

- a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
- b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
- c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location LND-001

1. The Discharger shall monitor the emergency storage basin (when in use) at LND-001 as follows:

Table E-5. Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/Week	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	1
Freeboard	feet	Measure	1/Day	--
Levee Condition	--	Observation	1/Week	--
Odors	--	Observation	1/Week	--
pH	standard units	Grab	3/Week	1

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

VII. RECLAMATION MONITORING REQUIREMENTS

1. The Discharger shall monitor tertiary treated reclaimed water at Monitoring Location REC-001 as follows:

Table E-6. Reclamation Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	1/Day	1
Total Coliform Organisms	MPN/100 mL	Grab	1/Day	1
Total Suspended Solids	mg/L	Grab	1/Day	1
Turbidity	NTU	Meter	Continuous	1

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

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001 through RSW-006

1. The Discharger shall monitor Harding Drain at RSW-001 and RSW-002 and the San Joaquin River at RSW-004, when discharging to Harding Drain at Discharge Point No. 001, as follows. Monitoring at RSW-001, RSW-002, and RSW-004 may be discontinued subsequent to the removal of the discharge from Harding Drain.

Table E-7. Receiving Water Monitoring Requirements – Monitoring Location RSW-001, RSW-002, and RSW-004

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Flow	MGD	--	1/Week ²	--
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	3
pH	standard units	Grab	1/Week	3
Priority Pollutants				
Priority Pollutants	µg/L	Grab	1/Month ^{2,4}	3
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab ⁵	1/Month	3
Chlorpyrifos	µg/L	Grab	1/Quarter	3,6
Diazinon	µg/L	Grab	1/Quarter	3,6
Dissolved Oxygen	mg/L	Grab	1/Week	3
Electrical Conductivity@ 25°C	µmhos/cm	Grab	1/Week	3
Hardness (as CaCO ₃)	mg/L	Grab	1/Quarter	3
Temperature	°F	Grab	1/Week	3
Turbidity	NTU	Grab	1/Week	3

¹ Constituents with weekly sampling frequency may be reduced to monthly at RSW-004 when the San Joaquin River is at "monitor stage" (river elevation is at 48.0 feet (15,242 cfs) at the West Main Bridge near Patterson (SJP) gauging station) and may be discontinued while the San Joaquin River is at "flood stage" (river elevation is at 54.7 feet at the West Main Bridge near Patterson (SJP) gauging station).

² Monitoring required at RSW-001 only.

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

⁴ Priority pollutant monitoring is required 1/month during the 3rd year of the permit term.

⁵ Temperature and pH shall be collected at the same time as the ammonia sample.

⁶ Chlorpyrifos and diazinon shall be sampled using EPA Method 625M, Method 8141, or equivalent GC/MS method.

2. The Discharger shall monitor the San Joaquin River at RSW-003, when discharging to Harding Drain at Discharge Point No. 001 and the San Joaquin River at Discharge Point No. 002, as follows:

Table E-8. Receiving Water Monitoring Requirements – Monitoring Location RSW-003

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Flow	MGD	--	1/Week	--
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	2
pH	standard units	Grab	1/Week	2
Priority Pollutants				
Priority Pollutants	µg/L	Grab	1/Month ³	2
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab ⁴	1/Month	2
Chlorpyrifos	µg/L	Grab	1/Quarter	2,5
Diazinon	µg/L	Grab	1/Quarter	2,5
Dissolved Oxygen	mg/L	Grab	1/Week	2
Electrical Conductivity@ 25°C	µmhos/cm	Grab	1/Week	2
Hardness (as CaCO ₃)	mg/L	Grab	1/Quarter	2
Temperature	°F	Grab	1/Week	2
Turbidity	NTU	Grab	1/Week	2

- ¹ Constituents with weekly sampling frequency may be reduced to monthly when the San Joaquin River is at "monitor stage" (river elevation is at 48.0 feet (15,242 cfs) at the West Main Bridge near Patterson (SJP) gauging station) and may be discontinued while the San Joaquin River is at "flood stage" (river elevation is at 54.7 feet at the West Main Bridge near Patterson (SJP) gauging station).
- ² Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.
- ³ Priority pollutant monitoring is required 1/month during the 3rd year of the permit term.
- ⁴ Temperature and pH shall be collected at the same time as the ammonia sample.
- ⁵ Chlorpyrifos and diazinon shall be sampled using EPA Method 625M, Method 8141, or equivalent GC/MS method.

3. The Discharger shall monitor the San Joaquin River at RSW-005, when discharging to the San Joaquin River at Discharge Point No. 002, as follows:

Table E-9. Receiving Water Monitoring Requirements – Monitoring Location RSW-005

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Conventional Pollutants				
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	2
pH	standard units	Grab	1/Week	2
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	Grab ³	1/Month	2
Chlorpyrifos	µg/L	Grab	1/Quarter	2,4
Diazinon	µg/L	Grab	1/Quarter	2,4
Dissolved Oxygen	mg/L	Grab	1/Week	2
Electrical Conductivity@ 25°C	µmhos/cm	Grab	1/Week	2

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Hardness (as CaCO ₃)	mg/L	Grab	1/Quarter	²
Temperature	°F	Grab	1/Week	²
Turbidity	NTU	Grab	1/Week	²

¹ Constituents with weekly sampling frequency may be reduced to monthly when the San Joaquin River is at "monitor stage" (river elevation is at 48.0 feet (15,242 cfs) at the West Main Bridge near Patterson (SJP) gauging station) and may be discontinued while the San Joaquin River is at "flood stage" (river elevation is at 54.7 feet at the West Main Bridge near Patterson (SJP) gauging station).

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

³ Temperature and pH shall be collected at the same time as the ammonia sample.

⁴ Chlorpyrifos and diazinon shall be sampled using EPA Method 625M, Method 8141, or equivalent GC/MS method.

