Constituents objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation of 450 mg/L for total dissolved solids, based on Ayers and Westcot, is appropriate to apply the narrative Chemical Constituents objective to protect the unrestricted agricultural use of groundwater in the absence of information to support a less protective limit.

5. Nitrate, which was found to be present in the wastewater at an average concentration of up to 27 mg/L as nitrogen, has the potential to degrade groundwater quality because there is little ability for attenuation in the shallow permeable vadose zone beneath the Facility. Furthermore, groundwater monitoring data show nitrate concentrations above the primary MCL of 10 mg/L in monitoring wells MW-3 and MW-5. The Chemical Constituents objective prohibits concentrations of chemical constituents in excess of California MCLs in groundwater that is designated as municipal or domestic supply. The California primary MCL for nitrate is equivalent to 10 mg/L as nitrogen, and groundwater beneath the facility is designated as municipal or domestic supply. It is therefore appropriate to adopt a numerical groundwater limitation of 10 mg/L for nitrate as nitrogen to implement the Chemical Constituents objective to protect the municipal and domestic use of groundwater.

6. pH, which ranged 6.4-7.9 standard units in the domestic wastewater, has the ability to degrade groundwater quality at this site because there is little potential for buffering in the shallow permeable vadose zone. According to Ayers and Westcot, pH less than 6.5 or greater than 8.4 can cause yield or vegetative growth reductions of sensitive crops if present in irrigation water, thereby impairing agricultural use of the water resource. The applicable water quality objective to protect the agricultural use from discharges of substances that affect pH is the narrative Chemical Constituents objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation range of 6.5 to 8.4 for pH, based on Ayers and Westcot, is relevant and appropriate to apply the narrative Chemical Constituents objective to protect unrestricted agricultural use of groundwater in the absence of information to support a less protective limit.

7. Ammonia has the potential to degrade groundwater quality because there is little ability for ammonia attenuation in the shallow permeable vadose zone at this site. According to Amoore and Hautala[3], who evaluated odor of ammonia in water, the odor threshold for ammonia in water is 1.5 mg/L (as $NH_4$). These authors studied the concentration of chemicals in air that caused adverse odors and then calculated the concentration in water that would be equivalent to that amount in air. Therefore, it is appropriate to use the data contained therein to apply the narrative Tastes and Odors water quality objective. Concentrations that exceed this value can impair the municipal or domestic use of the resource by causing adverse odors. The applicable water quality objective to protect the municipal and domestic use from discharges of

[3] Amoore, J.E. and E. Hautala, *Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatilities for 214 Industrial Chemicals in Air and Water Dilution*, Journal of Applied Toxicology, Vol. 3, No. 6, (1983).

odor producing substances is the narrative Tastes and Odors objective, which is applied following the "Policy of Application of Water Quality Objectives" in the Basin Plan. A numerical groundwater limitation of 1.5 mg/L for ammonia (as $NH_4$), based on Amoore and Hautala, is relevant and appropriate to apply the narrative Tastes and Odors objective to protect the municipal and domestic use of groundwater.

8. 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 (*e.g.*, BOD and TSS reduction requirements).

Previous required monitoring of antimony, arsenic, thallium, 4,4'-DDD, and 303(d) pesticides in the influent was only necessary to determine if any of these constituents had reasonable potential to exceed a water qualtiy objective and if so how much source control would be necessary. Substantial data has been collected and this monitoring is no longer necessary except as part of priority pollutants monitoring, thus it was removed from the influent monitoring requirements.

### B. Effluent Monitoring

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

2. The previous Order required monitoring of antimony, arsenic, thallium, and copper in the effluent and has been removed because monitoring data collected since 2002 shows that these constituents do not have a reasonable potential to exceed a water quality objective and thus there are not effluent limitations for these constituents. Monitoring for these constituents is still required by the constituent study. Limits for cyanide, dichlorobromomethane, chlorodibromomethane, and total trihalomethanes

dictate these constituents be monitored on a monthly basis. Additionally, bis(2-ethylhexyl) phthalate is required to be monitored quarterly using clean techniques to confirm there is no reasonable potential to violate any water quality criteria.

3. Effluent Oil & Grease monitoring has been changed from a weekly frequency to a monthly frequency. The discharger asked for a reduction in monitoring frequency, because monitoring for this parameter since 2001 has consistently been non-detect.

### 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.** Quarterly 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

a. Section 13267 of the California Water Code states, in part, *"(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region"* and *"(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports."* The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program (Attachment E) is issued pursuant to California Water Code Section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

c. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Board plans and policies, including Resolution 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

### E. Other Monitoring Requirements

#### 1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.6.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

#### 2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

## 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. **New or revised Water Quality Standards and/or new information.** This Order may be reopened based on new or revised water quality standards and/or new information as described in 40 CFR section 122.62.

b. **Mercury.** If a TMDL program is adopted, this Order shall be reopened and the total mercury interim mass effluent limitation modified (higher or lower) or an effluent concentration limitation for total and/or methyl mercury imposed.

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

d. **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.

e. **TMDLs.** TMDLs may be established for mercury, diazinon, chloropyrifos and EC for the northwestern Delta. Should TMDLs with waste allocations be established for any of these constituents, this Order may be reopened to include final numeric limitations.

f. **EC and pH Study.** This Order requires that the Discharger conduct a study to evaluate numeric site-specific water quality objectives for EC and pH that are adequately protective of the AGR beneficial use. This Order may be reopened based on the results of the study.

g. **Basin Plan Amendments.** If the Regional Water Board adopts a Basin Plan amendment that removes or redefines the MUN beneficial use for the lower segments of New Alamo Creek and Ulatis Creek and/or adopts site-specific objectives for one or more human health constituents, this Order may be reopened to modify or remove effluent limitations consistent with any water quality standards refinements adopted and approved for lower New Alamo Creek and Ulatis Creek.

h. **Cyanide Study.** This Order requires the Discharger to conduct a study of the analytical procedures for laboratory analyses of cyanide. This Order may be reopened pending the results of these studies and establish new limitations.

i. **Chlorodibromomethane and Dichlorobromomethane.** The Discharger has applied for a case-by-case exception from the CTR for chlorodibromomethane and dichlorobromomethane. Upon approval of this exception this Order may be reopened and effluent limitations may be modified or eliminated.

j. **Bis(2-ethylhexyl)phthalate.** This Order requires the Discharger to collect and analyze effluent bis(2-ethylhexyl)phthalate samples using a clean technique. Should the results of that sampling show bis(2-ethylhexyl)phthalate in concentrations that exceed the applicable water quality criteria, this Order may be reopened to establish new effluent limitations.

k. **Human Heath Criteria Dilution Study**. This Order requires the Discharger to conduct a Human Health Criteria Dilution Study to determine the available dilution for human health criteria in New Alamo Creek. Based on the findings of the study, this Order may be reopened to modify the effluent limitations that may receive a human health dilution credit.

l. **Litigation-related issues.** The Discharger and the State Water Board are under litigation in the Contra Costa County Superior Court, *City of Vacaville v. State Water Resources Control Board* (Contra Costa County Case No. CIV MSN 03-0956). Issues relating to this litigation may affect this Order. This Order will be reopened as necessary to ensure compliance with any final, non-appealable decision in that case.

