manner, the Discharger will need to obtain coverage 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).

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 30 November 2006, USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR Part 130, et seq.).*" The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be*

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met in the segment." St. Johns River is not listed as an impaired water body under California's 2006 section 303(d) List of Water Quality Limited Segments.

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 St. John's River.

E. Other Plans, Polices and Regulations

1. The discharge authorized herein to settling 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 based on the following:

   a. Waste discharge requirements are issued;

   b. The waste discharge requirements implement the Basin Plan and allow discharges 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, that are applicable to the discharge are discussed herein.

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

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States.

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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 "*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 CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses*."

A. Discharge Prohibitions

1. Prohibition A concerns a change in manner or location of the discharge, or a change in its character, from what was provided in the Report of Waste Discharge and evaluated for compliance with the CWC and CWA.

2. Prohibition B prohibits bypass pursuant to 40 CFR 122.41(m)(4), with federal allowance for exceptions set forth in section I.G of Attachment D, Federal Standard Provisions. It also prohibits overflows, which concerns release of untreated and partially treated wastewater to surface waters.

3. Prohibition C is based on Basin Plan water quality objectives and Resolution No. 68-16, which prohibit conditions that create pollution or a nuisance.

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4. Prohibition D prohibits the discharge of wash water from the Facility to surface water. The prohibition is necessary, as process operations may discharge waste constituents that could alter the characteristics of the receiving water and therefore threaten water quality of the receiving water.

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 (TBELs) 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 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.

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2. Applicable Technology-Based Effluent Limitations

a. Flow. The Discharger states that the Facility's maximum effluent flow is 1.99 mgd. This Order establishes an ~~maximum daily~~average monthly effluent flow limitation of 1.99 mgd, based on the Discharger's estimated current production maximum flow rate.

b. Settleable Solids. WDRs Order No. R5-2005-0058 established an average monthly effluent limitation of 0.1 mL/L and a maximum daily effluent limitation of 0.5 mL/L for settleable solids, which are TBELs developed using BPJ. This Order carries over the TBELs established by WDRs Order No. R5-2005-0058.

c. Total Suspended Solids. WDRs Order No. R5-2005-0058 established an average monthly effluent limitation of 25 mg/L and a daily maximum effluent limitation of 45 mg/L for total suspended solids (TSS), which are TBELs developed using BPJ. This Order carries over the TBELs established by WDRs Order No. R5-2005-0058.

~~**d.Oil and Grease.** WDRs Order No. R5-2005-0058 established a maximum daily effluent limitation of 35 mg/L for oil and grease, which is a TBEL developed using BPJ. This Order carries over the TBEL established by WDRs Order No. R5-2005-0058.~~

~~e.~~**d. 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 mine dewatering discharges not cause pH to be depressed below 6.0, nor raised above 9.0 standard units. These ELGs apply to the Facility.

Summary of Technology-based Effluent Limitations
Discharge Point 001

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

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	~~--~~1.99	~~1.99~~--	--	--
Settleable Solids	mL/L	0.1	0.5	--	--
Total Suspended Solids	mg/L	25	45	--	--
~~Oil and Grease~~	~~mg/L~~	~~--~~	~~35~~	~~--~~	~~--~~
pH	standard units	--	--	6.0	9.0

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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."* and with respect to disposal of wastewaters states that "...*use of waters for disposal of wastewaters is not included as a beneficial use…and are subject to regulation as activities that may harm protected uses."*

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and 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

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designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses.

The Basin Plan does not specifically identify beneficial uses for St. Johns River, but does identify present uses for Valley Floor Waters, to which St. Johns River is categorized. Thus, beneficial uses applicable to St. Johns River and groundwater are as follows:

Table F-6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	St. Johns River	Agricultural supply (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); support of rare, threatened, or endangered species (RARE); and ground water recharge (GWR).
002, 003	Groundwater	Municipal and domestic supply (MUN); AGR; IND; PRO; REC-1; REC-2

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 2005 through April 2010, which include effluent and ambient background data submitted in SMRs, the Report of Waste Discharge (ROWD), and Technical Report of Discharge Characteristics. The operations at the Facility have not changed significantly since 2001. Given this, it is appropriate to use priority pollutant and hardness effluent monitoring data from 2001, 2002, and present to conduct the RPA for copper.

c. Priority Pollutant Metals

i. 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.

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This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2], and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals (SIP, § 1.2; 40 CFR 131.38(c)(4), Table 4, note 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 downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p. 10).

The hardness values must also be protective under all flow conditions (*Id.* pp. 10-11). As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces criteria that ensure these metals do not cause receiving water toxicity, while avoiding criteria that are unnecessarily stringent.

Reasonable Potential Analysis (RPA). The SIP in Section 1.3 states, "*The RWQCB shall… determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective*." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the Maximum Effluent Concentration (MEC) and Maximum Ambient Background Concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed by properly adjusting the criterion for hardness when conducting the RPA.

- For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, the reasonable worst-case downstream hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for 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

[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.

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criterion after proper adjustment using the reasonable worst-case downstream hardness are outlined below.

- For comparing the Maximum Ambient Background Concentration to the applicable criterion, in accordance with the SIP, CTR, and Order WQO 2008-0008, the reasonable worst-case upstream hardness was used to adjust the criterion. In this evaluation, the area outside the influence of the discharge is analyzed. For this situation, the discharge does not impact the upstream hardness. Therefore, the effect of the effluent hardness was not included in this evaluation.

Calculation of Water Quality-Based Effluent Limitations. The remaining discussion in this section relates to the development of water quality-based effluent limits 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[1] developed procedures for calculating the effluent concentration allowance (ECA)[2] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. Simply using the lowest recorded upstream receiving water hardness to calculate the ECA may result in over or under protective water quality-based effluent limitations.