4. The Discharger shall monitor the San Joaquin River at RSW-006, when discharging to the San Joaquin River at Discharge Point No. 002, as follows:

Table E-10. Receiving Water Monitoring Requirements – Monitoring Location RSW-006

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Priority Pollutants				
Carbon Tetrachloride	µg/L	Grab	1/Quarter	²
Chlorodibromomethane	µg/L	Grab	1/Quarter	²
Dichlorobromomethane	µg/L	Grab	1/Quarter	²

¹ Constituents with weekly sampling frequency may be reduced to monthly when the San Joaquin River is at "monitor stage" (river elevation is at 48.0 feet (15,242 cfs) at the West Main Bridge near Patterson (SJP) gauging station) and may be discontinued while the San Joaquin River is at "flood stage" (river elevation is at 54.7 feet at the West Main Bridge near Patterson (SJP) gauging station).

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

5. In conducting the receiving water sampling when discharging to Harding Drain at Discharge Point No. 001, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-002 and the reach bounded by Monitoring Locations RSW-003 and RSW-004. In conducting the receiving water sampling when discharging to the San Joaquin River at Discharge Point No. 002, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-003 and RSW-005. Attention shall be given to the presence or absence of:

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

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

B. Monitoring Locations GW-001 and GW-002

1. Prior to construction and/or sampling of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional Water Board for approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Well Nos. GW-001 and GW-002) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at GW-001, GW-002, and any new groundwater monitoring wells shall include, at a minimum, the following:

Table E-11. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	1/Quarter	--
Groundwater Elevation ¹	±0.01 feet	Calculated	1/Quarter	--
Gradient	feet/feet	Calculated	1/Quarter	--
Gradient Direction	degrees	Calculated	1/Quarter	--
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	2
Total Dissolved Solids	mg/L	Grab	1/Quarter	2
Fixed Dissolved Solids	mg/L	Grab	1/Quarter	2
pH	standard units	Grab	1/Quarter	2
Total Coliform Organisms	MPN/100 mL	Grab	1/Quarter	2
Total Nitrogen	mg/L	Grab	1/Quarter	2
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	2
Ammonia (as NH ₄)	mg/L	Grab	1/Quarter	2
Total Kjeldahl Nitrogen	mg/L	Grab	1/Quarter	2
Standard Minerals ³	µg/L	Grab	1/Year	2

¹ Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.

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

³ Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

- a. A composite sample of biosolids shall be collected quarterly at Monitoring Location BIO-001 in accordance with EPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols).
- b. Sampling records shall be retained for a minimum of **5 years**. A log shall be maintained of biosolids quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log must be complete enough to serve as a basis for part of the annual report.
- c. Upon removal of biosolids, the Discharger shall submit characterization of biosolids quality, including sludge percent solids and the most recent quantitative results of chemical analysis for the priority pollutants listed in 40 CFR Part 122, Appendix D, Tables II and III (excluding total phenols). In addition to USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, suggested methods for analysis of biosolids are provided in USEPA publications titled "*Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*" and "*Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*". Recommended analytical holding times for biosolids samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available.

B. Municipal Water Supply

1. Monitoring Location SPL-001

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

Table E-12. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Standard Minerals ²	µg/L	--	2/Year	3
Electrical Conductivity @ 25°C	µmhos/cm	--	1/Quarter	3
Total Dissolved Solids	mg/L	--	1/Quarter	3

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
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¹ If the water supply is from more than one source, the results shall be reported as a weighted average and include copies of supporting calculations. Alternatively, the Discharger may composite individual grab samples on a flow-weighted basis from multiple locations to represent the water supply within the service area. Composited samples must be taken in accordance with the sample handling and preservation requirements specified in 40 CFR Part 136.

² Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

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

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Regional 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 Regional 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 Regional Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.
5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

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

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

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

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.
4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.
5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.
6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

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

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

Table E-13. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling
1/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of 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 second calendar month following month of sampling
3/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of 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	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
2/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/Year	1 January following (or on) permit effective date	January 1 through December 31	1 February
2/Year	Closest of 1 January or 1 July following (or on) permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/ Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated cannot be accepted unless they follow the exact same format as EPA form 3320-1.

D. Other Reports

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

Table E-14. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Salinity Source Control Program and Goal (section VI.C.3.a.)	1 June, annually

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.
4. **Annual Operations Report.** By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
 - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
 - e. The Discharger may also be requested to submit an annual report to the Regional 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.
5. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by **28 February** and include at least the following items:

- a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.
- c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
- d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:
 - i. complied with baseline monitoring report requirements (where applicable);
 - ii. consistently achieved compliance;
 - iii. inconsistently achieved compliance;
 - iv. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

- v. complied with schedule to achieve compliance (include the date final compliance is required);
- vi. did not achieve compliance and not on a compliance schedule; and
- vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii. through vii. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

- e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:
 - i. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. the conclusions or results from the inspection or sampling of each industrial user.
- f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:
 - i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
 - ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

- v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
 - vi. Restriction of flow to the POTW.
 - vii. Disconnection from discharge to the POTW.
- g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.
- h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board
Division of Water Quality
1001 I Street or P.O. Box 100
Sacramento, CA 95814

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

6. **Water Recycling/Reuse Annual Report.** An annual report shall be prepared and shall include an update of the Discharger's water recycling/reuse activities within the Discharger's service area (e.g., landscape, golf course irrigation, etc). The annual report shall be submitted to the Regional Water Board by **1 July** each year.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described 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	5C500108001
Discharger	City of Turlock
Name of Facility	Water Quality Control Facility
Facility Address	901 S. Walnut Road
	Turlock, CA 95380
	Stanislaus County
Facility Contact, Title and Phone	Dan Madden, Municipal Services Director, (209) 668-5590
Authorized Person to Sign and Submit Reports	Dan Madden, Municipal Services Director, (209) 668-5590
Mailing Address	156 S. Broadway, Suite 270, Turlock, CA 95380
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Producer – 2.0 MGD of recycled water for cooling purposes to the Walnut Energy Center
Facility Permitted Flow	20 million gallons per day (MGD)
Facility Design Flow	20 MGD
Watershed	Middle San Joaquin – Lower Merced – Lower Stanislaus
Receiving Water	Harding Drain and San Joaquin River
Receiving Water Type	Manmade agricultural drain (Harding Drain) and inland surface water (San Joaquin River)

A. The City of Turlock (hereinafter Discharger) is the owner and operator of the Water Quality Control Facility (hereinafter Facility), a POTW.

