ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state regulations.

I. GENERAL MONITORING PROVISIONS

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

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

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

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	PRD	Production monitoring of tons of raw product delivered to processing
--	INF-001	Influent monitoring shall be collected upstream of the discharge to the surface impoundments
001	EFF-001	Effluent samples shall be collected downstream from the last connection through which wastes can be added and upstream of the junction with the effluent from the City of Corning Wastewater Treatment Plant
--	RSW-001U	Receiving water monitoring immediately upstream from the point of discharge
--	RSW-001D	Receiving water monitoring 50 feet downstream from the point of discharge
--	RSW-002D	Receiving water monitoring one-quarter mile downstream from the point of discharge

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent liquid waste upstream of the discharge to the surface impoundments at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	meter	Continuous	[2]
pH	standard units	grab	1/week	[2]
Electrical Conductivity @ 25°C	umhos/cm	24-hr Composite[1]	1/week	[2]
Total Dissolved Solids	mg/L	24-hr Composite[1]	1/week	[2]
BOD 5-day 20°C	mg/L	24-hr Composite[1]	1/month	[2]
Total Suspended Solids	mg/L	24-hr Composite[1]	1/month	[2]
Chemical Oxygen Demand	mg/L	24-hr Composite[1]	1/month	[2]
Iron	ug/L	24-hr Composite[1]	1/month	[2]
Sulfate	mg/L	24-hr Composite[1]	1/quarter	[2]
Chloride	mg/L	24-hr Composite[1]	1/quarter	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Sodium	mg/L	24-hr Composite[1]	1/quarter	[2]

[1]24-hour flow proportional composite

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

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor effluent downstream from the last connection through which wastes can be added and upstream of the junction with the effluent from the City of Corning Wastewater Treatment Plant at EFF-001 as follows. Samples collected from the outlet structure of the ponds will be considered adequately composited. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level. If the discharge to surface waters is interrupted for greater than 7 days, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all the constituents listed below (except for the annual samples), after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	Meter	Continuous	[6]
Total Residual Chlorine[1]	mg/L	Meter	Daily when chlorine is used	[6]
BOD 5-day 20°C	mg/L	Grab	1/week	[6]
Total Suspended Solids	mg/L	Grab	1/week	[6]
Settleable Solids	mL/L	Grab	1/week	[6]
Ammonia (as N) [2, 3]	mg/L	Grab	1/week	[6]
Electrical Conductivity @ 25°C	umhos/cm	Grab	1/week	[6]
Total Dissolved Solids	mg/L	Grab	1/week	[6]
pH	Standard units	Grab	1/week	[6]
Temperature	°F	Grab	1/week	[6]
Chloride	mg/L	Grab	1/week	[6]
Color	color units	Grab	1/month	[6]
Iron	ug/L	Grab	1/month	[6]
Standard Minerals[4]	mg/L	Grab	1/year	[6]
Priority Pollutants[5]	--	Grab	1/year	[6]

[1] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

[2] Concurrent with biotoxicity monitoring

[3] Report as total.

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

[5] Excluding asbestos and dioxin and concurrent with priority pollutant receiving water monitoring.

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

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

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

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The Discharger may use the discharge to the outfall line (monitoring location EFF-001) or the combined Bell-Carter and City's facility discharge to determine compliance. The combined sample shall be taken at the outfall manhole at Kopta Road and Gardiner Ferry Rd.

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

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

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

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

1. *Monitoring Frequency* – the Discharger shall perform annual three species chronic toxicity testing.

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

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

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

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

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

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

7. *Dilutions* – The chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

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

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

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

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)							Controls	
	100	50	25	12.5	6.25	3.125	1.562	Receiving Water	Laboratory Water
% Effluent	100	50	25	12.5	6.25	3.125	1.562	0	0
% Receiving Water	0	50	75	87.5	93.75	96.875	98.875	100	0
% Laboratory Water	0	0	0	0	0	0	0	0	100

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

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

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

   a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.

   b. The statistical methods used to calculate endpoints;

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

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

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

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

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

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location RSW-001U, RSW-001D, and RSW-002D

1. The Discharger shall monitor the Sacramento River at RSW-001U, RSW-001D, and RSW-002D as follows:

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month	[2]
Total Dissolved Solids	mg/L	Grab	1/month	[2]
Chlorides	mg/L	Grab	1/month	[2]
Dissolved Oxygen	mg/L	Grab	1/month	[2]
pH	Standard Units	Grab	1/month	[2]
Temperature	°F (°C)	Grab	1/month	[2]
Turbidity	NTU	Grab	1/month	[2]
Priority Pollutants[1]	--	Grab	1/year	[2]

[1]For RSW-001U only. Excluding asbestos and dioxin and concurrent with effluent priority pollutant monitoring.

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

IX. OTHER MONITORING REQUIREMENTS

A. Production

1. **Monitoring Location PRD**

Production monitoring shall be reported monthly as tons of raw product delivered to processing either as fresh fruit or from storage. In addition to the production for the

current month, the Discharger shall report the monthly production for the previous 11 months. The total yearly production for the current 12 month period shall be reported.

Table E-6. Production Monitoring Requirements

Month	Units	Sample Type	Minimum Sampling Frequency
Mo. 1	tons raw product	calculate	1/month
…..	tons raw product	calculate	1/month
Mo. 12	tons raw product	calculate	1/month
12 Mo. Total	tons raw product	calculate	1/month

B. Rainfall and Storm Water Monitoring

1. Daily rainfall shall be reported in inches. The monthly amount of storm water generated and discharged to the treatment ponds shall be calculated and reported.

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.

1. 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).

2. **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.

3. 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.

4. **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 Part 136.