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

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

Where:

H = hardness (as $CaCO_3$)
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.

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

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

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

Where:

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

B = the ambient background concentration

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

ECA for Concave Down Metals

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. Therefore, based on any observed ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion) and the minimum effluent hardness, the ECA calculated using Equation 1 with a hardness equivalent to the minimum effluent hardness is protective under all discharge conditions (i.e., high and low dilution conditions and under all mixtures of effluent and receiving water as the effluent mixes with the receiving water). This is applicable whether the effluent hardness is less than or greater than the ambient background receiving water hardness.

The effluent hardness ranged from 160 mg/L to 200 mg/L (as $CaCO_3$), based on three samples collected on 22 May 2001, 16 April 2002, and 11 January 2010. The upstream receiving water hardness varied from 14 mg/L to 75 mg/L (as $CaCO_3$), based on 33 samples from August 2005 to April 2010. Using a hardness of 160 mg/L (as $CaCO_3$) to calculate the ECA for all Concave Down Metals will result in water quality-based effluent limitations that are protective under all potential effluent/receiving water

[1] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).

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mixing scenarios and under all known hardness conditions, as demonstrated in the example using copper shown in Table F-7, below. This example assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 14 mg/L as $CaCO_3$), and
- Upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

Using these reasonable worst-case conditions, the discharge can be mixed with the receiving water and a resulting downstream mixed hardness (or metals concentration) can be calculated for all discharge and mixing concentrations (e.g., 0% effluent to 100% effluent) based on a simple mass balance as shown in Equation 3, below. By evaluating all discharge conditions the reasonable worst-case downstream hardness can be determined for adjusting the CTR criteria.

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

Where:

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

As demonstrated in Table F-7, using a hardness of 160 mg/L (as $CaCO_3$) to calculate the ECA for Concave Down Metals ensures the discharge is protective under all discharge and mixing conditions. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. An ECA based on a lower hardness (e.g., lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions. Therefore, in this Order the ECA for all Concave Down Metals has been calculated using Equation 1 with a hardness of 160 mg/L (as $CaCO_3$).

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Table F-7. Copper ECA Evaluation

Minimum Observed Effluent Hardness			**160 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**14 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Copper Concentration			**1.74 µg/L[1]**
		Copper $ECA_{chronic}$[2]	**13.9 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**
1%	15.46	1.9	1.9
5%	21.3	2.5	2.3
15%	35.9	3.9	3.6
25%	50.5	5.2	4.8
50%	87	8.3	7.8
75%	123.5	11.2	10.9
100%	160	13.9	13.9

1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 14 mg/L (as $CaCO_3$)

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 160 mg/L (as $CaCO_3$)

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

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

5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

ECA for Concave Up Metals

For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. Therefore, the 2006 Study provides a mathematical approach to calculate the ECA to ensure that any mixture of effluent and receiving water is in compliance with the CTR criteria (see Equation 4, below). The ECA, as calculated using Equation 4, is based on the reasonable worst-case ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), and the minimum observed effluent hardness. The reasonable worst-case ambient background hardness depends on whether the effluent hardness is greater than or less than the upstream receiving water hardness. There are circumstances where the conservative ambient background hardness assumption is to assume that the upstream receiving water is at the highest observed hardness concentration. The conservative upstream receiving water condition as used in the Equation 4 below is defined by the term H_{rw}.

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

Where:

m, b = criterion specific constants (from CTR)

H_e = minimum observed effluent hardness

H_{rw} = minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness ($H_{rw} < H_e$)

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Table F-8, below. As previously mentioned, the minimum effluent hardness is 160 mg/L (as $CaCO_3$), while the upstream receiving water hardness ranged from 14 mg/L to 75 mg/L (as $CaCO_3$). In this case, the minimum effluent concentration is greater than the range of observed upstream receiving water hardness concentrations. Thus, the ECA was calculated (Equation 4) based on the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness.

Using Equation 4 to calculate the ECA for all Concave Up Metals will result in water quality-based effluent limitations that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-8, for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions. Therefore, Equation 4 has been used to calculate the ECA for all Concave Up Metals in this Order.

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Table F-8. Lead ECA Evaluation

Minimum Observed Effluent Hardness	**160 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness	**14 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration	**0.3 µg/L[1]**
Lead $ECA_{chronic}$[2]	**3.7 µg/L**

Effluent Fraction	Mixed Downstream Ambient Concentration		
	Hardness[3] (mg/L) (as $CaCO_3$)	CTR Criteria[4] (µg/L)	Lead[5] (µg/L)
1%	15.5	0.3	0.3
5%	21.3	0.4	0.4
15%	35.9	0.9	0.8
25%	50.5	1.3	1.1
50%	87.0	2.7	2.0
75%	123.5	4.2	2.9
100%	160	5.8	3.7

1 Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 14 mg/L (as $CaCO_3$).

2 ECA calculated using Equation 4 for chronic criteria.

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

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

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

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

d. **Assimilative Capacity/Mixing Zone.** St. Johns River is subject to periods of little to no flow, at which there is no assimilative capacity. Based on this information, the worst-case dilution is zero to provide protection for the receiving water beneficial uses. The impact of zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

3. Determining the Need for WQBELs

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

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may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency*." Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs.

b. Constituents with Limited Data. Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. 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. Manganese.

(a) WQO. The agricultural water quality goal that would apply the narrative chemical constituents objective is 0.2 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 0.2 mg/L agricultural water quality goal is intended to prevent long-term build-up in the soil and is for waters used on a continuous basis at one site.

(b) RPA Results. Monitoring data show that the annual average concentrations are slightly higher than 0.2 mg/L. Facility effluent is not used as the sole source of irrigation at any site, and it is unknown whether Facility effluent is used for irrigation when the wastewater comprises the entire flow in the St. Johns River. Water in the St. Johns River is used for irrigation; however, there are no background manganese data available. Based on these circumstances, additional information is needed to determine whether effluent manganese concentrations can cause or contribute to an exceedance of a narrative objective for the protection of the agricultural supply beneficial use.

c. Constituents with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

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

i. Copper.