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

- B.** The Facility discharges wastewater to Harding Drain, a water of the United States, and is currently regulated by Order No. 5-01-122 which was adopted on 11 May 2001 and expired on 1 May 2006. The terms and conditions of the Order No. 5-01-122 have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.
- C.** The Discharger petitioned the State Water Resources Control Board (State Water Board) to review the decision of the Regional Water Resources Control Board (Regional Water Board) regarding final adoption of Order No. 5-01-122 and the associated Cease and Desist Order (CDO) No. 5-01-123. In the petition, the Discharger objected to a number of limitations contained in the Order and CDO, contending that the requirements imposed by the Regional Water Board were unnecessary, overly stringent, and impossible to achieve without costly measures that will endanger the economic vitality of the Discharger’s service area. To address the petition, the State Water Board adopted Order WQO 2002-0016 on 3 October 2002, remanding the Order and the CDO to the Regional Water Board for modifications. In WQO 2002-0016, the State Water Board concluded that the Regional Water Board must clarify and support beneficial use determinations for Harding Drain; include findings explaining reasonable potential determinations and calculation of effluent limitations; include compliance schedules in the permit when there is a basis for doing so; and impose appropriate temperature controls on the discharge based on a site-specific study. As a result, WQO 2002-0016 stayed effluent limitations for aluminum, copper, cyanide, zinc, bromodichloromethane, molybdenum, tributyltin, iron, ammonia, and manganese in Order No. 5-01-122; compliance schedules for copper, cyanide, zinc, and bromodichloromethane in Order No. 5-01-122; compliance schedules for aluminum and molybdenum in CDO No. 5-01-123; and the receiving water limitation for temperature in Order No. 5-01-122.

To address the technical issues that were raised in the petition and addressed in the remand, the Regional Water Board drafted a tentative Order for the discharge which was to be presented at the 22/23 April 2004 Board Meeting. However, on 5 March 2004, the Discharger submitted a request for deferral of issuance of the renewal Order and CDO for the discharge to Harding Drain. The Discharger requested deferral because of their intent to construct a pipeline by September 2006 that would move the location of discharge from Harding Drain to the San Joaquin River. The Discharger proposed to submit a Petition for Change with the State Water Board concurrent with a new Report of Waste Discharge (ROWD) in April 2004 for the Regional Water Board to prepare a tentative draft for the direct discharge to the San Joaquin River.

- D.** The Discharger filed a ROWD and submitted an application for renewal of its WDRs and NPDES permit on 27 April 2004. Although the Discharger expected to complete the

certification of an Environmental Impact Report (EIR) by September 2004 to satisfy obligations under the California Environmental Quality Act (CEQA) for the change in discharge location, the EIR was not certified until May 2005. The Discharger petitioned the State Water Board for change in the point of discharge on 13 July 2005 (Wastewater Change Petition W-44) which was approved on 7 July 2006. Subsequent to a permit from the Army Corps of Engineers, the Discharger intends to put out a bid for the project and commence construction as soon as possible. The schedule for construction is approximately 18 months.

- E. Supplemental application information was requested on 13 June 2008 and was received on 16 July 2008. The application was deemed complete on 18 July 2008.

II. FACILITY DESCRIPTION

The Facility is a regional facility. The Discharger provides sewerage service for the City of Turlock and the community service districts of Keyes and Denair and receives primary treated effluent from the City of Ceres. The Facility serves a population of approximately 78,179 people and 10 significant industrial users (SIUs). The design daily average flow capacity of the Facility is 20 MGD.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system at the Facility consists of screening, primary treatment (flotation), secondary treatment (activated sludge) that includes biotowers, aeration and nitrification (waste solids are treated via a gravity belt thickener and anaerobic digestion), secondary clarification, high rate clarifier / thickener, cloth disk filters, and chlorine disinfection and sodium bisulfite dechlorination. The wastewater facilities also include a 37.2 million gallon earthen emergency storage basin, which allows the diversion and storage of primary effluent if necessary. The emergency storage basin was constructed with a 6-inch bentonite liner on the bottom and sides. The basin is used for the temporary storage of influent wastes that may cause treatment plant upsets or to hold effluent wastewater that may not meet effluent permit limitations. Wastewater from the basin is recycled to the treatment plant as conditions allow. Biosolids generated are reused in agricultural land application and for public distribution.

The Discharger currently provides 2.0 MGD of recycled water for cooling purposes to the Walnut Energy Center, a 250 Megawatt power plant owned and operated by the Turlock Irrigation District. The Discharger also provides recycled water to the Pedretti Sports Complex for irrigation purposes. Additionally, the Discharger has laid infrastructure (purple pipe) in a number of newer developments and park space for future use of recycled water on landscape and possible dual plumbed water systems.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 21, T5S, R10E, MDB&M, as shown in Attachment B, a part of this Order.

2. Currently, treated municipal and industrial wastewater is discharged from Discharge Point No. 001 to Harding Drain [also known as the Turlock Irrigational District (TID) Lateral 5 Canal], a water of the United States, at a point Latitude 37° 27' 50" N and Longitude 120° 55' 52" W, which is tributary to the San Joaquin River approximately 5-miles-downstream-of-the-discharge-point. Harding Drain is a man-made agricultural drainage facility designed and maintained by TID for drainage purposes. In addition to the effluent from the Facility, Harding Drain carries flows from TID operational spill water, tailwater from row and orchard crops, municipal storm water, and other runoff.
3. The Discharger is currently planning to construct a dedicated pipeline to transport and discharge treated wastewater from the Facility directly to the San Joaquin River through Discharge Point No. 002. The approximate location of the proposed Discharge Point No. 002 in the San Joaquin River, a water of the United States, is at a point Latitude 37° 27' 47" N and Longitude 120° 01' 57" W. Discharge Point No. 002 will be located approximately 500 feet upstream in the San Joaquin River from the confluence of the Harding Drain and the San Joaquin River.