## 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 quarterly whole effluent chronic toxicity testing performed by the Discharger from January 2004 through July 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.

This provision requires the Discharger to develop a Toxicity Reduction Evaluation (TRE) Work Plan in accordance with EPA 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 toxicity monitoring trigger of > 1 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

**Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether 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.

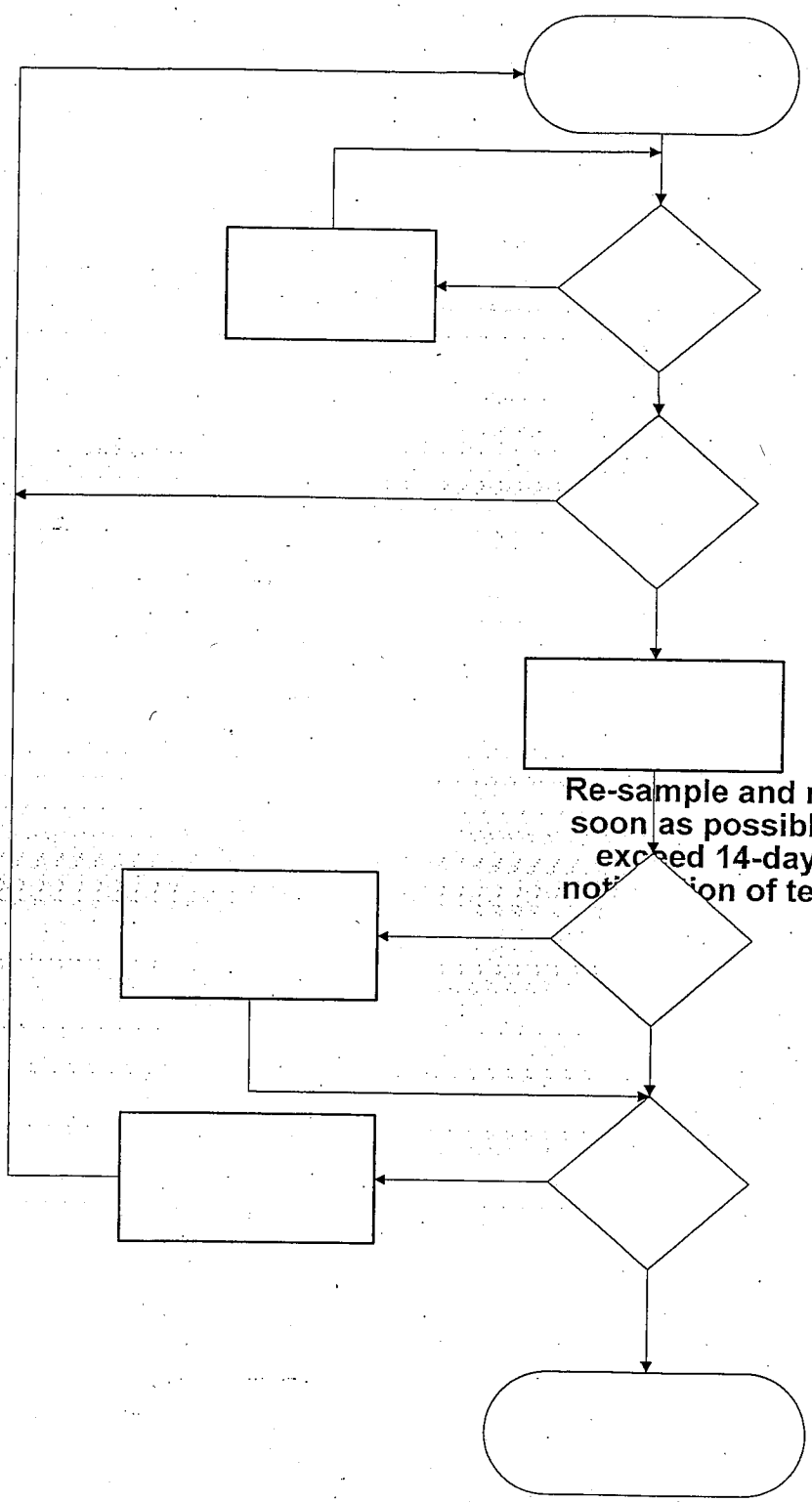
The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, 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-3), 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-1
## WET Accelerated Monitoring Flow Chart

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b. **Electrical Conductivity (EC) and pH Study (Special Provisions VI.C.2.b.).** The discharge exceeds the screening levels for EC, TDS, and chloride recommended in 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) (UN Report) for irrigation of crops. However, the salinity level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. Therefore, this Order requires the Discharger complete and submit a report on the results of a site-specific investigation of appropriate EC levels to protect the beneficial use of agricultural supply for the most salt sensitive crops in areas irrigated with Old Alamo Creek, New Alamo Creek, and Ulatis Creek waters in the vicinity of the discharge under reasonable worst-case conditions. The study shall determine the sodium adsorption ratio of soils in the affected area, the alkalinity of soils to whether site specific conditions would reduce fluoride impacts, the effects of rainfall and flood-induced leaching, and background water quality (Old Alamo, New Alamo and Ulatis Creeks and groundwater). The study shall evaluate how climate, soil chemistry, background water quality (surface water and groundwater), rainfall, and flooding affect salinity (EC) requirements. Based on these factors, as well as economic and environmental impacts (such as increased irrigation water usage, groundwater hydraulics and degraded water quality), the study shall recommend site-specific numeric values for EC that provide reasonable protection for the agricultural supply use designation in Old and New Alamo Creek and Ulatis Creek. The Order also requires TDS and pH groundwater limits based on the UN Report for protection of the agricultural water supply beneficial use of the groundwater. As part of the EC site-specific study, the Discharger shall evaluate the appropriate pH levels that are protective of the agricultural water supply beneficial use of the groundwater, which may be used to irrigate crops in the area. The Regional Water Board will evaluate the recommendations, select appropriate values, re-evaluate reasonable potential for EC, including consideration of the secondary MCL for EC for the protection of MUN in New Alamo Creek and Ulatis Creek and reopen the Order, as necessary, to revise effluent limitations for EC. Furthermore, the Regional Water Board will re-evaluate the groundwater limitations for TDS and pH, based on the results of the study and may reopen to modify the groundwater limitations, as appropriate.