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. Using the default conversion factors and reasonable worst-case measured hardness, as described in section VI.C.2.c of this Fact Sheet, the applicable acute (1-hour average) criterion is 2.20 µg/L and the applicable chronic (4-day average) criterion is 1.74 µg/L, as total recoverable.

(b) RPA Results. Monitoring of copper in the Facility effluent and receiving water was performed by the Discharger on 11 January 2010 and 8 February 2010, respectively, and on 22 May 2001 and 16 April 2002. The maximum effluent concentration (MEC) for copper was 0.8 µg/L (as total recoverable) while the maximum observed upstream receiving water concentration was 1.92 µg/L (as total recoverable). Both effluent and receiving water data were reported as estimated values (i.e., trace amounts between MDL and PQL). The other two effluent and receiving water samples were reported as non-detect. The discharge does not demonstrate a reasonable potential to cause or contribute to an exceedance of a water quality standard for copper for the following reasons: 1) copper was only detected in one of three samples for both the effluent and the receiving water; 2) the one detected receiving water result is an estimated concentration and does not provide an adequate level of scientific certainty to use as evidence that the receiving water exceeds criteria; 3) the estimated receiving water result marginally exceeds (i.e., less than two tenths) the criterion of 1.74 µg/L; and 4) the estimated effluent concentration (0.8 µg/L) is less than half the copper criterion, which is based on the lowest upstream receiving water hardness of 14 mg/L.

ii. Iron.

(a) WQO. The USEPA developed National Recommended Ambient Water Quality Criteria for the protection of freshwater aquatic life for iron. The recommended 4-day average (chronic) criterion for iron is 1.0 mg/L for waters with a pH of 6.5 to 9.0. A 1-hour average (acute) criterion for iron is not available. USEPA recommends that the ambient criterion is protective of the aquatic beneficial uses of receiving water in lieu of site-specific criteria. The most stringent of these criteria, the chronic criterion of 1.0 mg/L, is based on studies conducted on waters with low pH (6.5 to 6.8 pH units) and hardness (<10 mg/L as $CaCO_3$) conditions not commonly observed in valley floor waters like the St. Johns River.

(b) RPA Results. Based on 52 samples from August 2005 through April 2010, the maximum effluent concentration was 1.2 mg/L based on one high result on 7 June 2006. It appears that the 7 June 2006 sample result is an outlier. The next highest effluent sample is a value of 0.47 mg/L. The monitoring data also show that the highest manganese

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concentration was recorded on 7 June 2006. Chain of custody forms show iron and manganese were analyzed from the same sample bottle for the sample collected on 7 June 2006. Given the data available, the 1.2 mg/L value is considered an outlier. As allowed by Section 1.2 of the SIP, this outlier is inappropriate to use in determining reasonable potential. The maximum effluent concentration does not exceed the applicable water quality objective; therefore, the discharge does not have a reasonable potential to cause or contribute to an exceedance of a water quality standard for iron.

d. Constituents with Reasonable Potential. Those constituents for which it was determined in the previous Order that there was reasonable potential to cause or contribute to a water quality standard exceedance remain in this Order. The only new constituent found to have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard is chloride. A WQBEL for this constituent is included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. pH

(a) WQO. The Basin Plan includes a water quality objective for surface waters that "[T]he pH of water shall not be depressed below 6.5, nor raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH."

(b) RPA Results. The discharge of groundwater and storm water from the Facility has a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH.

(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 for pH and are carried over from the WQBELs established by Order No. R5-2005-0058.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the minimum effluent pH of 7.7 standard units and the maximum effluent pH of 8.2 standard units are within the range of the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. Salinity

(a) WQO. The Basin Plan at page IV-10 includes water quality objectives for discharges to navigable waters. The Basin Plan requires at a minimum,

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discharges to surface waters, including stream channels, to comply with the following effluent limitations:

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

(2) Discharges shall not exceed an EC of 1,000 µmhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L

Table F-9. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan	Effluent[1]	
		Average	Maximum
Boron (mg/L)	1.0	0.17	0.34
Chloride (mg/L)	175	102	180[2]
EC (µmhos/cm)	1000	626	879

[1] Effluent data between August 2005 through April 2010.
[2] Highest reported value of 210 mg/L appears to be an outlier.

(b) RPA Results.

(1) Boron. A review of the Discharger's monitoring reports shows an average effluent boron concentration of 0.17 mg/L, with a range from 0.1 mg/L to 0.34 mg/L. These levels do not exceed the Basin Plan water quality objectives for boron.

(2) Chloride. The maximum effluent concentration (MEC) for chloride was 210 mg/L on 6 October 2005. It appears that the 6 October 2005 sample result is an outlier. Excluding the value of 210 mg/L, chloride concentrations in the effluent ranged from 53 mg/L to 180 mg/L, with an average of 102 mg/L, for 51 samples collected by the Discharger from August 2005 through April 2010. Therefore, chloride in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objectives for chloride.

(3) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent EC of 626 µmhos/cm, with a range from 126 µmhos/cm to 879 µmhos/cm. These levels do not exceed the Basin Plan water quality objectives for EC.

(c) WQBELs. Order R5-2005-0058 contained a maximum daily effluent limitation for EC of 1,000 µmhos/cm. While the Basin Plan EC effluent limits are generally applied as rolling annual averages, the EC limit will remain a maximum daily to avoid backsliding and given the Discharger is able to consistently meet the maximum daily limit, as shown in Table F-9. This Order includes a new effluent limitation for chloride of 175 mg/L,

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expressed as a maximum daily, consistent with the Basin Plan objective for discharges to navigable waters.