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

Effluent limitations contained in Order No. 5-01-122 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. 5-01-122 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From June 2001 – April 2008)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30 ¹	45 ¹	90 ¹	14.67	21.14	40
		10 ²	15 ²	20 ²	3.13	5.43	10
	lbs/day ³	5,004 ¹	7,506 ¹	15,012 ¹	1,200	1,642	2,602
		1,668 ²	2,502 ²	3,336 ²	305	514	851
% Removal	85	--	--	98.37 ⁴	--	--	
Total Suspended Solids	mg/L	30 ¹	45 ¹	90 ¹	25.13	47.29	106
		10 ²	15 ²	20 ²	6.26	10.57	25
	lbs/day	5,004 ¹	7,506 ¹	15,012 ¹	2,312	3,284	5,746
		1,668 ²	2,502 ²	3,336 ²	629	993	1,856
% Removal	85	--	--	96.94 ⁴	--	--	
Settleable Solids	mL/L	0.1	--	0.2	0.26	--	4.0
Total Coliform Organisms	MPN/100	23 ^{1,5}	--	500 ¹	113	--	1,600
	mL	2.2 ^{2,5}	--	240 ^{2,6}	--	--	64
Turbidity	NTU	--	--	2 ^{2,7}	--	--	9.96
Oil & Grease	mg/L	10	--	15	9.15	--	11.0
	lbs/day ³	1,668	--	2,502	824	--	991

Parameter	Units	Effluent Limitation			Monitoring Data (From June 2001 – April 2008)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Iron	µg/L	300 ^b	--	--	--	--	--
	lbs/day ³	50.0 ^b	--	--	--	--	--
Manganese	µg/L	50 ^b	--	--	--	--	--
	lbs/day ³	8.34 ^b	--	--	--	--	--
Molybdenum	µg/L	10 ^b	--	15 ^b	--	--	--
	lbs/day ³	1.67 ^b	--	2.50 ^b	--	--	--
Copper	µg/L	--	--	88 ^{1,8}	--	--	--
		4.50 ^{2,8}	--	10.90 ^{2,8}	--	--	--
	lbs/day ³	--	--	14.7 ^{1,8}	--	--	--
Cyanide	µg/L	0.750 ^{2,8}	--	1.82 ^{2,8}	--	--	--
		--	--	33 ^{1,8}	--	--	--
	lbs/day ³	4.25 ^{2,8}	--	8.52 ^{2,8}	--	--	--
Zinc	µg/L	--	--	900 ^{1,8}	--	--	--
		31.50 ^{2,8}	--	93.80 ^{2,8}	--	--	--
	lbs/day ³	--	--	150.1 ^{1,8}	--	--	--
Bromodichloromethane	µg/L	5.25 ^{2,8}	--	15.6 ^{2,8}	--	--	--
		--	--	3.25 ^{1,8}	--	--	--
	lbs/day ³	0.56 ^{2,8}	--	1.13 ^{2,8}	--	--	--
Aluminum	µg/L	--	--	0.54 ^{1,8}	--	--	--
		87 ^b	--	750 ^b	--	--	--
	lbs/day ³	14.5 ^b	--	125 ^b	--	--	--
Tributyltin	µg/L	0.063 ^b	--	0.46 ^b	--	--	--
	lbs/day ³	0.01 ^b	--	0.077 ^b	--	--	--
Ammonia as N	µg/L	^{8,9}	--	^{8,10}	--	--	--
	lbs/day ³	^{8,11}	--	^{8,11}	--	--	--
Chlorine, Total Residual	mg/L	0.01	--	0.02	<0.01	--	0.002
Dissolved Oxygen	mg/L	--	--	5 ^{1,12}	--	--	3 ⁴
		--	--	7.5 ^{2,12}	--	--	6.6 ⁴
Electrical Conductivity @ 25°C	µmhos/cm	1,100 ¹³	--	--	953	--	--
Total Dissolved Solids	mg/L	690 ¹³	--	--	635	--	--
	lbs/year	¹⁴	--	--	--	--	--
pH	standard units	--	--	6.5 – 8.5	--	--	4.7 – 9.1
Average Dry Weather Flow	MGD	20	--	--	--	--	--
Acute Toxicity	% Survival	15	--	--	--	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (From June 2001 – April 2008)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge

- 1 Interim limitation effective until 1 May 2006.
- 2 Final limitation effective 1 May 2006.
- 3 Based on a design flow of 20 MGD.
- 4 Represents the lowest observed value.
- 5 Applied as a monthly median effluent limitation.
- 6 In a 30-day period, only a single sample may exceed 23 MPN/100 mL and no sample should exceed 240 MPN/100 mL.
- 7 The daily maximum of 5 NTU must not be exceeded 5% of the time or 10 NTU at any time within a 24-hour period. The daily average must not exceed 2 NTU.
- 8 Effluent limitations stayed by State Water Board Order WQO 2002-0016.
- 9 Floating effluent limitations calculated in accordance with Attachment B of Order No. 5-01-122.
- 10 Floating effluent limitations calculated in accordance with Attachment C of Order No. 5-01-122.
- 11 Using the value, in mg/L, determined from Attachment B or C of Order No. 5-01-122 as appropriate, calculate lbs/day using the formula: $z \text{ mg/L} \times 8.345 \times 0.62 \text{ MGD} = y \text{ lbs/day}$.
- 12 The discharge shall meet or exceed the applicable concentration.
- 13 Interim effluent limitations effective for the permit term.
- 14 The interim effluent limitation for total dissolved solids included an annual maximum of 42,000,000 lbs/year.
- 15 Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay----- 70%
Median for any three or more consecutive bioassays ---- 90%

D. Compliance Summary

1. A number of Compliance Evaluation Inspections (CEIs) were conducted during the previous permit term (17 March 2003, 27 October 2003, 9 December 2004, and 30 October 2007). The following table summarizes permit effluent limitation exceedances that were identified during the 9 December 2004 CEI.