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

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

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

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

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

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

5. **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
   415 Knollcrest Drive, Suite 100
   Redding, CA 96002

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

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	**Permit effective date**	**All**	**Submit with monthly SMR**
Daily	**Permit effective date**	**(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.**	**Submit with monthly SMR**
Weekly	**Sunday following permit effective date or on permit effective date if on a Sunday**	**Sunday through Saturday**	**Submit with monthly SMR**
Monthly	**First day of calendar month following permit effective date or on permit effective date if that date is first day of the month**	**1st day of calendar month through last day of calendar month**	**1st day of the second month following the monitoring period**
Quarterly	**Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date**	**January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31**	**1st day of the second month following the monitoring period**
Annually	**January 1 following (or on) permit effective date**	**January 1 through December 31**	**1st day of the second month following the monitoring period**

C. Discharge Monitoring Reports (DMRs) – Not Applicable

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-8. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Treatment Feasibility Study	Study submitted within two (2) years after approval of work plan
Salinity/EC Site-Specific Studies	Study submitted within three (3) years after approval of work plan
Mixing Zone/Dilution Study	Study submitted within two (2) years after approval of work plan

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	**5A520303002**
Discharger	Bell-Carter Olive Company, Inc. City of Corning
Name of Facility	Bell-Carter Industrial Wastewater Treatment Plant
Facility Address	Gardiner Ferry Road
	Corning, CA 96021
	Tehama County
Facility Contact, Title and Phone	Phil Quigley, Wastewater Manager, (530) 824-7108
Authorized Person to Sign and Submit Reports	Emmett Lazaro, Global Supply Chain Director, (530) 824-7116
Mailing Address	P.O. Box 959 Corning, CA 96021
Billing Address	SAME
Type of Facility	Industrial (SIC code 2033)
Major or Minor Facility	Minor
Threat to Water Quality	1
Complexity	A
Pretreatment Program	N
Reclamation Requirements	NA
Facility Permitted Flow	1.4 mgd (million gallons per day) daily maximum, 0.95 mgd monthly average, 0.75 mgd annual average
Facility Design Flow	0.75 mgd (annual average)
Watershed	Sacramento River Hydrological Unit, Red Bluff Hydrological Sub Area 504.20
Receiving Water	Sacramento River
Receiving Water Type	Inland Surface Water

A. Bell-Carter Olive Company, Inc. is the owner/operator of the Bell-Carter Industrial Wastewater Treatment Plant (hereinafter Facility), an industrial wastewater treatment facility. The City of Corning owns the property at Gardiner Ferry Road on which the Facility is located. Together Bell-Carter Olive Company, Inc. and the City of Corning are hereinafter referred to as Discharger.

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

B. The Facility discharges wastewater to the Sacramento River, a water of the United States, and is currently regulated by Order No. 5-00-113 and Special Order No. R5-2004-0074 which were adopted on June 16, 2000 and June 4, 2004 respectively. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements and NPDES permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on December 3, 2004.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system at the Facility consists of an influent pump station, influent metering and sampling equipment, a two stage extended aeration lagoon system (Class II Surface Impoundments), followed by an ultrafiltration membrane solids separation process prior to being discharged to the Sacramento River. Solids generated in the aerobic treatment process and rejected by the membrane flow by gravity from the membrane process tanks are settled in subsequent holding ponds. On a regular basis, the solids are removed utilizing a floating hydraulic dredge for centrifuge dewatering. Dewatered solids are then trucked to a suitable landfill.

The facility was originally conceived as a pretreatment facility, but process improvements, including the ultrafiltration separation (Zenon) process, have allowed the conversion to a direct discharge to surface waters, capable of meeting stringent surface water effluent limits. The City of Corning owns the outfall structure that both Bell Carter Olive Company, Inc. and the City of Corning Wastewater Treatment Plant discharge from. During periods of high rainfall or river flows, the City of Corning restricts the amount of flow that Bell Carter Olive Company, Inc. is allowed to discharge. The Class II Surface Impoundments are regulated by Order No. 5-00-114.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 28, T24N, R2W, MDB&M, as shown in Attachment B (Figure B-1), a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point 001 to the Sacramento River, a water of the United States at a point Latitude 39°, 54', 24" N and Longitude -122°, 05',13" W.

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

Effluent limitations contained in the existing Order for discharges from D-001 (Monitoring Location EFF-001) and representative monitoring data from the term of the previous Order are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		
		Average Monthly	Average Annual	Maximum Daily
Flow	mgd	0.95	0.75	1.4
BOD 5-day @ 20°C	mg/L	100	--	150
	lbs/day	792[1]	Prod. Based[2]	1,168[3]
Total Suspended Solids	mg/L	100	--	200
	lbs/day	792[1]	Prod. Based[2]	1,168[3]
Chlorine Residual	mg/L	--	--	0.02
Settleable Solids	mL/L	0.1	--	0.2
Total Dissolved Solids	lbs/day	--	59,800[4]	79,800[5]
Chlorides	lbs/day	--	20,900[4]	27,900[5]

[1]Based on flow rate of 0.95 mgd.
[2]Based on 2.39 lbs BOD and 4.44 lbs of TSS per 1000 lbs of apportioned production.
[3]Based on flow rate of 1.4 mgd.
[4]Based on flow rate of 0.75 mgd.
[5]Based on flow rate of 1.0 mgd.

a. The discharge shall not have a pH less than 6.0 or greater than 9.5.

b. Survival of aquatic organisms in 96-hour bioassays of undiluted waste representing the combined effluent from the City of Corning's WWTP and Bell-Carter's industrial discharge to the outfall line shall be no less than:

Minimum for any one bioassay……70%
Median for any three or more consecutive bioassays……90%

D. Compliance Summary

The facility has generally complied with the effluent limitations and conditions found in the current Order. Violations consisted of BOD and toxicity violations.

E. Planned Changes

At Plant 1 in Corning, Bell-Carter Olive Company, Inc. discharges retort and continuous cooker wastewater from the can cleaning and sterilization operation to Jewett Creek, after temperature reduction through a cooling tower (permitted under separate Order No. R5-2007-0055). Jewett Creek is an ephemeral stream and a tributary to the

Sacramento River. Bell-Carter Olive Company, Inc. is researching the feasibility of eliminating this discharge to Jewett Creek by changing this once through process to the reuse of cooled retort water in a closed loop system. The proposal is for warm retort water leaving the atmospheric cooler to be passed through a closed loop evaporative cooling system (after chlorination). An option being considered is that salt accumulation within this new process would be managed by directing a blow down wastestream to Bell Carter's Class II Surface Impoundments. This water reuse scheme, if successful, would allow for the elimination of the discharge to Jewett Creek, but would result in a new source of salinity to the surface impoundments. Salinity concentrations in the surface impoundments would increase, but there would be no net increase in the salt load to the Sacramento River system.