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

~~In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan.~~

(d) Plant Performance and Attainability. Analysis of the effluent data show that chloride slightly exceeded the applicable WQBEL once, and none of the EC samples exceeded the applicable WQBEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations – Not Applicable

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

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

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chloride	mg/L	--	175	--	--
Electrical Conductivity @ 25 ºC	µmhos/cm	--	1000	--	--
pH	standard units	--	--	6.5	8.3

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, section V). This Order also contains effluent limitations for acute toxicity and

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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.** 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%

   Order No. R5-2005-0058 required the Discharger to conduct acute toxicity testing once during the permit term. The Discharger did not conduct the acute toxicity testing as required. This Order requires the Discharger to conduct acute toxicity testing once per year. After two years of monitoring, the Discharger may request to reduce monitoring for the remainder of this Order subject to approval from the Executive Officer.

b. **Chronic Aquatic Toxicity.** WDRs Order No. R5-2005-0058 required the Discharger to conduct three species chronic toxicity testing once during the permit term. The Discharger conducted the required chronic toxicity testing in January 2010. The data show the effluent did not exhibit chronic toxicity. However, adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

   To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, the Special Provision contained at VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If there is adequate evidence of 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

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accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

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

D. Final Effluent Limitations

1. Mass-based Effluent Limitations – Not Applicable

2. Averaging Periods for Effluent Limitations – Not Applicable

3. Satisfaction of Anti-Backsliding Requirements

The CWA allows revision of effluent limitations only if such revision is subject to and consistent with a state's antidegradation policy. The anti-backsliding requirements also prohibit the reissued permits to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving water to violate the applicable state water quality standard under Section 303 of the CWA. ~~All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.~~ The effluent limitations in

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Orders No. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES No. CA0055119] and Time Schedule Orders No. 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).

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this Order are at least as stringent as the effluent limitations in Order No. R5-2005-0058, with the exception of effluent limitations for flow and oil and grease. The effluent limitations for flow and oil and grease are less stringent than those in Order No. R5-2005-0058. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

Order No. R5-2005-0058 required that the discharge meet a maximum daily effluent limitation for oil and grease of 35 mg/L. Effluent monitoring data collected during the term of Order No. R5-2005-0058 show that oil and grease was not detected in the effluent above the reporting limit in four samples. Federal regulations, 40 CFR 122.44(l)(2)(i)(B)(*2*) allow less stringent effluent limitations if the Central Valley Water Board determines a technical mistake was made or the law was mistakenly interpreted. The oil and grease effluent limitation has been applicable to the discharge since the first NPDES permit was issued for this Facility in 1993. The 1993 Order did not specify whether the oil and grease effluent limitation was applied as a technology-based effluent limitation and also did not include an explanation of what the 35 mg/L was based on. Order No. R5-2005-0058 indicates that the oil and grease effluent limitation is a technology-based effluent limitation based on best professional judgment. However, the basis for inclusion of the oil and grease effluent limitation is not clear in the case file; therefore, the effluent limitation was removed as allowed under 40 CFR 122.44(l)(2)(i)(B)(*2*). Removing the oil and grease effluent limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

The averaging period for the flow effluent limitation as been reduced to average monthly. The Discharger has stated that the capacity of the discharge pump is slightly above the current flow limit of 1.99 mgd. The Discharger also stated that because its Conditional Use Permit requires it to pump water to the groundwater recharge area, it will likely not discharge at the pump's capacity. The change in averaging period for the flow effluent limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Any impact on existing water quality will be insignificant.

4. Satisfaction of Antidegradation Policy

a. Surface Water. The permitted surface water discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. This Order does not authorize an increase in flow or mass of pollutants to St. Johns River over that previously authorized under Order No. R5-2005-0058. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

b. Groundwater. Based on the information available, the discharge is not expected to degrade underlying groundwater; therefore, the discharge is consistent with Resolution No. 68-16. The Discharger utilizes unlined settling ponds and a groundwater recharge system. ~~Wastewater from gravel mining with wash water and~~ It is possible that unlined settling ponds ~~can~~ could provide conditions

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conducive to the conversion of insoluble iron and manganese to more soluble forms that can discharge to groundwater. Percolation from the unlined settling ponds and groundwater recharge may result in an increase in the concentration of these constituents in groundwater. The discharge to the St. Johns River is comprised mostly of groundwater that infiltrates the mining area, which includes groundwater that may be affected by the unlined settling ponds. This Order requires the Discharger to monitor the discharge for iron and manganese. In addition, this Order requires the Discharger to provide additional groundwater information and monitoring data. ~~This Order requires the Discharger to monitor groundwater within the area of the ponds to determine whether groundwater is being degraded by the discharge. If groundwater degradation is occurring, it would be in violation of this Order. To the extent that degradation may be allowed in the future, it would have to be authorized by a separate Board action and would have to be found consistent with 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, settleable solids, and total suspended solids~~, and oil and grease~~. The WQBELs consist of restrictions on pH, chloride, and electrical conductivity. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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

Final effluent limitations were determined by comparing the technology-based effluent limitations (including the effluent limitations established in WDRs Order No. R5-2005-0058) and the WQBELs and applying the most stringent limitations for each individual parameter. Effluent limitations for pH, chloride, and electrical conductivity are based on applicable water quality criteria. Effluent limitations carried over from Order No. R5-2005-0058 for settleable solids~~,~~ and total suspended solids~~, and oil and grease~~ reflect technology-based effluent limitations developed using BPJ. The effluent limitation established for flow is based on the design flow capacity of the Facility.