Table F-3. Summary of Effluent Limitation Exceedances During 9 December 2004 CEI

Date	Parameter	Value	Permit Requirement
7 February 2004	Settleable Solids (Daily Maximum)	1.0 mL/L	0.2 mL/L
1 July 2004	Total Coliform Organisms (Daily Maximum)	>1,600 MPN/100 mL	500 MPN/100 mL
24 July 2004	Settleable Solids (Daily Maximum)	0.30 mL/L	0.2 mL/L

E. Planned Changes

The Discharger is planning to construct a dedicated pipeline to transport and discharge treated wastewater from the Facility directly to the San Joaquin River from Discharge Point No. 002. The Discharger's EIR for the project was certified in May 2005. The Discharger petitioned the State Water Board for change in the point of discharge on 13 July 2005 (Wastewater Change Petition W-44) which was approved on 7 July 2006.

The Discharger is currently awaiting a permit from the Army Corps of Engineers. Once a permit from the Army Corps of Engineers has been issued, the Discharger intends to put out a bid for the project with construction commencing thereafter. The schedule for construction is approximately 18 months. The proposed location of Discharge Point No. 002 is approximately 500 feet upstream in the San Joaquin River from the confluence of Harding Drain and the San Joaquin River.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

See Limitations and Discharge Requirements - Findings, Section II.C.

B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2007), for the Sacramento and San Joaquin River Basins* 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, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan.

The beneficial uses of the San Joaquin River from the mouth of the Merced River to Vernalis, downstream of the discharge to Harding Drain from Discharge Point No. 001 and to which the Discharger proposes to discharge from Discharge Point No. 002, are municipal and domestic supply (potential); agricultural irrigation, including stock watering; industrial process water supply; water contact recreation, including canoeing and rafting; other non-contact water recreation; warm freshwater aquatic habitat; warm fish migration habitat; cold fish migration habitat; warm spawning habitat; wildlife habitat.

The Basin Plan at page II-2.00 states that the "...beneficial uses of any specifically identified water body generally apply to its tributary streams." The Discharger currently discharges to Harding Drain from Discharge Point No. 001. The Basin Plan does not specifically identify beneficial uses for Harding Drain, but does identify present and potential uses for the San Joaquin River from the mouth of the Merced

River to Vernalis, to which Harding Drain is tributary. While flow in Harding Drain is tributary to the San Joaquin River, Harding Drain itself is a constructed agricultural drain. The Regional Water Board finds that Harding Drain is not a "stream" as used in the Basin Plan's tributary language, and as a constructed agricultural drain, the Harding Drain is not subject to the tributary provisions of the Basin Plan. Therefore, although Harding Drain is a water of the United States, the Regional Water Board has not designated beneficial uses of Harding Drain in the Basin Plan. The beneficial uses of Harding Drain are therefore identified by other statutory designations and/or the actual existing beneficial uses of the receiving water.

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

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations at title 40, Code of Federal Regulations section 131.2 (40 CFR 131.2) and 40 CFR 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. 40 CFR 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

Therefore, in reviewing what existing beneficial uses apply to Harding Drain, the Regional Water Board has considered the following facts:

a. Municipal and Domestic Supply (MUN)

The Basin Plan defines MUN as "*Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.*" Flows in Harding Drain, can, at times, consist solely of treated effluent and/or agricultural tailwater. These flow and water quality concerns would likely preclude direct MUN use. Flows in Harding Drain may provide, at times, recharge of local groundwater which is used for MUN. However, there is no evidence that Harding Drain downstream of the discharge is currently or was previously used for MUN. It is also unknown whether MUN is attainable for Harding Drain in the foreseeable future.

For surface waters, at page II-2.00, the Basin Plan states, "*Water bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 Sources of Drinking Water Policy, which is, by reference, a part of this Basin Plan.*" The Basin Plan further states, "*In making any exemptions to the beneficial use designation of MUN, the Regional Water Board will apply the exceptions listed in Resolution 88-63...*" Resolution No. 88-63 states that, "*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of:...*2. *Surface waters where: ...b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.*" Harding Drain is a "water of the State" and, therefore, is subject to Resolution No. 88-63.

While Harding Drain appears to meet the exceptions of Resolution No. 88-63, the State Water Board found in Order WQO 2002-0015 (Vacaville) that "*...Resolution 88-63 did not itself designate uses for any waterbody. Rather, the resolution established a state policy that the Regional Boards were required to implement in their basin plans.*" The Regional Water Board implemented Resolution No. 88-63 through a blanket MUN designation for all unidentified waterbodies in the region. Having made the designation, the Regional Water Board is required to go through another rulemaking process to change the designation.

In January 2004, Tetra Tech Inc. under contract with USEPA, submitted a Draft Final Use Attainability Analysis (UAA) for Harding Drain Report. The Draft Final Report summarizes results of a study and assessment conducted by Tetra Tech Inc. regarding the beneficial uses of Harding Drain. Concerning the MUN use, the Draft Final Report notes that "*Effluent and drain data provided by the City suggested that water quality supported MUN however available data were limited to one sampling event in June 2002...*" The Draft Final Report notes that, based upon current information, "*...MUN does not exist in the Harding Drain...*" and that "*The major impediments to attaining MUN use for the Harding Drain are the lack of natural flow that consist of agricultural return water and effluent from the wastewater treatment plant.*" The Draft Final Report concludes that "*Given the other sources available in this area, Harding Drain is not a likely source of drinking water.*"

However, until or unless a Basin Plan amendment is completed to change the MUN designation, the MUN use applies to Harding Drain. MUN is identified in the Basin Plan as a potential beneficial use of the San Joaquin River downstream of the discharge from Discharge Point No. 001. Any Basin Plan amendment process which considers dedesignating the MUN beneficial use of Harding Drain would also have to consider the impacts on this use in the San Joaquin River.

b. Agricultural Supply (AGR)