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 August 2006), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, 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 Sacramento River downstream of the discharge are municipal and domestic supply, agricultural, industrial service supply, hydropower, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, cold spawning habitat, wildlife habitat, and navigation.

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

   The federal CWA section 101(a)(2), states: "*it is the national goal that wherever*

attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983." Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

2. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 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 section 131.12 and State Water Board Resolution 68-16.

3. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 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.

4. ***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) (EPCRKA) 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 Emergency Planning and Community Right to Know Act (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.

5. ***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. All storm water is contained onsite; therefore an industrial storm water permit is not applicable.

6. ***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 July 25, 2003 USEPA gave final approval to California's 2002 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 listing for the Sacramento River segment includes: unknown toxicity.

2. **Total Maximum Daily Loads.** The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination.

E. Other Plans, Polices and Regulations

1. 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 Section 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 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, page IV-17.00, 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.*

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable

within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

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

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

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

2. Applicable Technology-Based Effluent Limitations

a. **5-Day Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS) and pH**. USEPA's Effluent Limitations Guidelines and Standards for the Canned and Preserved Fruits and Vegetables Processing Point Source Category in 40 CFR Part 407 provides the basis for the technology-based effluent limitations for this Discharger. 40 CFR Part 407 Subpart F applies to the Canned and Preserved Fruits and Vegetables Processing Point Source Category. BPT and BCT limitations for the olives commodity apply to discharges of BOD_5, TSS, and pH. The limitations are as follows:

Effluent Constituent	Annual Average Limit (lbs/1000 lbs raw material)	30-day Average Limit (lbs/1000 lbs raw material)	Daily Maximum Limit (lbs/1000 lbs raw material)
BOD_5	2.39	3.34	5.44
TSS	4.44	6.92	9.79
pH - At all times within the range 6.0 to 9.5.			

40 CFR § 407.62(a) states … "Fruit processing plants employing long term waste stabilization, where all or a portion of the process waste water discharge is stored for the entire processing season and released at a controlled rate with State approval, shall meet only the annual average BOD_5 limitations." Similarly, 40 CFR § 407.62(b) states …"Fruit processing plants employing long term waste stabilization, where all or a portion of the process waste water discharge is stored for the entire processing season and released at a controlled rate with state approval, shall meet only the annual average TSS limitations." Wastewater generated by the Discharger is

treated in a long-term waste stabilization process with an approximate 110 day retention time. The Regional Water Board has interpreted the language found at 40 CFR § 407.62(a) and (b) to apply to the Discharger. Therefore, annual average BOD_5 and TSS production-based effluent limitations are contained in this permit based on the requirements found in 40 CFR Part 407. Monthly average and daily maximum effluent limitations for BOD_5 and TSS are based on the Best Professional Judgment of the Regional Water Board. Effluent limitations for pH in this Order are based on the requirements found in 40 CFR § 407.62(c).

Summary of Technology-based Effluent Limitations
Discharge Point 001

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

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	0.95	1.4	--	--
BOD 5-day @ 20°C	mg/L	100	150	--	--
	lbs/day	792	1,168	--	--
Total Suspended Solids	mg/L	100	200	--	--
	lbs/day	792	1,168	--	--
Total Dissolved Solids	lbs/day	--	79,800	--	--
Chlorides	lbs/day	--	27,900	--	--
pH	standard units	--	--	6.0	9.5

b. **Annual Average BOD 5-day @ 20°C.** The annual average BOD mass limitation is production based. The limitation is 2.39 lbs BOD per 1,000 lbs raw material.

c. **Annual Average Total Suspended Solids.** The annual average TSS mass limitation is production based. The limitation is 4.44 lbs TSS per 1,000 lbs raw material.

d. **Average Annual Discharge Flow.** The Average Annual Discharge Flow shall not exceed 0.75 mgd.

e. **Annual Average Total Dissolved Solids.** The annual average TDS mass shall not exceed 59,800 lbs/day based on a flow rate of 0.75 mgd.

f. **Annual Average Chlorides.** The annual average chlorides mass shall not exceed 20,900 lbs/day based on a flow rate of 0.75 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in section 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.** The discharge is to the Sacramento River near the City of Corning. The beneficial uses of the Sacramento River downstream of the discharge are municipal and domestic supply, agricultural, industrial service supply, hydropower, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, cold spawning habitat, wildlife habitat, and navigation.

b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states the following:

"Application of metals criteria. (i) *For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations*." [emphasis added]

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: "*We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations*."

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. For purposes of establishing water quality-based effluent limitations, a reported receiving water hardness value of 46 mg/L as $CaCO_3$ was used. An effluent hardness value of 200 mg/L as $CaCO_3$ was used for determining reasonable potential for copper, chromium III, nickel, zinc, and chronic cadmium.

c. **Assimilative Capacity/Mixing Zone.** The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as for mixing zones, to implement state water quality standards (40 CFR section 122.44 and section 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (State Implementation Policy or SIP), the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD), and the Basin Plan. For NPDES permits in California, the SIP policy supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies.

The allowance of mixing zones by the Regional Water Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the [TSD]. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge*."

Section 1.4.2 of the SIP states, in part, "…*with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by the Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that is regulated through an NPDES permit issued by the Regional Board.*"

Section 1.4.2.1 of the SIP defines a dilution credit as, "*a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent*

limitations. Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some or no priority pollutants in a discharge."

Regarding mixing zones, the SIP states, "*A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:*

A: A mixing zone shall not:

(1) compromise the integrity of the entire water body;

(2) cause acutely toxic conditions to aquatic life passing through the mixing zone;

(3) restrict the passage of aquatic life;

(4) adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;

(5) produce undesirable or nuisance aquatic life;

(6) result in floating debris, oil, or scum;

(7) produce objectionable color, odor, taste, or turbidity;

(8) cause objectionable bottom deposits;

(9) cause nuisance;

(10) dominate the receiving water body or overlap a mixing zone from different outfalls; or

(11) *be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy*."

The mixing zone is thus an administrative construct defined as an area around the outfall that may exceed water quality objectives, but is otherwise protective of the beneficial uses. Dilution is defined as the amount of mixing that has occurred at the edge of this mixing zone under critical conditions, thus protecting the beneficial uses at the concentration and for the duration and frequency required.