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The final effluent limitations for the discharge of groundwater and storm water effluent through Discharge Point 001 are summarized below:

Summary of Final Effluent Limitations
Discharge Point 001

Table F-11. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations				Basis[1]
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	~~--~~1.99	~~1.99~~--	--	--	BPJ
Total Suspended Solids	mg/L	25	45	--	--	PO, BPJ
Settleable Solids	mL/L	0.1	0.5	--	--	PO, BPJ
~~Oil and Grease~~	~~mg/L~~	~~--~~	~~35~~	~~--~~	~~--~~	~~PO, BPJ~~
pH	standard units	--	--	6.5	8.3	PO, BP
Chloride	mg/L	--	175	--	--	BP
Electrical Conductivity @ 25 ºC	µmhos/cm	--	1000	--	--	BP

(1) BPJ – Based on Best Professional Judgment
PO – Based on previous order (WDRs Order No. 2005-0058)
BP – Based on the water quality objectives 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:

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

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

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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, suspended sediment, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, water contact recreation, and non-contact water recreation.

2. The unlined settling ponds and groundwater recharge system discharge to underlying groundwater.

3. The 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*." This Order requires the Discharger to provide additional groundwater information and to conduct effluent and groundwater~~Groundwater~~ monitoring ~~is included, as described below,~~ to ensure that compliance is being achieved with this groundwater limitation ~~and, if not, to initiate a process to ensure any degradation is consistent with Resolution No. 68-16~~.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the

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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 for flow, ~~chloride, electrical conductivity @ 25 ºC,~~ pH, and settleable solids~~, and total suspended solids~~ have been retained from Order No. R5-2005-0058 to determine compliance with effluent limitations for these parameters. ~~Effluent monitoring for oil and grease has been increased from once per year to once per month to determine compliance with the effluent limitation.~~Monitoring requirements have been reduced for chloride, electrical conductivity @ 25°C, and total suspended solids.

3. Monitoring for oil and grease has been removed. This Order does not carry over the oil and grease effluent limitation. Monitoring data collected during Order No. R5-2005-0058 show oil and grease was not detected in the effluent in four samples; therefore, the monitoring requirement is not carried over from Order No. R5-2005-0058.

~~3.~~4. Effluent monitoring for total recoverable iron and manganese are carried over from Order No. R5-2005-0058. Effluent monitoring for dissolved iron and manganese is included in this Order to determine the potential for iron and manganese to impact groundwater and to assess whether Facility operations have impacted groundwater.

~~4.~~5. Monitoring data collected over the previous permit term for boron did not demonstrate reasonable potential to exceed water quality objectives/criteria. ~~However, monitoring requirements for boron have been carried over to continue to evaluate compliance with water quality objectives/criteria.~~Monitoring requirements for boron have been reduced to once per year.

~~5.~~6. As discussed in Section IV.C.3.b of this Fact Sheet, although there was a detection of copper in the effluent and receiving water, the effluent and receiving water values were estimated. Copper was determined to not have reasonable potential and therefore no WQBELs were established. Since copper was detected in the receiving water and the effluent, annual monitoring is required by this Order for copper.

~~6.~~7. Section 1.3 of the SIP requires the Central Valley Water Board to require periodic monitoring for priority pollutants, at least once prior to the reissuance of a permit, for

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which criteria or objectives apply and for which no effluent limitations have been established. To comply with the SIP and to adequately characterize the discharge, this Order requires the Discharger to sample its effluent for the priority pollutants specifically listed in Attachment ~~I~~H ~~in 2012 and 2014~~once during the first year, and for metals in 2012, 2013, and 2014.

~~7.~~8. 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 ~~monthly~~ quarterly following permit adoption.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. This Order allows the Discharger to request to reduce monitoring after two years.

2. **Chronic Toxicity.** ~~Annual chronic~~ Chronic whole effluent toxicity testing is required once during the first year of the permit in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. Order No. R5-2005-0058 required the Discharger to conduct chronic toxicity testing once during the life of the permit. The test results showed the effluent did not exhibit chronic toxicity. ~~This Order allows the Discharger to request to eliminate chronic toxicity testing after three years.~~

D. Receiving Water Monitoring

1. Surface Water

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

b. Monitoring for priority pollutants, specified in Attachment ~~I~~H, is required ~~in 2012 and 2014~~ once during the first year of the permit and for metals in 2012, 2013, and 2014 to collect necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and hardness (as $CaCO_3$) of the receiving water shall also be monitored concurrently with the priority pollutants and metals to ensure the water quality criteria are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.

2. Groundwater

a. CWC 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*

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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 the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. ~~The Monitoring and Reporting Program is issued pursuant to CWC section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.~~

~~**b.**Monitoring of the groundwater must be conducted to determine if the discharge and Facility operations have caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation (if any), an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. This Order contains Groundwater Limitations that do not allow groundwater quality to be degraded when compared to background groundwater quality. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution No. 68-16 and the Basin Plan.~~

~~**c.**This Order requires the Discharger to initiate groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary 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. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.~~

~~**d.**~~**b.** The unlined settling ponds and groundwater recharge system 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 or through disposal site soils. This can result in iron and manganese groundwater concentrations that exceed applicable MCLs. ~~A Central Valley Water Board investigation conducted in the early 1990s confirmed that conditions conducive to the conversion of insoluble iron and manganese to more soluble forms can occur in gravel mining recycle and wash water ponds. Anecdotal data from sites where organic wastes are land applied indicate that arsenic in the soil column is also converted under reducing~~

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~~conditions to more soluble forms and leached to groundwater at levels exceeding MCLs.~~

c. Order No. R5-2005-0058 required the Discharger to prepare a technical report in the form of a work plan and implementation schedule to conduct a hydrogeologic investigation to determine the potential impacts of the Discharger's historical operations upon underlying groundwater. The provision required the Discharger to submit a work plan that provided a summary of data sources and methodologies the Discharger would use to determine the local direction of groundwater flow, groundwater quality in the vicinity, and the impacts on underlying groundwater by the operations. The Discharger submitted analytical data for a sample collected in December 2010 from its onsite office well. The data show iron and manganese were not detected above their respective reporting limits. The Discharger also submitted iron and manganese data going back to late 1980 for two wells in the groundwater recharge area. The data show iron was detected above the Secondary MCL in one of the wells on several occasions. However, the data do not specify whether the results are reported in total or dissolved form. Based on existing sources of data, such as existing groundwater wells and effluent monitoring, the additional information required by Special Provision VI.C.2.b. and the additional effluent and groundwater monitoring required by this Order may provide sufficient information to evaluate the Facility's groundwater impact; therefore, this Order does not require the Discharger to install a groundwater monitoring well network.