The Basin Plan defines AGR as “*Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation...stock watering, or support of vegetation for range grazing.*” Harding Drain is a part of the TID canal system, which is a system designed to convey and supply irrigation water to end users and also convey excess agricultural irrigation water and tailwater to the San Joaquin River. Harding Drain receives excess irrigation water as operational spills, in addition to tailwater and wastewater effluent. Irrigators have been observed drawing water from Harding Drain downstream of the discharge point for irrigation uses. Currently, there are no crops for direct human consumption grown in the farmlands surrounding the drain, and it does not appear water from Harding Drain is currently used for irrigation of crops for direct human consumption (unrestricted irrigation). It is unknown whether waters of Harding Drain may have been used at any point since 28 November 1975 for unrestricted irrigation. However, the desire to produce food crops for direct human consumption using waters from Harding Drain may change in the future. As noted in the Draft Final Report, “*Pastures or agricultural fields are located within 10 meters of the stream on both sides for its entire length.*”

A use is considered “existing” under USEPA’s water quality standards regulations if, since 28 November 1975, the use was actually realized, or water quality conditions were suitable to allow the uses to occur. Results of monitoring conducted by the Discharger indicate there have been occasions when the water in Harding Drain was suitable for unrestricted irrigation. Results of monitoring indicate effluent total coliform concentrations are consistently less than 23 MPN/100 mL. Effluent electrical conductivity levels have been recorded as low as 690 $\mu\text{mhos/cm}$ (29 January 2008), and results of upstream monitoring in Harding Drain at RSW-001 indicate an average electrical conductivity levels of 450 $\mu\text{mhos/cm}$ and have been as low as 96 $\mu\text{mhos/cm}$.

Therefore, considering these facts, the Regional Water Board considers AGR, including unrestricted irrigation, as an existing use in Harding Drain. AGR is identified in the Basin Plan as an existing beneficial use of the San Joaquin River downstream of the discharge from Discharge Point No. 001. Any Basin Plan amendment process which considers dedesignating the AGR beneficial use of Harding Drain would also have to consider the impacts on this use in the San Joaquin River.

c. Industrial Service Supply (IND)

The Basin Plan defines IND as “*Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.*” No known industrial supply water intakes or industrial uses are located along the length of Harding Drain from the point of discharge to the San Joaquin River. Whether waters of Harding Drain are suitable for the IND use is unknown since a specific industrial use has not been identified. IND is not

identified as an existing use of the San Joaquin River. No effluent limitations in this Order are associated with protection of this beneficial use. It will be necessary for the Regional Water Board to reconsider the existing use of the Harding Drain as a source of industrial service supply water in future renewals of this Order.

d. Industrial Process Supply (PRO)

The Basin Plan defines PRO as *“Uses of water for industrial activities that depend primarily on water quality.”* PRO is a beneficial use of the San Joaquin River. However, as noted for IND, no known industrial supply water intakes or industrial uses are located along the length of Harding Drain from the point of discharge to the San Joaquin River. Whether waters of Harding Drain are suitable for the PRO use is unknown since a specific industrial use has not been identified. No effluent limitations in this Order are associated with protection of this beneficial use. It will be necessary for the Regional Water Board to reconsider the existing use of the Harding Drain as a source of industrial process supply water in future renewals of this Order.

e. Water Contact Recreation (REC-1) and Non-Contact Water Recreation (REC-2)

The Basin Plan defines REC-1 as *“Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.”* REC-2 is defined as *“Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water.”* There is ready public access to Harding Drain. Exclusion of the public is unrealistic, and potential for contact recreational activities exists along Harding Drain as it flows to the San Joaquin River, and these recreational uses are likely to increase as the population in the area grows. Furthermore, Regional Water Board staff has conducted inspections along the entire length of Harding Drain from the point of discharge to the confluence of the San Joaquin River. During these inspections, recreational users were observed wading in and fishing along Harding Drain. In addition, section 101(a)(2) of the CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved, whenever attainable. Federal water quality standards regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. Whether these recreational uses of Harding Drain may be considered seasonal is unknown. However, removal or establishment of a sub-category of these uses would require completion of a UAA and Basin Plan amendment.

Because of the public access, observations of Regional Water Board staff, and fishable/swimmable presumption of the federal regulations, this Order considers REC-1 and REC-2 as existing beneficial uses of Harding Drain.

f. Groundwater Recharge (GWR)

The Basin Plan defines GWR as *“Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.”* In areas and at times of the year where groundwater elevations are below the bottom of Harding Drain, water from the drain will percolate to groundwater. Since the drain is at times low in flow, it is reasonable to assume that the drain water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of groundwater recharge to the domestic, municipal, and irrigation water supply used by farmers in the vicinity of the drain. This Order considers GWR as an existing use of Harding Drain.

g. Freshwater Replenishment (FRSH)

The Basin Plan defines FRSH as *“Uses of water for natural or artificial maintenance of surface water quantity or quality.”* When water is present in Harding Drain, there is hydraulic continuity between Harding Drain and the San Joaquin River. During periods of hydraulic continuity, Harding Drain adds to the water quantity and may impact the quality of water flowing downstream in the San Joaquin River. Therefore, this Order considers FRSH as an existing use of Harding Drain.

h. Warm Freshwater Habitat (WARM)

The Basin Plan defines WARM as *“Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.”* During site visits along Harding Drain, Regional Water Board staff observed fishing downstream of the discharge. Aquatic life suited to the WARM use was also observed in Harding Drain including crayfish, minnows, and frogs. These observations indicate that waters of Harding Drain are suitable for the WARM use. As noted previously, section 101(a)(2) of the CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved, whenever attainable. Federal water quality standards regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. Furthermore, the Draft Final Report found that *“The data collection efforts found direct evidence that Harding Drain supported warm water species and wildlife habitat...”* and *“...WARM aquatic life use does exist given the definition of the use in the Basin Plan.”* Therefore, this Order considers WARM as an existing use of Harding Drain.

i. Cold Freshwater Habitat (COLD)

The Basin Plan defines COLD as *“Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.”* As noted above,

section 101(a)(2) of the CWA requires that water quality for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved, whenever attainable. Federal water quality standards regulations implementing the CWA create a rebuttable presumption that all waters should be designated as fishable/swimmable. In requiring a State to consider protection and propagation of fish, shellfish, and wildlife, the federal regulations do not distinguish between WARM and COLD uses. While anadromous associated with cold freshwater habitat exist in the San Joaquin River, the flap gates at the confluence of Harding Drain and the San Joaquin River likely serve as barriers to movement of cold water species which might transition between the San Joaquin River and Harding Drain. Whether COLD exists or may be considered a reasonable use of Harding Drain is unknown. Results of effluent and receiving water monitoring conducted from January 2002 through October 2003 indicate average monthly dissolved oxygen concentrations have exceeded 7.0 mg/L for the majority of months monitored during this period.