c. **Groundwater Monitoring (Special Provisions VI.C.2.c.).** To determine compliance with Groundwater Limitations V.B., the Discharger is required to evaluate the adequacy of its groundwater monitoring network. This provision requires the Discharger to evaluate its groundwater monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. Currently, there are no groundwater monitoring wells downgradient of the asphalt-lined sludge drying beds and lined aerated lagoons. Additionally, the background monitoring wells may have been influence by previous disposal or

treatment practices or influenced by the effluent discharge to Old Alamo Creek. The Discharger must install new groundwater monitoring wells, if necessary, collect two years of monitoring data, and submit a report evaluating the underlying groundwater . If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to BPTC and minimizing the discharge's impact on groundwater quality.

d. **Human Health Criteria Dilution Study.** A dilution credit of 1.1:1 has been allowed in this Order for developing water quality-based effluent limitations based on human health criteria. The dilution credit is based on a worst-case dilution during low flow periods in New Alamo Creek and may not be appropriate for long-term human health criteria. This Order requires the Discharger to conduct a dilution study to evaluate the available dilution in New Alamo Creek, based on the harmonic mean flow in New Alamo Creek.

### 3. Best Management Practices and Pollution Prevention

a. **Salinity Reduction Goal.** A salinity goal has been established in this Order to provide a measurable goal for effluent salinity reductions to demonstrate that the Discharger is making reasonable progress in the reduction of salinity in its discharge to Old Alamo Creek and downstream waters. An annual average effluent salinity of 864 µmhos/cm as electrical conductivity (EC) has been established as a reasonable goal for this permit term. In the Tulare Lake Basin Plan (Page IV-10), the Regional Water Board adopted a maximum allowable effluent limitation for publicly owned wastewater treatment works discharging to navigable water: "*The maximum electrical conductivity (EC) of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter....*" Although not directly applicable to the Facility's discharge to Old Alamo Creek, the Tulare Lake Basin Plan salinity effluent limit indicates what constitutes a reasonable incremental increase above the Discharger's water supply (i.e. water supply EC plus 500 µmhos/cm). Based on water supply monitoring performed by the Discharger in 2006, the EC of the water supply averaged 364 µmhos/cm. Reducing the annual average effluent salinity to 864 µmhos/cm as EC is an achievable goal that would demonstrate a reasonable measure of progress in the reduction of salinity discharged to Old Alamo Creek.

b. **Pollution Prevention Plans for salinity and mercury.** The Discharger shall update and implement pollution prevention plans for salinity and mercury in accordance with CWC section 13263.3(d)(3). The PPP's are necessary for salinity and mercury to ensure that the discharge of these pollutants does not increase pending the development of TMDLs or, in the case of salinity, the development of a site-specific study.

c. **CWC section 13263.3(d)(3) Pollution Prevention Plans.** The pollution prevention plans required for salinity, mercury, cyanide, chlorodibromomethane,

and dichlorobromomethane shall, at minimum, meet the requirements outlined in CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

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

a. The emergency storage ponds will be operated such that there is no public contact with wastewater, mosquito breeding in prevented, erosion is controlled, weeds are minimized, debris doesn't accumulate on the water, freeboard is never less than two feet and no infiltration of wastewater into soils or groundwater.

b. The treatment plant expansion project included new headworks and influent monitoring flume. The flume did not correctly monitor influent flows for three years. To correct the influent monitoring structure a plywood platform has been installed on the bottom of the flume. The Discharger shall have the influent flow monitoring structure inspected and certified by a California licensed civil engineer that did not design the structure for flow metering accuracy and permanence of the structure.

c. The treatment facilities must be protected from a 100-year storm. Protection prevents facilities from washing out and is required to protect public health in the event of a 100-year storm.

d. **Bypass (blending) Requirements.** Effective immediately and until 30 April 2015, the bypass of the secondary treatment facilities may be allowed under conditions provided is Special Provisions Section VI.C.4.d. of this Order.

During dry weather operation, all influent wastewater is directed to the South Plant. The North Plant primary treatment system is only used during wet weather events producing high flows. Secondary treatment flows are split between the two parallel plants. The flow split is 40 percent (6 mgd) to the North Plant, and 60 percent (9 mgd) to the South Plant. During wet weather flows exceeding the capacity of the secondary treatment facilities (~40 mgd), the Discharger bypasses secondary treatment for a portion of the wastewater. A portion of the primary treated effluent is directed around the secondary treatment processes and blended with secondary treated effluent prior to passage through the disinfection system, then discharged to Old Alamo Creek.

The Clean Water Act (CWA) requires POTWs to meet secondary treatment performance-based requirements, as defined by 40 CFR 133.102 as achieving a $BOD_5$ 30-day average of 30 mg/l, a 7-day average of 45 mg/l and a 30-day average percent removal of at least 85 percent. The combined effluent described in this permit will be capable of meeting secondary effluent limitations contained in 40 CFR 133.102 as a technology based standard.

The Discharger has indicated that additional expansions, scheduled after 2020 and 2030, will phase out the bypass of the secondary treatment units during high flow conditions. The previous permits have allowed bypasses, however, the CWA, Section 402 prohibits sewage bypasses, which are defined in 40 CFR 122.41 (m) (1), as an "*intentional diversion of waste streams from any portion of a treatment facility*", except in certain circumstances specified in the regulations. The United States Environmental Protection Agency (USEPA) has previously provided guidance in interpreting the bypass prohibition and exceptions. USEPA has stated that peak wet weather discharges from POTWs routed around biological treatment units prior to discharge can be approved by an NPDES permit where all the following principles are met: (1) The discharge meets all effluent limitations; (2) The permit recognizes the specific treatment schemes for peak flow management; (3) Alternative flow routing scenarios are only used when flows

exceed the capacity of storage/equalization units; (4) The treatment system is operated as it is designed to be operated; and (5) The permit requires permittees to properly design, operate and maintain its collection system. The exception to the bypass requirement of 40 CFR 122.41 (m) assumes generally accepted good engineering practices are utilized, such as storage/equalization units to provide initial capacity for peak wet weather flows to a reasonable extent. The Discharger has not provided information demonstrating that the bypass would meet the exceptions to the prohibition, including demonstrating that all generally accepted good engineering practices have been considered, such as the construction of storage/equalization units. Furthermore, the practice of bypassing secondary treatment facilities likely does not meet best practicable treatment or control requirements, as mandated by State Water Board Resolution 68-16. Therefore, this permit does not allow bypass of secondary treatment.