E. Other Monitoring Requirements

1. Ponds

Visual observations of ponds are required to assess the general characteristics of water in the ponds, the 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

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

B. Special Provisions

1. Reopener Provisions

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

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.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation. Since there is not enough data to determine reasonable potential for chronic toxicity, rather than a detailed TRE Work Plan, this provision requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. An Initial Investigative TRE Work Plan is a one to two page document including, at a minimum:

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

ii. A description of the Facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the Facility; and

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

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 a pattern of toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether toxicity is repeatedly or periodically present before requiring the implementation of a TRE.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Due to the possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required.*" Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern 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. There is not a sufficient amount of chronic WET data to determine if the discharge has reasonable potential. In the event effluent toxicity is encountered in the future, the Discharger will be required to prepare a detailed TRE Work Plan in accordance with USEPA guidance, per the requirements of this provision. 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.

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- 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.

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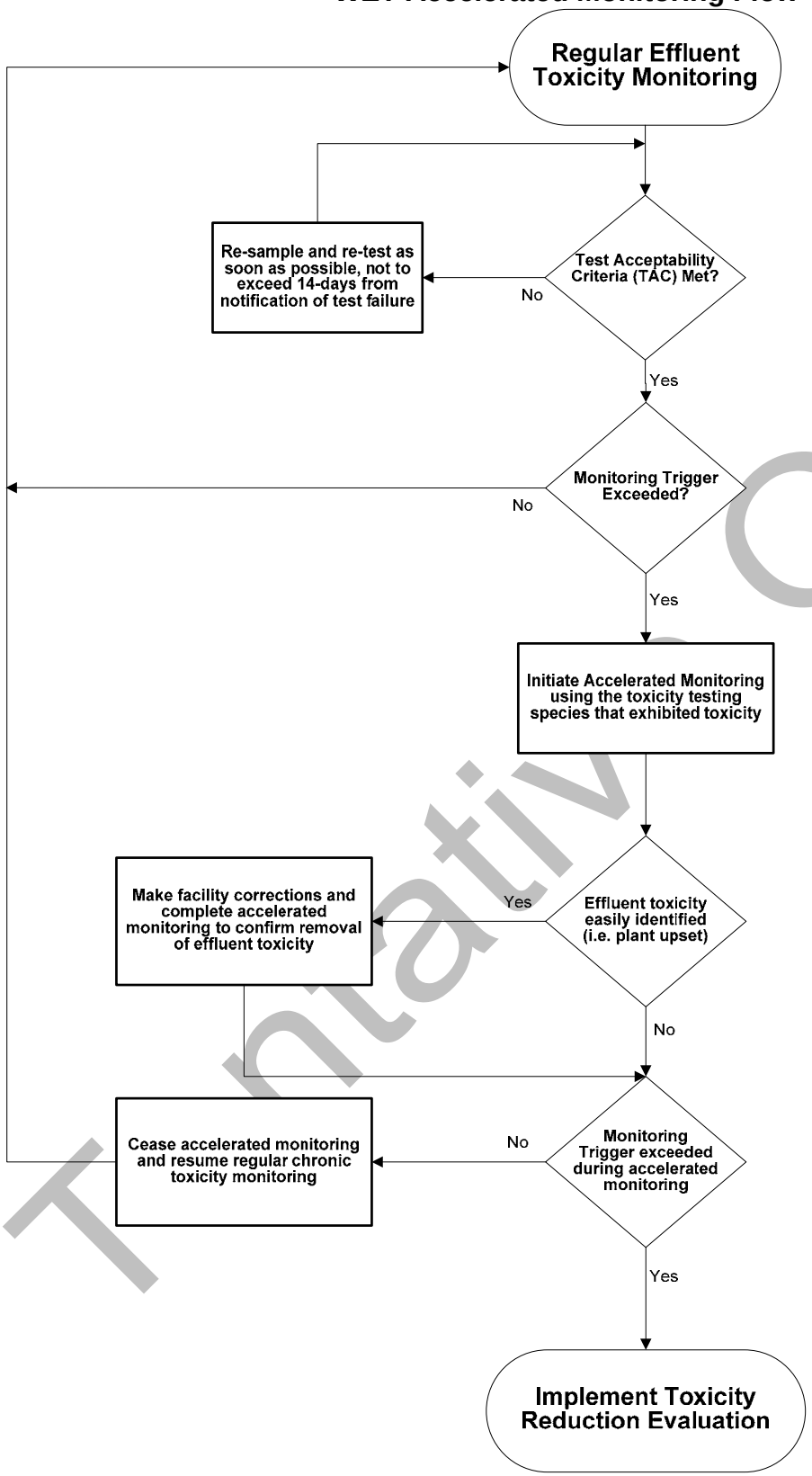
Figure F-1
WET Accelerated Monitoring Flow Chart