The flow rates of the Sacramento River in the vicinity of the discharge range from approximately 6,400 cubic feet per second (cfs) to over 125,000 cfs. The average flow of the Sacramento River past the point of discharge is approximately 15,000 cfs. The acute aquatic life criteria was evaluated by using the critical low flow based on the lowest one-day receiving water flow (2,947 cfs) with a statistical frequency of once every 10 years (1Q10) compared against the maximum daily flow during the discharge period. The chronic aquatic life criteria was evaluated by using the lowest seven consecutive day receiving water flows (3,027 cfs) with a statistical frequency of once every 10 years (7Q10) compared

against the four-day average of daily maximum effluent discharge flows during the discharge period. The human health criteria was evaluated by using the harmonic mean flow (10,328 cfs) compared against the long-term arithmetic mean flow during period of discharge.

Section 1.4.2.1 of the SIP states "the amount of receiving water available to dilute the effluent shall be determined by calculating the *dilution ratio (i.e., the critical receiving water flow divided by the effluent flow) using the appropriate flows….." Utilizing the 1Q10 flow of 2,947 cfs and a maximum daily effluent flow of 2.2 cfs, a dilution ratio of 1,300:1 is allowable by the SIP. However, the Regional Water Board is also instructed to utilize as small a mixing zone as practicable. For the purposes of this Order, based on receiving water flow and data, the Regional Water Board has determined that there is assimilative capacity in the Sacramento River for ammonia, a non-conservative pollutant. A dilution ratio of 1,300:1 has not been used in the development of the effluent limitations for ammonia. In order to utilize as small a zone as practicable, the Regional Water Board has used a dilution credit of 50:1 in the development of the effluent limitations for ammonia. The dilution credit of 50:1 is less than 4 percent of the allowable dilution ratio and ensures the beneficial uses of the receiving water are maintained. The Discharger will be required to perform a mixing zone/dilution study to confirm that a dilution of 50:1 or greater exists at all times and/or to determine if a larger dilution credit is appropriate to calculate ammonia effluent limitations. This permit may be reopened to incorporate modified ammonia limitations.

3. Determining the Need for WQBELs

a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) With regards to the narrative chemical constituents objective, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia. Water quality-based effluent limitations (WQBELs) for this constituent are included in this Order. WQBELs for residual chlorine, settleable solids, total dissolved solids, and chlorides are being carried forward from the existing Order. A summary of the reasonable potential analysis (RPA) is provided, and a detailed discussion of the RPA for each constituent is provided below.

c. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency."* Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

d. WQBELs were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.

e. **Ammonia.** Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. Applying 40 CFR section122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

   USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends: (a) acute (1-hour average; criteria maximum concentration) standards based on pH, and (b) chronic (30-day average, criteria continuous concentration) standards based on pH and temperature. It also recommends a maximum four-day average concentration of 2.5 times the criteria continuous concentration. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found

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

that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the Sacramento River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Sacramento River is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used. USEPA's recommended criteria are show below:

$$CCC_{30-day} = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times MIN\left(2.85, 1.45 \cdot 10^{0.028(25-T)}\right), \text{ and}$$

$$CMC = \left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}} \right),$$

where *T* is in degrees Celsius

The maximum permitted effluent pH is 9.5 and the permitted pH in the receiving stream ranges from 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 9.5 was used to derive the acute criterion. The resulting acute criterion is 0.470 mg/L.

Since the flow of the receiving water is much greater than that of the effluent, the maximum observed 30-day rolling average temperature and the maximum observed pH of the Sacramento River were used to calculate the 30-day chronic criteria. The maximum observed 30-day average effluent temperature was 62°F (16.6°C). The maximum observed downstream receiving water pH value was 8.16. Using a pH value of 8.16 and the worst-case temperature value of 62°F (16.6°C) on a 30-day basis, the resulting chronic 30-day CCC is 1.67 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.67 mg/L (as N), the 4-day average concentration that should not be exceeded is 4.18 mg/L (as N).

The Regional Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day average, and 30-day chronic criteria is then selected for deriving the average monthly effluent limitation (AMEL) and the maximum daily effluent limitation (MDEL). The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

The MEC for ammonia was 16.8 mg/L. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

A dilution credit of 50 was utilized in the development of the final effluent limitations for this Facility. This Order contains a final AMEL and MDEL for ammonia of 8.2 mg/L and 24.0 mg/L, respectively, based on USEPA's *National Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life* (see Attachment F, Table F-5 for WQBEL calculations).

The Discharger can immediately comply with these new effluent limitations for ammonia.

f. **Bis(2-ethylhexyl) Phthalate.** Bis(2-ethylhexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission, USEPA, and the Food and Drug Administration, these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and noninjurious for the lifetime of their use. The State MCL for bis(2-ethylhexyl) phthalate is 4 ug/L and the USEPA MCL is 6 ug/L. The NTR criterion for Human health protection for consumption of water and aquatic organisms is 1.8 ug/L and for consumption of aquatic organisms only is 5.9 ug/L.

The MEC for bis(2-ethylhexyl) phthalate was 8 ug/L, based on 4 samples collected, while the maximum observed upstream receiving water bis(2-ethylhexyl) phthalate concentration was 4 ug/L. In addition, the Discharger also had quantifiable results for diethyl phthalate and di-n-butyl phthalate on the same date. All other sampling results for these constituents were non-detect. On March 14, 2005, the Discharger submitted a letter to the Regional Water Board discussing the sampling results for bis(2-ethylhexyl) phthalate. The Discharger also submitted additional sampling results. In their letter, the Discharger stated the sample results might have been the result of contamination of sampling apparatus, sample containers, or analytical equipment.
In order to verify if bis(2-ethylhexyl) phthalate is truly present in the receiving water or effluent discharge, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant. If changes in sampling and/or analytical procedures and equipment indicate that bis(2-ethylhexyl) phthalate is not present in the effluent or receiving water samples at concentrations that cause reasonable potential as defined by the SIP for six consecutive sampling events, then effluent limits are not necessary. However, if bis(2-ethylhexyl) phthalate continues to be detected in the effluent and/or receiving water, then this Order may be reopened and modified by adding an appropriate effluent limitation for bis(2-ethylhexyl) phthalate.

g. **Chlorine Residual.** The Discharger has installed the Zenon system which incorporates a pulsed backflush with chlorine containing compounds to maintain filtration rates. Due to the existing chlorine compound use and the potential for chlorine compounds to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective. The Discharger only uses chlorine compounds when backflushing the Zenon system and does not discharge chlorine compounds continuously. Therefore, the Discharger is required to monitor residual chlorine daily when chlorine is being used.