The State Water Board in Water Quality Order WQO 2002-0015 concluded that the Regional Water Board appropriately implemented the federal mandatory bypass prohibition in Order No. 5-01-044. If new information is submitted to the Regional Water Board that demonstrates that the bypass would meet the requirements for an exception under 40 CFR 122.41(m) consistent with USEPA's guidance, this permit may be reopened for further consideration of the bypass prohibition.

On 8 May 2003 the State Water Board and Regional Water Board agreed to Stay the bypass prohibition until the Contra Costa County Superior Court considered the Discharger's petition for Writ challenging the prohibition on bypass. Subsequently on 5 September 2003, the Regional Water Board adopted Resolution No. R5-2003-0129, amending Provision F.4 of Order No. 5-01-044, to stay the time schedule until the Court considers the Discharger's Petition for Writ. Therefore, Special Provisions VI.C.7.a of this Order includes a time schedule to discontinue the bypass practices, pending the resolution of the Court action.

**5. Special Provisions for Municipal Facilities (POTWs Only)**

**a. Pretreatment Requirements.**

i. The Federal Clean Water Act, Section 307(b), and Federal Regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.

ii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails

to perform the pretreatment functions, the Regional Water Board, the State Water Board or the U.S. EPA may take enforcement actions against the Discharger as authorized by the CWA.

b. **Biosolids.** The use and disposal of biosolids is regulated under federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. The Discharger is required to comply with the standards and time schedules contained in 40 CFR Part 503.

Title 27, CCR, Division 2, Subdivision 1, section 20005 establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. This Order includes requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations.

c. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. On 24 October 2006 , the Discharger applied for coverage under State Water Board Order No. 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR section 122.41(e)], report any non-compliance [40 CFR section 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR. section 122.41(d)].

6. **Other Special Provisions**

a. **Effective 1 May 2015**, pursuant to CDPH reclamation criteria, Title 22 CCR, Division 4, Chapter 3, (Title 22), wastewater discharged to Old Alamo Creek from 1 May through 31 October, each year, must be oxidized, coagulated, filtered, and adequately disinfected; or equivalent. Special Provision VI.C.6.a requires that effluent discharges to Old Alamo Creek seasonally meet the requirements of Title 22, or equivalent, for the protection of the REC-1, REC-2, and AGR beneficial uses.

b. Sections 122.41(l)(3) and 122.61 of the Code of Federal Regulations establish requirements for the transfer of an NPDES permit. Special Provision VI.C.6.b of this Order requires the Discharger to comply with federal regulations for the transfer of NPDES permits in the event of a change of ownership.

## 7. Compliance Schedules

The use and location of compliances schedules in the permit or a separate enforcement order depends on the Discharger's ability to comply and the source of the applied water quality criteria/objectives. This Order includes several new requirements with which the Discharger cannot immediately comply. Table F-11 identifies the new requirements and the restrictions on compliance time schedules:

**Table F-11: New Permit Requirements and Compliance Schedule Restrictions**

| New Requirement | Compliance Schedule Restrictions | Compliance Schedules Allowed |
|---|---|---|
| Title 22 Tertiary Treatment, or equivalent, requirements (Special Provisions VI.C.6.a.) | Basin Plan allows up to 10 years in the permit | Compliance Schedule in the permit with full compliance by 1 May 2015 |
| Title 22 Tertiary Treatment, or equivalent, effluent limitations – BOD, TSS, turbidity, and total coliform organisms (Effluent Limitations IV.A.1.a., IV.A.1.e., IV.A.1.f.) | Basin Plan allows up to 10 years in the permit | Compliance Schedule in the permit with full compliance by 1 May 2015 |
| Bypass Prohibition (Discharge Prohibitions III.B.) | Basin Plan allows up to 10 years in the permit | Compliance Schedule in the permit with full compliance by 1 May 2015 |
| New CTR effluent limitations – cyanide, chlorodibromomethane, and dichlorobromomethane (Effluent Limitations IV.A.1.a. and IV.A.2.a.) | SIP allows up to 18 May 2010 in the permit | Compliance Schedule in the permit with full compliance by 18 May 2010, future enforcement order may be necessary |
| New non-CTR effluent limitations – nitrate (Effluent Limitations IV.A.1.a. and IV.A.2.a.) | Basin Plan requires immediate compliance, time schedule required in separate enforcement order | Time Schedule Order with full compliance required by 1 May 2013 |
| Groundwater limitations (Groundwater Limitations V.B.2.) | Basin Plan allows up to 10 years in the permit | Within 42 months of adoption of this Order or upon completion of the Groundwater Water Quality Characterization Study (see Section VI.C.2.d.), whichever is sooner |

Compliance with these new requirements will require the Discharger to construct new or expanded treatment facilities. These new requirements are interrelated, therefore, it is cost effective for the Discharger to address the necessary upgrades in one comprehensive plan. Multiple overlapping construction schedules would not be efficient, due to the significant risk of poor coordination, likely resulting in process disruption, discharge violations, and contractual arguments. The construction of one