In the Draft Final Report, it was found that "Given all of the factors evaluated in this UAA, COLD use does not exist in Harding Drain due to several factors including unsuitable temperature regime, dominance of fine sediment particle size, low dissolved oxygen minima, lack of riffle areas, and poor instream cover. Harding Drain clearly does not meet the minimum suitable habitat thresholds for temperature and sediment size for most if not all salmonid life stages and cold water macroinvertebrates. Furthermore, the lack of suitable trout spawning and rearing areas throughout this stream would further constrain use of this stream by cold water fishes such as trout."

40 CFR 131.10(c) provides that "States may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries."

However, removal or establishment of a sub-category of the fishable beneficial use like COLD would require completion of a UAA and Basin Plan amendment. Therefore, until or unless a Basin Plan amendment is completed to change the COLD designation, the COLD use applies to Harding Drain.

j. Migration of Aquatic Organisms (MIGR)

The Basin Plan defines MIGR as "Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish." MIGR, for both warm and cold habitats, is identified as an existing beneficial use of the San Joaquin River. The observation of crayfish, minnows, and frogs in Harding Drain during field inspections suggests that the drain supports at a minimum a warm water habitat necessary for temporary activities by various aquatic organisms. As noted for COLD, the flap gates at the confluence of Harding Drain and the San Joaquin River likely serve as barriers to movement of anadromous fish species which might transition between the San Joaquin River and Harding Drain. Whether the drain is or has been suitable to support habitats necessary to the migration of cold water aquatic organisms is unknown. However, removal or establishment of a sub-category of the MIGR

use would require completion of a UAA and Basin Plan amendment. Therefore, this Order considers both warm and cold MIGR as existing uses of Harding Drain.

k. Spawning, Reproduction, and/or Early Development (SPWN)

The Basin Plan defines SPWN as "*Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.*" SPWN is identified as an existing beneficial use of the San Joaquin River. The observation of minnows in Harding Drain during field inspections suggests that the drain supports at minimum a warm water habitat necessary for reproduction and early development of fish. As noted for COLD, the flap gates at the confluence of Harding Drain and the San Joaquin River likely serve as barriers to movement of anadromous fish species which might transition between the San Joaquin River and Harding Drain. The Draft Final Report found that "... SPWN does not exist for most relevant migratory species because of a number of factors including water quality (high temperatures and low minimum dissolved oxygen), habitat limitations (substrate size, percentage of pools, and substrate cover), and channel modification (extensive riparian alterations and constructed drain). In addition, the presence of physical barriers to fish migration... further limit Harding Drain as a viable spawning stream for anadromous and catadromous species." However, removal or establishment of a sub-category of the SPWN use would require completion of a UAA and Basin Plan amendment. Therefore, this Order considers both warm and cold SPWN as existing uses of Harding Drain.

l. Wildlife Habitat (WILD)

The Basin Plan defines WILD as "*Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.*" WILD is identified as an existing beneficial use of the San Joaquin River. Based upon observations during field inspections, Harding Drain does provide riparian habitat at locations downstream of the discharge including areas of aquatic vegetation and wildlife habitat. Therefore, this Order considers WILD as an existing use of Harding Drain.

The Vacaville Order provided direction on implementing Basin Plan beneficial use designations and resulting limitations to protect these uses. Some of the issues addressed by the Vacaville Order may be relevant to the Discharger's situation. Specifically, there is information in the administrative record that indicates certain beneficial uses of Harding Drain, like MUN and COLD, may not exist and may not be attained in the future. Additionally, there is information that other beneficial uses, like AGR and REC-1, may exist seasonally. The appropriate mechanism for adding, removing, or establishing a sub-category of use is through a completed UAA and subsequent Basin Plan amendment process. A UAA is a structured scientific assessment of the factors affecting the attainment of the use which may include

physical, chemical, biological, and economic factors as described in 40 CFR 131.10(g). Because at times Harding Drain acts as a conduit for direct discharge to the San Joaquin River when little or no dilution of the treated effluent is available in the drain, the beneficial uses of the San Joaquin River must also be considered and protected. Any UAA or Basin Plan amendment process which considers changing or dedesignating beneficial uses of Harding Drain would also have to consider the impacts of this action on this use in the San Joaquin River. The Discharger bears the responsibility for providing the information to support this evaluation.

This Order contains effluent limitations requiring a tertiary level of treatment, or equivalent, which is necessary to protect the beneficial uses of the receiving water. The Regional Water Board has considered the factors listed in CWC section 13241 in establishing these requirements, as discussed in more detail in the Fact Sheet, Attachment F, IV.C.3.v.

2. **Bay-Delta Plan.** The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The Bay-Delta Plan attempts to create a management plan that is acceptable to the stakeholders while at the same time is protective of beneficial uses of the San Joaquin River. The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

3. **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 water quality be maintained unless degradation is justified based on specific findings. The Regional 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 (Attachment F, Section IV.D.4.) the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16.
4. **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 that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the anti-backsliding requirements is discussed in Section IV.D.3.

5. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a), California Water Code, requires that *"the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective"*.

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

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

6. **Storm Water Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the Federal Regulations. The Discharger does not discharge storm water associated with an industrial activity off-site or into waters of the United States. The Discharger captures all storm water that falls within the boundary of the Facility and directs it to the in-plant drain. Therefore, the Discharger is not required to obtain coverage under the State Water Board's Industrial Stormwater General Permit (Order No. 97-03-DWQ).
7. **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.