The Facility discharges through a diffuser to the Sacramento River. The chlorine residual limitations required in this Order are protective of aquatic organisms in the undiluted discharge. If compliance is maintained, the Regional Water Board does not anticipate residual chlorine impacts to benthic organisms.

The Discharger can immediately comply with these new effluent limitations for chlorine residual.

h. **Electrical Conductivity. (see Subsection i. Salinity)**

i. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, Sulfate, and Chloride.

Table F-4. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[3]	Effluent	
			Avg	Max
EC (umhos/cm)	Varies[2]	900, 1600, 2200	8,914	15,400
TDS (mg/L)	Varies	500, 1000, 1500	6,080	9,640
Chloride (mg/L)	Varies	250, 500, 600	1,718	3,820

1 Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

2 The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

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

i. **Chloride**. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

ii. **Electrical Conductivity (EC)**. The secondary MCL for EC is 900 umhos/cm as a recommended level, 1,600 umhos/cm as an upper level, and 2,200 umhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 umhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 umhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

A review of the Discharger's monitoring reports of weekly EC data from August 2000 through May 2007 shows an average effluent EC of 8,914 umhos/cm, with a range from 4,320 umhos/cm to 15,400 umhos/cm (excluding one outlier). A review of receiving water monitoring from August 2000 through May 2007 shows an average upstream receiving water (RSW-001U) EC of 127 umhos/cm and average downstream receiving water (RSW-002D) EC value of 121 umhos/cm. The data shows that the discharge has no observable impact on the EC levels in the Sacramento River. The downstream decrease in EC is negligible and can be partially attributed to detection limitations of the monitoring equipment (+/- 5 umhos/cm).

iii. **Total Dissolved Solids (TDS)**. The secondary MCL for TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation

water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average TDS effluent concentration was 6,080 mg/L and a ranged from 2,510 mg/L to 9,640 mg/L for 338 samples collected by the Discharger from August 2, 2000 through May 30, 2007. These concentrations exceed the applicable water quality objectives.

iv. **Salinity Effluent Limitations.** Technology-based effluent limitations for chloride and TDS are being carried forward from the previous Order.

j. **Settleable Solids.** For inland surface waters, the Basin Plan states that "[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses." This Order contains average monthly and average daily effluent limitations for settleable solids.

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

k. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.

4. WQBEL Calculations

a. Effluent limitations for ammonia were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations.

b. **Effluent Limitation Calculations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

For the human health, agriculture, or other long-term criterion/objective, a dilution credit can be applied. The ECA is calculated as follows:

$$ECA_{HH} = HH + D(HH - B)$$

where:

ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion

ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

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

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

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

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

Table F-5. WQBEL Calculations for Ammonia

	Acute	Chronic (4-day)	Chronic (30-day)	Human Health
Criteria (mg/L) (1)	0.470	4.18	1.67	30.0
Dilution Credit	50:1	50:1	50:1	50:1
ECA	24.0	213	85.2	1500
ECA Multiplier	0.137	0.249	0.53	--
LTA	3.29	53.0	45.2	--
AMEL Multiplier (95th%)	2.48	(2)	(3)	--
AMEL (mg/L)	**8.2**	(2)	**(3)**	**30**
MDEL Multiplier (99th%)	7.29	(2)	(3)	--
MDEL (mg/L)	**24.0**	(2)	**(3)**	**60**

(1)-USEPA Ambient Water Quality Criteria
(2)-Limitations based on chronic acute LTA ({Chronic Acute LTA < Acute Chronic (4-day) LTA)]
(3)-Limitations based on acute LTA [Acute LTA < Chronic (30-day) LTA]

Table F-6. Calculation of Ammonia Effluent Concentration Allowance (ECA)

Criteria mg/L	**Criterion**	**Dilution Credit**	**Allocation Factor**	**Background (Sacramento River) B**	**ECA** mg/L
0.470	Acute aquatic life	50	NA		24.0
1.67	Chronic aquatic life (30 day)	50			85.2
4.18	Chronic aquatic life (4 day)	50			213
30.0	Human Health	50			1500

Table F-7. Ammonia WQBEL Calculation Summary Table

Units	**Criterion**	**ECA**	**CV**	**ECA multiplier**	**LTA**	**Most limiting LTA**	**AMEL aquatic life**	**MDEL aquatic life**	**AMEL human health**	**MDEL human health**
mg/L	Acute aquatic life	24.0	1.6	0.137	3.29	3.29	8.2	24.0	--	--
	Chronic aquatic life (30 day)	85.2		0.53	45.2	--				
	Chronic aquatic life (4 day)	213		0.249	53.0	--				
	Human health	1500		--	--	--	--	--	1500	3000

Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Table F-8. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine Residual	mg/L	--	0.02	--	--
Settleable Solids	mL/L	0.1	0.2	--	--
Ammonia	mg/L	8.2	24.0	--	--

5. Whole Effluent Toxicity (WET)

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

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00. The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."* Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste (as specified in Attachment E V. A.2.) shall be no less than:

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

b. **Chronic Aquatic Toxicity.** Based on annual whole effluent chronic toxicity testing performed by the Discharger from August 7, 2000 through May 2, 2007,

the discharge has reasonable potential to cause or contribute to an to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

As discussed previously, there is assimilative capacity and adequate flow in the receiving water to provide a dilution credit. A dilution credit of 100:1 has been granted for the chronic condition based on the fact that a 1400:1 dilution ratio exists in the receiving water using a 7Q10 value of 3,027 cfs. Using BPJ, a cap of 100:1 dilution credit has been applied. In addition, chronic effects take place over a longer time period and therefore the extent of the mixing zone is not as critical as for acute effects. Therefore, chronic toxicity testing results exceeding 100 chronic toxicity units (TUc) demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