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| Constituent, Unit CTR # | 2, 3, 7, 8-TCDD (Dioxin), µg/L # 16 | Acrolein, µg/L # 17 | Acrylonitrile, µg/L # 18 | Benzene, µg/L # 19 | Bromoform, µg/L # 20 | Carbon Tetrachloride, µg/L # 21 | Chlorobenzene (Monochloro-benzene), µg/L # 22 | Chlorodibromo-methane, µg/L # 23 | Chloroethane, µg/L # 24 | 2-Chloro- ethylvinyl Ether, (chloroalkylether), µg/L # 25 |
|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <.0016 E-06 | <5 | <2 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 | <1 |
| MEC, µg/L | 1.06 E-06 | 5 | 2 | 0.5 | 0.5 | 0.5 | 0.5 | 14 | 0.5 | 1 |
| Maximum Background, µg/L | | | | | 0 | | | 0.37 | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | MCL 3.0E-08 | No MCL | No MCL | MCL 1 | MCL THMs 80 | MCL 0.5 | MCL 70 | MCL THMs 80 | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 1.3E-08 c | 320 s | 0.059 a,c,s | 1.2 a,c | 4.3 a,c | 0.25 a,c,s | 680 a,s | 0.41 a,c | None Est. | None Est. |
| Human Health, µg/L Org Only | 1.4E-08 c | 780 t | 0.66 a,c,t | 71 a,c | 360 a,c | 4.4 a,c,t | 21,000 a,j,t | 34 a,c | None Est. | None Est. |
| Other factors | | | | | | | | | | |
| Reasonable Potential | I | N | I | N | N | I | N | Y | N | N |

| Constituent, Unit CTR # | Chloroform, µg/L # 26 | Dichlorobromo-methane, µg/L # 27 | 1,1-Dichloroethane, µg/L # 28 | 1,2-Dichloro-ethane, µg/L # 29 | 1,1-Dichloro-ethylene, µg/L # 30 | 1,2-Dichloro-propane, µg/L #31 | 1,3-Dichloro-propylene, µg/L # 32 | Ethylbenzene, µg/L # 33 | Methyl Bromide (Bromomethane), µg/L # 34 | Methyl Chloride (Chloromethane), µg/L # 35 |
|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | 18 | 1.7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| MEC, µg/L | 79 | 43 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Maximum Background, µg/L | 9.1 | 1.6 | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | MCL THMs 80 | MCL THMs 80 | MCL 5 | MCL 0.5 | MCL 6 | MCL 5 | MCL 0.5 | MCL 700 | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | OEHHA 1.1 | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | (CTR reserved)USEPA 5.7 | 0.56 a,c | None Est. | 0.38 a,c,s | 0.057 a,c,s | 0.52 a | 10 a,s | 3,100 a,s | 48 a | n |
| Human Health, µg/L Org Only | (CTR reserved)USEPA 470 | 46 a,c | None Est. | 99 a,c,t | 3.2 a,c,t | 39 a | 1,700 a,t | 29,000 a,t | 4,000 a | n |
| Other factors | | | | | | | | | | |
| Reasonable Potential | Y | Y | N | I | I | N | N | N | N | N |

## REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS

| Constituent, Unit CTR # | Methylene Chloride, µg/L # 36 | 1,1,2,2-Tetra-chloroethane, µg/L # 37 | Tetrachloro-ethylene, µg/L # 38 | Toluene, µg/L # 39 | 1,2-Trans- Dichloro ethylene, µg/L # 40 | 1,1,1 -Trichloro-ethane, µg/L # 41 | 1,1,2-Trichloro-ethane, µg/L # 42 | Trichloro- ethylene, µg/L # 43 | Vinyl Chloride, µg/L # 44 | 2-Chloro- phenol, µg/L # 45 |
|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <2 |
| MEC, µg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 2 |
| Maximum Background, µg/L | | | | | | | | | | |
| Numeric BP Objective, µg/L (Site Specific, MCL) | MCL, 5 | MCL, 1 | MCL, 5 | MCL, 150 | MCL, 10 | MCL, 200 | MCL, 5 | MCL, 5 | MCL, 0.5 | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 4.7 a,c | 0.17 a,c,s | 0.8 c,s | 6,800 a | 700 a | n | 0.60 a,c,s | 2.7 c,s | 2 c,s | 120 a |
| Human Health, µg/L Org Only | 1,600 a,c | 11 a,c,t | 8.85 c,t | 200,000 a | 140,000 a | n | 42 a,c,t | 81 c,t | 525 c,t | 400 a |
| Other factors | | | | | | | | | | |
| Reasonable Potential | N | I | N | N | N | N | N | N | N | N |

| Constituent, Unit CTR # | 2, 4 Dichlorophenol, µg/L # 46 | 2,4-Dimethyl – phenol, µg/L # 47 | 2-Methyl 4,6-Di-nitrophenol, µg/L # 48 | 2,4-Dinitrophenol, µg/L # 49 | 2-Nitrophenol, µg/L # 50 | 4-Nitro–phenol, µg/L # 51 | 4-chloro-3-methyl phenol, µg/L # 52 | Pentachloro-phenol, µg/L # 53 | Phenol, µg/L # 54 |
|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <1 | <1 | <5 | <1 | <5 | <5 | <1 | <1 | <1 |
| MEC, µg/L | 1 | 1 | 5 | 1 | 5 | 5 | 1 | 1 | 1 |
| Maximum Background, µg/L | | | | | | | | | |
| Numeric BP Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | MCL, 1 | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | |
| CMC Freshwater, µg/L At pH=6.5 | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | 5 f,w | None Est. |
| CCC Freshwater, µg/L At pH=6.5 | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | 4 f,w | None Est. |
| Human Health, µg/L Water +Org Only | 93 a,s | 540 a | 13.4 s | 70 a,s | None Est. | None Est. | None Est. | 0.28 a,c | 21,000 a |
| Human Health, µg/L Org Only | 790 a,t | 2,300 a | 765 t | 14,000 a,t | None Est. | None Est. | None Est. | 8.2 a,c,j | 4,600,000 a,j,t |
| Other factors | | | | | | | | | |
| Reasonable Potential | N | N | N | N | N | N | N | I | N |

| Constituent, Unit CTR # | 2, 4, 6 Trichloro-phenol, µg/L # 55 | Acenaphthene, µg/L # 56 | Acenaphthylene, µg/L # 57 | Anthracene, µg/L # 58 | Benzidine, µg/L # 59 | Benzo(a) anthracene, µg/L # 60 | Benzo(a) Pyrene, µg/L # 61 | Benzo(b) fluoranthene, µg/L # 62 | Benzo(ghi) perylene, µg/L # 63 |
|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <5 | <0.3 | <0.2 | <0.3 | <5 | <0.3 | <0.1 | <0.3 | <0.1 |
| MEC, µg/L | 5 | 0.3 | 0.2 | 0.3 | 5 | 0.3 | 0.1 | 0.3 | 0.1 |
| Maximum Background, µg/L | | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | MCL, 0.2 | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 2.1 a,c | 1,200 a | None established | 9,600 a | 0.00012 a,c,s | 0.0044 a,c | 0.0044 a,c | 0.0044 a,c | None established |
| Human Health, µg/L Org Only | 6.5 a,c | 2,700 a | None established | 110,000 a | 0.00054 a,c,t | 0.049 a,c | 0.049 a,c | 0.049 a,c | None established |
| Other factors | | | | | | | | | |
| Reasonable Potential | I | N | N | N | I | I | I | I | N |