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

1. Under Section 303(d) of the 1972 Clean Water Act, 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 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The 2006 CWA section 303(d) listing for Harding Drain includes chlorpyrifos and unknown toxicity due to agriculture. The 2006 303(d) listing for the San Joaquin River from the Merced River to the Tuolumne River includes boron, DDT, electrical conductivity, Group A Pesticides, mercury, and unknown toxicity. Furthermore, the southern portion of the Sacramento – San Joaquin Delta downstream of the discharge is listed for chlorpyrifos, DDT, diazinon, electrical conductivity, exotic species, Group A pesticides, mercury, and unknown toxicity.
2. **Total Maximum Daily Loads (TMDL).** USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. TMDLs and Basin Plan amendments have been developed and adopted for diazinon and chlorpyrifos runoff and salt and boron in the lower San Joaquin River.

E. Other Plans, Polices and Regulations

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

2. The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this Order are consistent with the Policy.

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 Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The Federal 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 discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board’s Basin Plan, IV-21, contains an implementation policy (“Policy for Application of Water Quality Objectives”) that specifies that the Regional 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 Regional 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 Regional Water Board’s “Policy for Application of Water Quality Objectives”)(40 CFR 122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: “*All waters shall be maintained free of toxic substances in concentrations that produce*

detrimental physiological responses in human, plant, animal, or aquatic life" (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. 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 Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR 122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
2. The Discharger has requested the authorization for an emergency discharge to Harding Drain subsequent to the commencement of discharges to the San Joaquin River in the event of a power failure at the proposed pipeline pump station. In the event of a power failure at the pump station, the Discharger has the ability to cease the discharge of wastewater into the existing pipelines that will flow to the pump station. Consequently, the only flow that would need to be pumped is the volume of wastewater in the two existing pipelines at the time of the power outage. A weir is utilized to divert flows under normal conditions into the proposed pump station. In the event of a power outage at the pump station, incoming flow would overflow the weir into the existing pipelines and flow into Harding Drain until the liquid level in the pipeline reaches the elevation of the weir. At the current permitted flow of 20 MGD, approximately 1.68 million gallons would be discharged in the event of a power failure at the pump station.

An alternative to the emergency bypass is use of an emergency generator to supply power to the pump stations in the event of a power failure. However, the purchase, permitting, and operation of an emergency generator would be very costly to the Discharger. Wastewater discharged as a result of a power failure at the pump station will be required to meet the effluent limitations contained in section IV.A.1 of the Order for discharges to Harding Drain at Discharge Point No. 001, which are protective of water quality in Harding Drain. Power failures are likely to occur infrequently and the

equalization of flow in the pipes will occur within minutes. Therefore, these infrequent and short-term emergency discharges are unlikely to negatively impact beneficial uses. Therefore, upon commencement of discharge to the San Joaquin River from Discharge Point No. 002, the discharge of wastewater to Harding Drain from Discharge Point No. 001 is prohibited except in the event of a power failure at the pipeline pump station.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal Regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD₅ and TSS are based on the technical capability of the tertiary process. BOD₅ is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD₅ and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD₅ and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133 for weekly and monthly average BOD₅ and TSS limitations, the application of tertiary treatment processes results in the ability to achieve lower levels for BOD₅ and TSS than the secondary standards currently prescribed; therefore, consistent with Order No. 5-01-122, this Order includes 30-day average BOD₅ and TSS limitations of 10 mg/L, which are technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD₅ and TSS is included in the Order to ensure that the treatment works are not organically

overloaded and operate in accordance with design capabilities. See Table F-4 for final technology-based effluent limitations required by this Order. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD₅ and TSS must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month.

- b. **pH.** Federal Regulations, 40 CFR Part 133, also establish technology-based effluent limitations for pH. The secondary treatment standards require the pH of the effluent to be no lower than 6.0 and no greater than 9.0 standard units.
- c. **Flow.** The Facility is designed to provide a tertiary level of treatment for up to a design flow of 20 MGD. Therefore, this Order contains an average dry weather flow effluent limit of 20 MGD.

**Summary of Technology-based Effluent Limitations
Discharge Point Nos. 001 and 002**

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/l	10	15	20	--	--
	lbs/day ¹	1,668	2,502	3,336	--	--
	% Removal	85	--	--	--	--
Total Suspended Solids	mg/l	10	15	20	--	--
	lbs/day ¹	1,668	2,502	3,336	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0
Flow	MGD	20 ²	--	--	--	--

¹ Based on a design flow of 20 MGD.

² Average dry weather flow.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. 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

- a. **Receiving Water.** Currently, treated municipal and industrial wastewater is discharged from Discharge Point No. 001 to Harding Drain, which is tributary to the San Joaquin River approximately 5 miles downstream of the discharge point. Harding Drain is a man-made agricultural drainage facility designed and maintained by TID for drainage purposes. In addition to the effluent from the Facility, Harding Drain carries flows from TID operational spill water, tailwater from row and orchard crops, municipal storm water, and other runoff.

The Discharger is planning to construct a dedicated pipeline to transport and discharge treated wastewater from the Facility directly to the San Joaquin River from Discharge Point No. 002. Discharge Point No. 002 is located approximately 500 feet upstream in the San Joaquin River from the confluence of Harding Drain and the San Joaquin River.

The beneficial uses of Harding Drain and the San Joaquin River are described above in Section III.C.1 of this Fact Sheet.

b. **Hardness-Dependent CTR Metals Criteria**

The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP¹, the CTR² and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4), 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. In some cases, the hardness of effluent discharges changes the hardness of the

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

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

ambient receiving water. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Regional 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.

- i. **Reasonable Potential Analysis (RPA).** The SIP in Section 1.3 states, "The RWQCB shall... determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective." Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the Maximum Effluent Concentration (MEC) and Maximum Ambient Background Concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.
 - 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 criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined in subsection ii. 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.
- a) **Discharge Point No. 001 (Harding Drain).** Upstream receiving water hardness data for Harding Drain is not available. The effluent hardness