Numeric chronic WET effluent limitations have not been included in this order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[2] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012*, "In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, Special Provisions VI.C.2.a. of this Order requires the Discharger to

[2] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

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

D. Final Effluent Limitations

1. Mass-based Effluent Limitations.

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

2. Averaging Periods for Effluent Limitations.

3. Satisfaction of Anti-Backsliding Requirements.

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

4. Satisfaction of Antidegradation Policy

The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control (BPTC) of the discharge. The Discharger currently implements BPTC by utilizing a programmable logic controller based dissolved oxygen (DO) control system to maintain DO concentrations in Ponds 1, 2, and 3 and operating an ultrafiltration unit that utilizes membrane technology. According to the Discharger, reverse osmosis remains the only technology that could produce effluent of higher quality than that of the ultrafiltration unit. However, reverse osmosis has been shown to be inappropriate in this application due to the high level of organic compounds in the wastewater and the exceptionally high rate of fouling associated with its treatment. Annually over the last ten years, the Discharger has discharged less than 22 percent of the TSS and 38 percent of the BOD allowed by the USEPA Effluent Limit Guidelines and Standards for the Canned and Preserved Fruits and Vegetables Processing Point Source Category.

The permit does not allow an increase in regulated discharge flow or effluent limitations; it includes a new effluent limitation for ammonia. The Discharger is required to perform a mixing zone/dilution study to determine if a larger dilution credit is appropriate for ammonia. The permit requires the Discharger to conduct a treatment feasibility study to examine the benefits of potentially decreasing the discharge flow during periods of low flow in the Sacramento River. The permit also requires the Discharger to conduct a salinity/EC site-specific study to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. New receiving water monitoring requirements for total dissolved solids and chlorides are required to help evaluate salinity levels in the receiving water upstream and downstream of the discharge. The impact on existing water quality will be insignificant.

Summary of Final Effluent Limitations
Discharge Point 001

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	0.95	1.4	--	--
BOD 5-day @ 20°C	mg/L	100	150	--	--
	lbs/day	792[1]	1,168[2]	--	--
Total Suspended Solids	mg/L	100	200	--	--
	lbs/day	792[1]	1,168[2]	--	--
Chlorine Residual	mg/L	--	0.02	--	--
Settleable Solids	mL/L	0.1	0.2	--	--
Total Dissolved Solids	lbs/day	--	79,800	--	--
Chlorides	lbs/day	--	27,900	--	--
pH	standard units	--	--	6.0	9.5
Ammonia	mg/L	8.2	24.0	--	--

[1] Based on an average monthly flow of 0.95 mgd.

[2] Based on a daily maximum flow of 1.4 mgd.

a. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste (as specified in Attachment E V. A.2.) shall be no less than:

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

b. **Annual Average BOD 5-day @ 20°C.** The annual average BOD mass limitation is production based. The limitation is 2.39 lbs BOD per 1,000 lbs raw material.

c. **Annual Average Total Suspended Solids.** The annual average TSS mass limitation is production based. The limitation is 4.44 lbs TSS per 1,000 lbs raw material.

d. **Average Annual Discharge Flow.** The Average Annual Discharge Flow shall not exceed 0.75 mgd.

e. **Annual Average Total Dissolved Solids.** The annual average TDS mass shall not exceed 59,800 lbs/day based on a flow rate of 0.75 mgd.

f. **Annual Average Chlorides.** The annual average chlorides mass shall not exceed 20,900 lbs/day based on a flow rate of 0.75 mgd.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Regulated by Order No. 5-00-114

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and

narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, salinity and EC, settleable material, suspended material, tastes and odors, temperature, toxicity, turbidity, and electrical conductivity.

Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations. Rational for these numeric receiving surface water limitations are as follows:

a. **Bacteria.** The Basin Plan includes a water quality objective that "*[I]n water designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*." Numeric Receiving Water Limitations for bacteria are included in this Order and are based on the Basin Plan objective.

b. **Biostimulatory Substances**. The Basin Plan includes a water quality objective that "*[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.

c. **Color**. The Basin Plan includes a water quality objective that "*[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective.

d. **Chemical Constituents**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.

e. **Dissolved Oxygen.** The Sacramento River has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the Sacramento River, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order.

   For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that "…*the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water*

mass, and the 95 percentile concentration shall not fall below 75 percent of saturation." In addition, the Basin Plan specifies that the dissolved oxygen concentration to be reduced below 9.0 from June 1 to August 31. When natural conditions lower dissolved oxygen below this level, the concentrations shall be maintained at or above 95 percent of saturation. This objective was included as a receiving water limitation in this Order.

f. **Floating Material**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for floating material are included in this Order and are based on the Basin Plan objective.

g. **Oil and Grease**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for oil and grease are included in this Order and are based on the Basin Plan objective.

h. **pH.** The Basin Plan includes water quality objective that *"[T]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses*." This Order includes receiving water limitations for both pH range and pH change.

The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.

i. **Pesticides**. The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.

j. **Radioactivity**. The Basin Plan includes a water quality objective that *"[R]adionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life."* The Basin Plan states further that *"[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations…"* Receiving Water Limitations for radioactivity are included in this Order and are based on the Basin Plan objective.

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

The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1,600 umhos/cm as an upper level, and 2,200 umhos/cm as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 umhos/cm as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 umhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e., a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

A receiving water limitation of 900 umhos/cm as a monthly average for electrical conductivity is included in this Order based on the secondary MCL. Based on a review of the results of the report on the Salinity/EC Site-Specific studies this Order may be reopened for addition/modification of requirements for salinity and/or EC.

l. **Sediment.** The Basin Plan includes a water quality objective that *"[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses"* Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective.

m. **Settleable Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for settleable material are included in this Order and are based on the Basin Plan objective.

n. **Suspended Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for

suspended material are included in this Order and are based on the Basin Plan objective.

o. **Taste and Odors**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective.

p. **Temperature.** The Sacramento Riverhas the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." This Order includes a receiving water limitation based on this objective.

q. **Toxicity**. The Basin Plan includes a water quality objective that *"[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.

r. **Turbidity.** The Basin Plan includes a water quality objective that "*[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent*."