| Constituent, Unit CTR # | Benzo(k) fluoranthene, µg/L # 64 | Bis (2-Chloro-ethoxy) Methane, µg/L # 65 | Bis (2-Chloroethyl) Ether, µg/L # 66 | Bis (2-Chloroiso-propyl) Ether, µg/L # 67 | Bis (2-Ethylhexyl) Phthalate, µg/L # 68 | 4-Bromo- phenyl Phenyl Ether, µg/L # 69 | Butyl benzyl Phthalate, µg/L # 70 | 2-Chloro-naphthalene, µg/L # 71 | 4-Chlorophenyl Phenyl Ether, µg/L # 72 |
|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.3 | <5 | <1 | <2 | <3 | <5 | <5 | <5 | <5 |
| MEC, µg/L | 0.3 | 5 | 1 | 2 | 53 | 5 | 5 | 5 | 5 |
| Maximum Background, µg/L | | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | MCL, 4 | No MCL | No MCL | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 0.0044 a,c | None est | 0.031 a,c,s | 1,400 a | 1.8 a,c,s | None est | 3,000 a | 1,700 a | None Est. |
| Human Health, µg/L Org Only | 0.049 a,c | None est | 1.4 a,c,t | 170,000 a,t | 5.9 a,c,t | None est | 5,200 a | 4,300 a | None Est. |
| Other factors | | | | | | | | | |
| Reasonable Potential | I | N | I | N | I (1) | N | N | N | N |

(1) See Attachment F, Section IV.C.3.f. for discussion of RPA for bis(2-ethylhexyl)phthalate.

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| Constituent, Unit CTR # | Chrysene, µg/L # 73 | Dibenzo (ah) anthracene, µg/L # 74 | 1,2 Dichloro-benzene, µg/L # 75 | 1, 3 Dichloro-benzene, µg/L # 76 | 1, 4 Dichloro-benzene, µg/L # 77 | 3,3-Dichloro-benzidine, µg/L # 78 | Diethyl Phthalate, µg/L # 79 | Dimethyl Phthalate, µg/L # 80 | Di-n-Butyl Phthalate, µg/L # 81 |
|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.3 | <0.1 | <0.5 | <0.5 | <0.5 | <5 | <2 | <2 | <5 |
| MEC, µg/L | 0.3 | 0.1 | 0.5 | 0.5 | 0.5 | 5 | 2 | 2 | 5 |
| Maximum Background, µg/L | | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | MCL, 600 | No MCL | MCL, 5 | No MCL | No MCL | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 0.0044 a,c | 0.0044 a,c | 2,700 a | 400 | 400 | 0.04 a,c,s | 23,000 a,s | 313,000 s | 2,700 a,s |
| Human Health, µg/L Org Only | 0.049 a,c | 0.049 a,c | 17,000 a | 2,600 | 2,600 | 0.077 a,c,t | 120,000 a,t | 2,900,000 t | 12,000 a,t |
| Other factors | | | | | | | | | |
| Reasonable Potential | I | I | N | N | N | I | N | N | N |

| Constituent, Unit CTR # | 2,4-Dinitro-toluene, µg/L # 82 | 2,6-Dinitro-toluene, µg/L # 83 | Di-n-Octyl Phthalate, µg/L # 84 | 1,2-Diphenyl – hydrazine, µg/L # 85 | Fluoranthene, µg/L # 86 | Fluorene, µg/L # 87 | Hexachloro-benzene, µg/L # 88 | Hexachloro – butadiene, µg/L # 89 | Hexachloro – cyclopentadiene, µg/L # 90 |
|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <5 | <5 | <5 | <1 | <0.05 | <0.1 | <1 | <1 | <1 |
| MEC, µg/L | 5 | 5 | 5 | 1 | 0.05 | 0.1 | 1 | 1 | 1 |
| Maximum Background, µg/L | | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | MCL, 1 | No MCL | MCL, 50 |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 0.11 c,s | None Est. | None Est. | 0.040 a,c,s | 300 a | 1,300 a | 0.00075 a,c | 0.44 a,c,s | 240 a,s |
| Human Health, µg/L Org Only | 9.1 c,t | None Est. | None Est. | 0.54 a,c,t | 370 a | 14,000 a | 0.00077 a,c | 50 a,c,t | 17,000 a,j,t |
| Other factors | | | | | | | | | |
| Reasonable Potential | I | N | N | I | N | N | I | I | N |

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| Constituent, Unit CTR # | Hexachloro–ethane, µg/L # 91 | Indeno (1,2,3-cd) pyrene, µg/L # 92 | Isophorone, µg/L # 93 | Naphthalene, µg/L # 94 | Nitrobenzene, µg/L # 95 | N-Nitrosodimethyl-amine, µg/L # 96 | N-Nitrosodi-n-Propylamine, µg/L # 97 | N-Nitrosodiphenyl-amine, µg/L # 98 |
|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <1 | <0.05 | <1 | <0.2 | <1 | <5 | <5 | <1 |
| MEC, µg/L | 1 | 0.05 | 1 | 0.2 | 1 | 5 | 5 | 1 |
| Maximum Background, µg/L | | | | | | | | |
| Numeric BP Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | | | | | |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. |
| Human Health, µg/L Water +Org Only | 1.9 a,c,s | 0.0044 a,c | 8.4 c,s | None Est. | 17 a,s | 0.00069 a,c,s | 0.005 a | 5.0 a,c,s |
| Human Health, µg/L Org Only | 8.9 a,c,t | 0.049 a,c | 600 c,t | None Est. | 1,900 a,j,t | 8.1 a,c,t | 1.4 a | 16 a,c,t |
| Other factors | | | | | | | | |
| Reasonable Potential | N | I | N | N | N | I | I | N |