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~~**b.Groundwater Monitoring.** To determine compliance with the groundwater limitations contained in section V.B. of this Order, the Discharger is required to install a groundwater monitoring network, including the installation of at least one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. Currently, there are no groundwater monitoring wells downgradient of the unlined settling ponds and groundwater recharge system. The Discharger must install new groundwater monitoring wells, if necessary, collect monitoring data, and submit a report evaluating the underlying groundwater in accordance with an approved time schedule. If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to BPTC and minimizing the discharge's impact on groundwater quality.~~

b. Groundwater Data. The Discharger is required to submit additional information relating to groundwater in the vicinity of the Facility. The additional information, together with additional monitoring and existing information, may provide the Central Valley Water Board enough information to evaluate the impact to groundwater from Facility operations.

c. Manganese Background Study. The Discharger is required to submit a technical report to characterize the natural surface water quality in the St. Johns River for manganese. The Discharger is also required to submit an evaluation of the extent to which the effluent is used for irrigation when the St. Johns River is not used to convey irrigation supplies from Lake Kaweah. The results will allow determination of whether effluent manganese concentrations can cause or contribute to an exceedance of a narrative objective for the protection of the agricultural supply beneficial use.

3. Best Management Practices and Pollution Prevention – Not Applicable

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

4. Construction, Operation, and Maintenance Specifications

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.

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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 also provided through physical posting (posting at the Facility and nearest city hall) and Internet posting.

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **18 October 2010**.

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: 8/9/10 December 2010
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral

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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 http://www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address below at any time between 8:00 a.m. and 4:00 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116. Our office is at 1685 E Street, Fresno, California 93706.

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 Aide Ortiz at (559) 445-6083.

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ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	Ag Goal	Reasonable Potential
Arsenic, Total Recoverable	µg/L	1.72(1)	0.97(1)	150	340	150	--	--	--	--	No
Chromium, Total	µg/L	1.25(1)	1.38(1)	--	--	--	--	--	--	--	No
Copper, Total Recoverable	µg/L	0.80(1)	1.92(1)	1.74	2.20	1.74	--	--	--	--	No
Lead, Total Recoverable	µg/L	ND	0.2(1)	0.26	7	0.26	--	--	--	5000	No
Selenium, Total Recoverable	µg/L	ND	1.42(1)	5	20	5	--	--	--	20	No
Silver, Total Recoverable	µg/L	0.11(1)	ND	0.14	0.14	--	--	--	--	--	No
Mercury, Total Recoverable	µg/L	0.00041(1)	0.0038	0.051	--	--	--	0.051	--	--	No
Nickel, Total Recoverable	µg/L	ND	0.95(1)	9.89	89	9.89	--	4600	--	--	No
Zinc, Total Recoverable	µg/L	2.52(1)	2.5(1)	22.65	22.65	22.65	--	--	--	--	No
Boron, Total Recoverable	mg/L	0.34	--	1.0	--	--	--	--	1.0	--	No
Chloride	mg/L	180(3)	--	175	860(2)	230(2)	--	--	175	--	Yes
Electrical Conductivity @ 25 ºC	µmhos/cm	879	258	1000	--	--	--	--	1000	--	No
Iron, Total Recoverable	mg/L	0.47(4)	--	1.0	--	1.0(2)	--	--	--	--	No
Manganese, Total Recoverable	mg/L	0.79	--	0.2	--	--	--	--	--	0.2	Indeterminate

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
ND = Non-detect

Footnotes:
(1) Trace values, results between MDL and RL (estimates)
(2) Non-CTR criteria; USEPA Ambient Water Quality Criteria
(3) Highest reported value of 210 mg/L appears to be an outlier
(4) Highest reported value of 1.2 mg/L appears to be an outlier

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~~H. ATTACHMENT H – STANDARD MONITORING WELL PROVISIONS~~

~~Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing at least the information specified in this document. Wells may be installed after the Executive Officer's approval of the work plan. Upon installation of the monitoring wells, the Discharger shall submit a report of results, as described below. A registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California must sign all work plans and reports.~~

~~I. MONITORING WELL INSTALLATION WORK PLAN~~

~~A.General Information:~~

~~1.Monitoring well locations and rationale~~
~~2.Survey details~~
~~3.Equipment decontamination procedures~~
~~4.Health and safety plan~~
~~5.Topographic map showing any existing monitoring wells, proposed wells, waste handling facilities, utilities, and other major physical and man-made features.~~

~~B.Drilling Details:~~ ~~Describe drilling and logging methods~~

~~C.Monitoring Well Design:~~

~~1.Casing diameter~~
~~2.Borehole diameter~~
~~3.Depth of surface seal~~
~~4.Well construction materials~~
~~5.Diagram of well construction~~
~~6.Type of well cap~~
~~7.Size of perforations and rationale~~
~~8.Grain size of sand pack and rationale~~
~~9.Thickness and position of bentonite seal and sand pack~~
~~10.Depth of well, length and position of perforated interval and rationale for monitoring first-encountered groundwater~~

~~D.Well Development:~~

~~1.Method of development to be used~~
~~2.Method of determining when development is complete~~
~~3.Method of development water disposal~~

~~E.Surveying Details:~~ ~~Discuss how each well will be surveyed to a common reference point~~

~~F.Soil Sampling (if applicable):~~

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1.Cuttings disposal method
2.Analyses to be run and methods
3.Sample collection and preservation method
4.Intervals at which soil samples are to be collected
5.Number of soil samples and rationale
6.Location of soil samples and rationale
7.QA/QC procedures

G.Well Sampling:

1.Minimum time after development before sampling (minimum 72 hours)
2.Well purging method and amount of purge water
3.Sampling equipment and decontamination of sampling equipment
4.Sample collection, preservation, and shipment method
5.Analytical procedures
6.QA/QC procedures

H.Water Level Measurement:

The reference point and ground surface elevations at each monitoring well shall be determined within 0.01 foot. Method and time of water level measurement shall be specified.