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

B. Groundwater – Regulated by Order No. 5-00-114

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

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective

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

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

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations.

B. Effluent Monitoring

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

C. Whole Effluent Toxicity Testing Requirements

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

2. **Chronic Toxicity.** Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

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

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Production Monitoring

Production monitoring is required to ensure compliance with the technology-based annual average effluent limitations for BOD_5 and TSS as required in 40 CFR Part 407.

2. Rainfall and Storm Water Monitoring

The monthly amount of storm water generated and discharged to the treatment ponds is required to ensure proper operation of the ponds.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

1. Reopener Provisions

a. **Salinity/EC Site-Specific Studies.** This Order requires the Discharger to prepare and submit a report on the results of Salinity/EC Site-Specific studies to determine appropriate salinity/EC levels necessary to protect downstream beneficial uses. The study shall evaluate how climate, river flow, background water quality, rainfall, and flooding affect Salinity/EC requirements. Based on these factors, the study shall recommend site-specific numeric values for Salinity/EC that fully protect the Sacramento River's agricultural irrigation use designation. The Regional Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for Salinity/EC, and reopen the permit, as necessary, to include appropriate effluent limitations for

these constituents. The Study shall be completed and submitted to the Regional Water Board within 39 months of the effective date of this Order for approval by the Executive Officer. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for salinity and/or EC based on a review of the results of the Study.

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

c. **Mixing Zone/Dilution Study.** The Discharger shall conduct a mixing zone/dilution study that shall be submitted within two (2) years after approval of work plan. This reopener provision allows the Regional Water Board to reopen this Order for modification of ammonia effluent limitations.

2. Special Studies and Additional Monitoring Requirements

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

This provision requires the Discharger to develop a Toxicity Reduction Evaluation (TRE) Work Plan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity has been demonstrated.

Monitoring Trigger. A numeric monitoring trigger of >100 TUc (where TU=100/NOEC) is applied in the provision, because this Order does allow dilution for the chronic condition. A dilution credit of 100:1 has been granted for chronic condition.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be

performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

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

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

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

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

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

- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA 600/6-91/005F, February 1991.

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

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

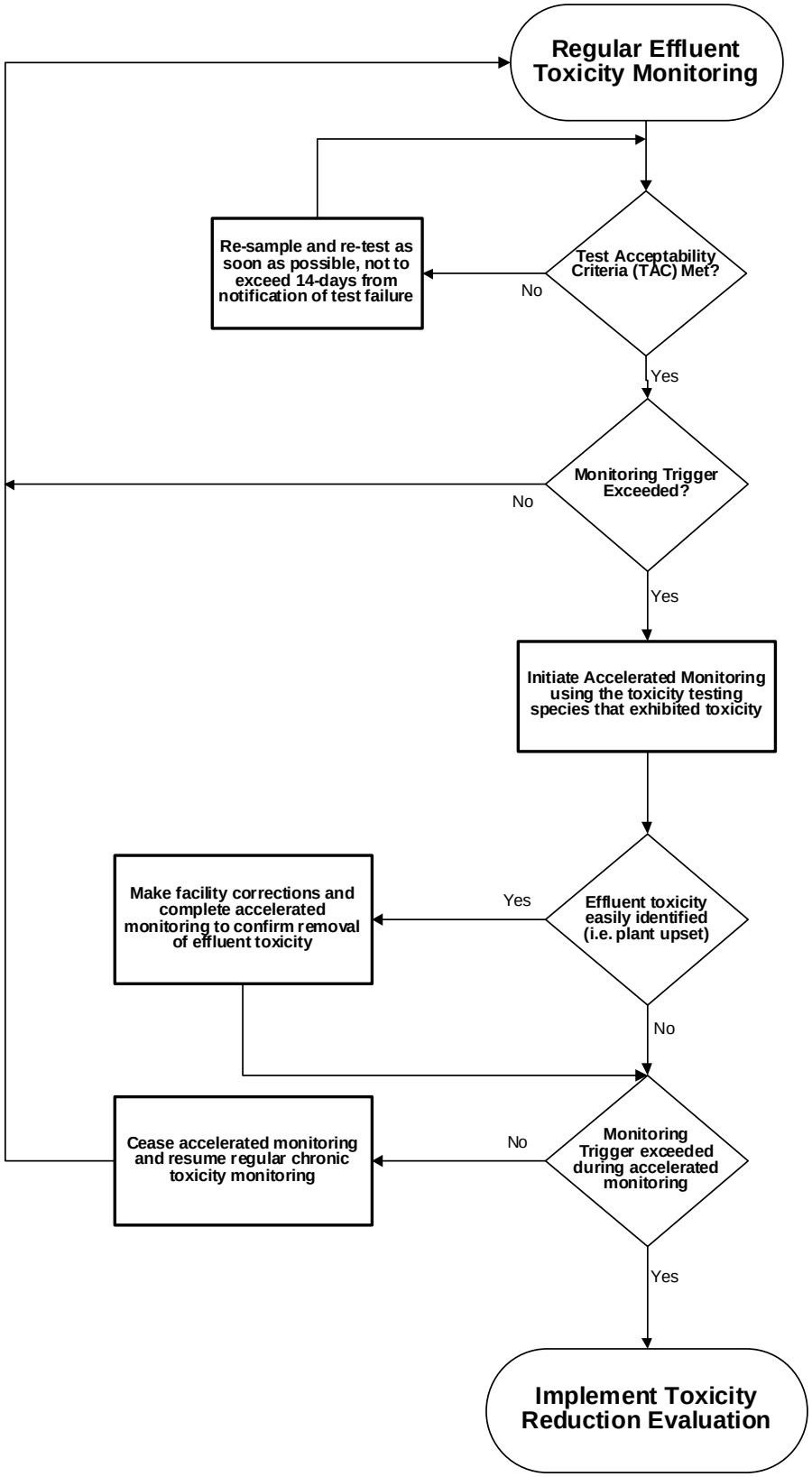
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.

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

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

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

Figure F-3
WET Accelerated Monitoring Flow Chart



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

4. **Construction, Operation, and Maintenance Specifications – Not Applicable**

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

6. **Other Special Provisions – Not Applicable**

7. **Compliance Schedules – Not Applicable**

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Bell Carter Olive Company. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

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

B. Written Comments

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

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by noon on October 29, 2007.