| Constituent, Unit CTR # | Phenanthrene, µg/L # 99 | Pyrene, µg/L # 100 | 1,2,4-Trichloro-benzene, µg/L # 101 | Aldrin, µg/L # 102 | α-BHC, µg/L # 103 | β-BHC, µg/L # 104 | γ-BHC (Lindane), µg/L # 105 | δ-BHC, µg/L # 106 | Chlordane, µg/L # 107 | 4,4' DDT, µg/L # 108 |
|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.05 | <0.05 | <0.5 | <0.005 | <0.01 | <0.005 | <0.01 | <0.05 | <0.02 | <0.01 |
| MEC, µg/L | 0.05 | 0.05 | 0.5 | 0.005 | 0.01 | 0.005 | 0.01 | 0.005 | 0.02 | 0.01 |
| Maximum Background, µg/L | | | | | | | | | | |
| Numeric BP Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | MCL 5 | No MCL | No MCL | No MCL | MCL 0.2 | No MCL | MCL 0.1 | No MCL |
| Narrative Basin Plan Objective, µg/L | | | | ND, <0.005 | ND, <0.01 | ND, <0.014 | ND, <0.019 | ND, <0.005 | ND, <0.1 | ND, <0.01 |
| CMC Freshwater, µg/L | None Est. | None Est. | None Est. | 3 g | None Est. | None Est. | 0.95 w | None Est. | 2.4 g | 1.1 g |
| CCC Freshwater, µg/L | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | None Est. | 0.0043 g | 0.001 g |
| Human Health, µg/L Water +Org Only | None established | 960 a | None established | 0.00013 a,c | 0.0039 a,c | 0.014 a,c | 0.019 c | None established | 0.00057 a,c | 0.00059 a,c |
| Human Health, µg/L Org Only | None established | 11,000 a | None established | 0.00014 a,c | 0.013 a,c | 0.046 a,c | 0.063 c | None established | 0.00059 a,c | 0.00059 a,c |
| Other factors | | | | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest |
| Reasonable Potential | N | N | N | I | I | N | N | | I | I |

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| Constituent, Unit CTR # | 4, 4'-DDE, µg/L # 109 | 4,4'-DDD, µg/L # 110 | Dieldrin, µg/L # 111 | alpha-Endo-sulfan, µg/L # 112 | beta-Endo-sulfan, µg/L # 113 | Endosulfan Sulfate, µg/L # 114 | Endrin, µg/L # 115 | Endrin Aldehyde, µg/L # 116 | Heptachlor, µg/L # 117 | Heptachlor Epoxide, µg/L # 118 | PCBs, µg/L # 119-125 | Toxaphene, µg/L # 126 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.1 | <0.5 |
| MEC, µg/L | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.1 | 0.5 |
| Maximum Background, µg/L | | | | | | | | | | | | |
| Numeric BP Objective, µg/L (Site Specific, MCL) | No MCL | No MCL | No MCL | No MCL | No MCL | No MCL | MCL 2 | No MCL | MCL 0.01 | MCL 0.01 | MCL 0.5 | MCL 3 |
| Narrative Basin Plan Objective, µg/L | ND, <0.05 | ND, <0.05 | ND, <0.01 | ND, <0.02 | ND, <0.01 | ND, <0.05 | ND, <0.01 | ND, <0.01 | ND, <0.01 | ND, <0.01 | | |
| CMC Freshwater, µg/L | None Est. | None Est. | 0.24 w | 0.22 g | 0.22 g | None Est. | 0.086 w | None Est. | 0.52 g | 0.52 g | None Est. | 0.73 |
| CCC Freshwater, µg/L | None Est. | None Est. | 0.056 w | 0.056 g | 0.056 g | None Est. | 0.036 w | None Est. | 0.0038 g | 0.0038 g | 0.014u | 0.0002 |
| Human Health, µg/L Water +Org Only | 0.00059 a,c | 0.00083 a,c | 0.00014 a,c | 110 a | 110 a | 110 a | 0.76 a | 0.76 a | 0.00021 a,c | 0.00010 a,c | 0.00017c,v | 0.00073a,c |
| Human Health, µg/L Org Only | 0.00059 a,c | 0.00084 a,c | 0.00014 a,c | 240 a | 240 a | 240 a | 0.81 a,j | 0.81 a,j | 0.00021 a,c | 0.00011 a,c | 0.00017c,v | 0.00075a,c |
| Other factors | | | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | 303d/OCPest | | |
| Reasonable Potential | I | I | I | N | N | N | N | N | I | I | I | I |

Notes: Footnotes, abbreviations, and other notations from Final Rule, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, 40 CFR Part 131, FR/Vol. 65, No. 97, May 18, 2000/Rules and Regulations.
**LEC**= Lowest Effluent concentration; **MEC**= Maximum effluent concentration. **(based on last 3 years of data- Dec 2004-Nov 2007).**

**Reasonable Potential: (Y)** when MEC>most stringent criterion or Max Background concentration >most stringent criterion (and the pollutant is detected in the effluent).

**Reasonable Potential: (I)** when there is no available/adequate effluent and background data.

**Reasonable Potential: (N)** when both MEC and Max Background concentration < most stringent criterion.

## REASONABLE POTENTIAL ANALYSIS-FOR OTHER POLLUTANTS OF CONCERN

| Constituent, Unit | Aluminum, µg/L | Ammonia as N, mg/L | Barium, µg/L | Boron, µg/L | Chloride, mg/L | Electrical Conductivity, µmhos/cm | Fluoride, µg/L | Iron, µg/L | Mn, µg/L | Nitrate as N, mg/L | Nitrite as N, mg/L | Sodium, mg/L | Sulfate, mg/L | TDS, mg/L | Tributyltin, µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | 20 | 0.2 | 10 | 390 | 86 | 886 | 600 | 80 | 4 | 7.8 | <0.03 | 100 | 66 | 528 | <0.0046 |
| MEC, µg/L | 50 | 0.4 | 32 | 510 | 122 | 1340 | 900 | 270 | 19 | 27 | 0.05 | 138 | 101 | 690 | 0.05 |
| Average Background, µg/L | | | | | | | | | | 2.0 | | | | | |
| Maximum Background, µg/L | | | | | | | | | | 6.4 | | | | | |
| Numeric Basin Plan Objective, µg/L (site specific, MCL) | MCL 200 | No MCL | MCL 1000 S-Spec 100 | No MCL | MCL 250 S-Spec 250 | MCL 900 | MCL 1000 | MCL 300 S-Spec 300 | MCL 50 S-Spec 50 | MCL 10 | MCL 1 | No MCL | MCL 250 | MCL 500 | No MCL |
| Narrative Basin Plan Objective, µg/L | USEPA 87 CCC 750 CMC | *USEPA 0.59 CCC 2.14 CMC | | Ag WQ Goal 700 | | Ag WQ Goal 700 | Ag WQ Rome Paper 1,000 | | | | | | | Ag WQ goal 450 | USEPA 0.072 CCC 0.46 CMC |
| Other factors (303d listing, bioaccum) | | | | | | 303d list | | | | | | | | | |
| Reasonable Potential | N | Y* | N | N | Y | Y | N | N | N | Y | N | N | N | Y | N |