I.Proposed Time Schedule for Work

II. MONITORING WELL INSTALLATION REPORT OF RESULTS

A.Well Construction:

1.Number and depth of wells drilled
2.Date(s) wells drilled
3.Description of drilling and construction
4.Approximate locations relative to treatment facilities and discharge area(s)
5.A well construction diagram for each well containing the following details:

a.Monitoring well number
b.Location
c.Date drilled
d.Total depth drilled[1]
e.Depth of open hole[1, 2]
f.Footage of hole collapsed
g.Length of slotted casing installed
h.Depth of bottom of casing[1]
i.Depth to top of sand pack[1]
j.Number of bags of sand
k.Thickness of sand pack
l.Thickness of bentonite seal
m.Thickness of concrete grout

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n.Boring diameter
o.Casing diameter
p.Casing material
q.Size of perforations
r.Well elevation at top of casing
s.Date of water level measurement
t.Depth to which water was first found[1]
u.Depth to which water was found after perforating[1]
v.Depth to top of bentonite seal[1]

[1]From ground surface
[2]Same as total depth if no caving appears

B.Well Development:

1.Date(s) of development of each well
2.Method of development
3.Volume of water purged from well
4.How well development completion was determined
5.Method of effluent disposal
6.Field notes from well development should be included in report

C.Well Surveying: Provide for each well:

1.Reference elevation (feet above mean sea level to within 0.01 foot)
2.Ground surface elevation (feet above mean sea level to within 0.01 foot)
3.Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum
4.Surveyor's notes

D.Water Sampling:

1.Date(s) of sampling
2.How well was purged
3.Levels of temperature, EC, and pH at stabilization
4.Sample collection, handling, and preservation methods
5.Sample identification
6.Analytical methods used
7.How many well volumes purged
8.Water level elevation(s)
9.Groundwater contour map
10.Laboratory analytical data sheets

E.Soil Sampling (if applicable):

1.Date(s) of sampling
2.Sample collection, handling, and preservation method
3.Sample identification
4.Analytical methods used
5.Laboratory analytical data sheets

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~~I.~~H. ATTACHMENT ~~I~~H – PRIORITY POLLUTANTS – NON-METALS

I. PRIORITY POLLUTANTS – NON-METALS

CTR#	Pollutant	CTR#	Pollutant	CTR#	Pollutant
14	Cyanide	50	2-Nitrophenol	86	Fluoranthene
15	Asbestos	51	4-Nitrophenol	87	Fluorene
16	2,3,7,8-TCDD (Dioxin)	52	3-Methyl-4-Chlorophenol	88	Hexachlorobenzene
17	Acrolein	53	Pentachlorophenol	89	Hexachlorobutadiene
18	Acrylonitrile	54	Phenol	90	Hexachlorocyclopentadiene
19	Benzene	55	2,4,6-Trichlorophenol	91	Hexachloroethane
20	Bromoform	56	Acenaphthene	92	Indeno(1,2,3-cd) Pyrene
21	Carbon Tetrachloride	57	Acenaphthylene	93	Isophorone
22	Chlorobenzene	58	Anthracene	94	Naphthalene
23	Chlorodibromomethane	59	Benzidine	95	Nitrobenzene
24	Chloroethane	60	Benzo(a)Anthracene	96	N-Nitrosodimethylamine
25	2-Chloroethylvinyl Ether	61	Benzo(a)Pyrene	97	N-Nitrosodi-n-Propylamine
26	Chloroform	62	Benzo(b)Fluoranthene	98	N-Nitrosodiphenylamine
27	Dichlorobromomethane	63	Benzo(ghi)Perylene	99	Phenanthrene
28	1,1-Dichloroethane	64	Benzo(k)Fluoranthene	100	Pyrene
29	1,2-Dichloroethane	65	Bis(2-Chloroethoxy)Methane	101	1,2,4-Trichlorobenzene
30	1,1-Dichloroethylene	66	Bis(2-Chloroethyl)Ether	102	Aldrin
31	1,2-Dichloropropane	67	Bis(2-Chloroisopropyl)Ether	103	alpha-BHC
32	1,3-Dichloropropylene	68	Bis(2-Ethylhexyl)Phthalate	104	beta-BHC
33	Ethylbenzene	69	4-Bromophenyl Phenyl Ether	105	gamma-BHC
34	Methyl Bromide	70	Butylbenzyl Phthalate	106	delta-BHC
35	Methyl Chloride	71	2-Chloronaphthalene	107	Chlordane
36	Methylene Chloride	72	4-Chlorophenyl Phenyl Ether	108	4,4'-DDT
37	1,1,2,2-Tetrachloroethane	73	Chrysene	109	4,4'-DDE
38	Tetrachloroethylene	74	Dibenzo(a,h)Anthracene	110	4,4'-DDD
39	Toluene	75	1,2-Dichlorobenzene	111	Dieldrin
40	1,2-Trans-Dichloroethylene	76	1,3-Dichlorobenzene	112	alpha-Endosulfan
41	1,1,1-Trichloroethane	77	1,4-Dichlorobenzene	113	beta-Endosulfan
42	1,1,2-Trichloroethane	78	3,3'-Dichlorobenzidine	114	Endosulfan Sulfate
43	Trichloroethylene	79	Diethyl Phthalate	115	Endrin
44	Vinyl Chloride	80	Dimethyl Phthalate	116	Endrin Aldehyde
45	2-Chlorophenol	81	Di-n-Butyl Phthalate	117	Heptachlor
46	2,4-Dichlorophenol	82	2,4-Dinitrotoluene	118	Heptachlor Epoxide
47	2,4-Dimethylphenol	83	2,6-Dinitrotoluene	119-125	Polychlorinated biphenyls (PCBs)
48	2-Methyl-4,6-Dinitrophenol	84	Di-n-Octyl Phthalate		
49	2,4-Dinitrophenol	85	1,2-Diphenylhydrazine	126	Toxaphene

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