C. Public Hearing

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

Date: December 6/7, 2007
Time: 8:30 am

Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

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

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/rwqcb5/ where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

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

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jacqueline Mathews at 530-224-3249.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

SPECIAL ORDER NO. R5-2004-0074

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER NO. 5-00-113
NPDES PERMIT NO. CA0083721
FOR
BELL-CARTER OLIVE COMPANY, INC.
AND
CITY OF CORNING
INDUSTRIAL WASTEWATER TREATMENT PLANT
TEHAMA COUNTY

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

1. Waste Discharge Requirements Order No. 5-00-113 (NPDES Permit No. CA0083721) was adopted by the Regional Board on 16 June 2000, authorizing the Bell Carter Olive Company, Inc., (Bell Carter) and the City of Corning (hereafter collectively referred to as Discharger) to discharge the following volumes of treated olive processing wastewater from Bell Carter's wastewater treatment plant (WWTP) directly to the Sacramento River:

0.4 million gallons per day (mgd)	Annual Average Flow
0.6 mgd	Monthly Average Flow
1.0 mgd	Daily Maximum Flow

2. In addition to the flows described in Finding No. 1, the Discharger discharges up to 0.35 mgd (monthly average flow) to the City of Corning Industrial and Domestic Wastewater Treatment Facility. All flows from the Discharger's facility, either directly through the river outfall or indirectly through the Corning WWTP, enter the Sacramento River below Woodson Bridge through a combined outfall owned by the City of Corning.

3. The Discharger recently constructed a micro-filtration plant which will enable it to treat all of its wastewater (0.75 mgd, annual average) without having to rely on the Corning WWTP. The Discharger submitted a Report of Waste Discharge on 17 December 2003, requesting an increase in allowable discharge flow to the Sacramento River equaling that which has historically been going to the Corning WWTP. The Discharger's permit is due to expire in June 2005. The Regional Board has decided to amend the permit rather than renew it at this time. The permit is being amended to address the increased discharge flow limitations requested by the Discharger. Water quality based effluent limitations and other matters will be addressed at the time the permit is renewed.

4. The Discharger and interested parties were notified of the Regional Board's intent to amend Order No. 5-00-113 and were provided opportunity for a public hearing and to submit written comments.

5. In a public meeting on 4 June 2004, all comments pertaining to the proposed amendments to the existing Order were heard and considered.

6. The action to amend Waste Discharge Requirements Order No. 5-00-113 is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), in accordance with Section 13389 of the California Water Code.

IT IS HEREBY ORDERED, pursuant to sections 13263, 13267, and 13377 of the California Water Code, that Waste Discharge Requirements Order No. 5-00-113 is amended as follows:

Discharge Prohibition A.1:

1. Discharge of wastewater and treated wastewater at locations or in a manner different from that described in Finding Nos. 2, 4, 5, 10, and Order No. R5-2004-0074 is prohibited.

Effluent Limitation B.1:

1. The direct discharge of effluent to the City of Corning outfall line in excess of the following limits is prohibited:

Constituents	Units	Monthly Average	Annual Average	Daily Maximum
Flow	mgd	0.95	0.75	1.4
BOD[1]	mg/L lbs/day	100 792[2]	-- Prod. Based[3]	150 1,168[4]
Total Suspended Solids	mg/L lbs/day	100 792[2]	-- Prod. Based[3]	200 1,168[4]
Chlorine Residual	mg/L	--	--	0.02
Settleable Solids	ml/L	0.1	--	0.2
Total Dissolved Solids	lbs/day	--	59,800[5]	79,800[7]
Chlorides	lbs/day	--	20,900[6]	27,900[8]

[1] 5-day, 20ºC Biochemical Oxygen Demand (BOD).
[2] Based on flow rate of 0.95 mgd and a concentration of 100 mg/l.
[3] Based on 2.39 lbs BOD and 4.44 lbs TSS per 1000 lbs of apportioned production.
[4] Based on flow rate of 1.4 mgd and a concentration of 100 mg/l.
[5] Based on flow rate of 0.75 mgd and concentration of 9,560 mg/L.
[6] Based on flow rate of 0.75 mgd and concentration of 3,350 mg/L.
[7] Based on flow rate of 1.0 mgd and concentration of 9,560 mg/L.
[8] Based on flow rate of 1.0 mgd and concentration of 3,350 mg/L.

Effluent Limitations C.1 (Total combined discharge to the River):

The applicable portions of Effluent Limitation C.1 are moved to Effluent Limitation B.1. Effluent Limitation C.1 is deleted.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Special Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 4 June 2004.

THOMAS R. PINKOS, Executive Officer

RB: sae

INFORMATION SHEET

ORDER NO. R5-2004-0074
BELL-CARTER OLIVE COMPANY, INC.
AND CITY OF CORNING
INDUSTRIAL WASTEWATER TREATMENT PLANT
TEHAMA COUNTY

Order No. 5-00-113, Adopted by the Regional Board on 16 June 2000, authorizes Bell Carter Olive Company Inc. (Bell Carter) to discharge up to 0.60 mgd (monthly average) of treated industrial wastewater to the Sacramento River. The City of Corning allows an additional 0.35 mgd of pretreated industrial wastewater to be discharged from Bell Carter's treatment facility to the Corning Wastewater Treatment Plant (WWTP). Bell Carter owns the industrial treatment facility, and the City of Corning owns the property. The discharges from Bell Carter and the City of Corning are combined in a single pipeline which discharges to an outfall structure in the Sacramento River just downstream of Woodson Bridge and approximately five miles east-southeast of Corning.

With installation and operation of micro-filtration, Bell Carter can meet effluent limitations for its entire discharge. Bell Carter no longer needs to discharge to the Corning WWTP and has requested an increase in the direct discharge permitted flow to 0.75 mgd, as an annual average. However, the increase in flow allowed in this permit will offset the decrease in flow that was discharged to the City of Corning WWTP so there will be no net increase in wastewater to the Sacramento River.

FOR FURTHER INFORMATION

For further information or questions regarding the NPDES permit, contact Ray Bruun at the Regional Water Quality Control Board in Redding at (530) 224-3249.

RB: sae