| Constituent, Unit | Alachlor, µg/L | Atrazine, µg/L | Bentazon, µg/L | Carbofuran, µg/L | Chlorpyrifos, µg/L | Cis-1,2-dichloro-ethene, µg/L | Dalapon, µg/L | Di(2-ethylhexyl) adipate, µg/L | Diazinon, µg/L | 1,2-Dibromo-3-chloro-propane (DBCP µg/L | Dinoseb, µg/L | Diquat, µg/L | Endothal, µg/L | Ethylene Dibromide, µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | <0.3 | <0.1 | <2 | <5 | <0.05 | <0.5 | <10 | <3 | <0.05 | <0.01 | <2 | <4 | <45 | <0.02 |
| MEC, µg/L | <1 | <1 | <2 | <5 | 0.05 | <0.5 | <10 | <3 | 0.05 | <0.01 | <2 | <4 | <45 | <0.02 |
| Average Background, µg/L | | | | | | | | | | | | | | |
| Maximum Background, µg/L | | | | | | | | | | | | | | |
| Numeric BP Objective, µg/L (site specific, MCL) | MCL 2 | MCL 1 | MCL 18 | MCL 18 | No MCL | MCL 6 | MCL 200 | MCL 400 | No MCL | MCL 0.2 | MCL 7 | MCL 20 | MCL 100 | MCL 0.05 |
| Narrative Basin Plan Objective, µg/L | | | | | USEPA 0.041 CCC 0.083 CMC | | | | USEPA 0.17 CCC 0.17 CMC | | | | | |
| Other factors (303d list, bioaccum) | | | | | 303d list | | | | 303d list | | | | | |
| Reasonable Potential | N | N | N | N | N | N | N | N | N | N | N | N | N | N |

## REASONABLE POTENTIAL ANALYSIS FOR OTHER POLLUTANTS OF CONCERN

| Constituent, Unit | Foaming Agents (MBAS), µg/L | Glyphosate, µg/L | Methoxy-chlor, µg/L | Methyl-tert-butyl ether (MTBE), µg/L | Molinate (Ordram), µg/L | Oxamyl, µg/L | Picloram, µg/L | Simazine, µg/L | Styrene, µg/L | Trichloro-fluoro methane, µg/L | 1,1,2-Trichloro-1,2,2-Trifluor-ethane, µg/L | 2,4,5-TP (Silvex), µg/L | 2,4-D, µg/L | Thiobencarb, µg/L | Xylenes, µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEC, µg/L | 50 | | | <0.5 | | | | | | | | | | | |
| MEC, µg/L | 110 | | | 0.9 | | | | | | | | | | | |
| Average Background, µg/L | | | | | | | | | | | | | | | |
| Maximum Background, µg/L | | | | | | | | | | | | | | | |
| Numeric Basin Plan Objective, µg/L (site specific, MCL) | MCL 500 | MCL 700 | MCL 30 | MCL 5 | MCL 20 | MCL 50 | MCL 500 | MCL 4 | MCL 100 | MCL 150 | MCL 1200 | MCL 50 | MCL 70 | MCL 1 | MCL 1750 |
| Narrative Basin Plan Objective, µg/L | | | | | | | | | | | | | | | |
| Other factors (303d list, bioaccumulative) | | | | | | | | | | | | | | | |
| Reasonable Potential | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |

**LEC**= Lowest Effluent concentration; **MEC**= Maximum effluent concentration. **(based on last 3 years of data (Dec 2004-Nov 2007)**

**Ammonia's USEPA criteria based on a maximum effluent pH of 8.5 and a monthly average effluent temperature of 24 $^{0}$C.**

**Reasonable Potential: (Y)** when MEC or projected MEC>most stringent criterion.

**Reasonable Potential: (I)** when there is no available/adequate effluent data.

**Reasonable Potential: (N)** when MEC and projected MEC < most stringent criterion

Highlighted data is from 2002 because no other data is available

* - Ammonia does not show reasonable potential, however, since ammonia is in raw wastewater a limit is required to keep the WWTP nitrifying.

# Attachment H - Constituents to be monitored

| CTR # | Constituent | CAS Number | Controlling Water Quality Criterion for Surface Waters: Basis | Criterion Concentration (ug/L or noted) (1) | Criterion Quantitation Limit (ug/L or noted) | Suggested Test Methods |
|---|---|---|---|---|---|---|
| VOLATILE ORGANICS | | | | | | |
| 28 | 1,1-Dichloroethane | 75343 | Primary MCL | 5 | 0.5 | EPA 8260B |
| 30 | 1,1-Dichloroethene | 75354 | National Toxics Rule | 0.057 | 0.5 | EPA 8260B |
| 41 | 1,1,1-Trichloroethane | 71556 | Primary MCL | 200 | 0.5 | EPA 8260B |
| 42 | 1,1,2-Trichloroethane | 79005 | National Toxics Rule | 0.6 | 0.5 | EPA 8260B |
| 37 | 1,1,2,2-Tetrachloroethane | 79345 | National Toxics Rule | 0.17 | 0.5 | EPA 8260B |
| 75 | 1,2-Dichlorobenzene | 95501 | Taste & Odor | 10 | 0.5 | EPA 8260B |
| 29 | 1,2-Dichloroethane | 107062 | National Toxics Rule | 0.38 | 0.5 | EPA 8260B |
| | cis-1,2-Dichloroethene | 156592 | Primary MCL | 6 | 0.5 | EPA 8260B |
| 31 | 1,2-Dichloropropane | 78875 | Calif. Toxics Rule | 0.52 | 0.5 | EPA 8260B |
| 101 | 1,2,4-Trichlorobenzene | 120821 | Public Health Goal | 5 | 0.5 | EPA 8260B |
| 76 | 1,3-Dichlorobenzene | 541731 | Taste & Odor | 10 | 0.5 | EPA 8260B |
| 32 | 1,3-Dichloropropene | 542756 | Primary MCL | 0.5 | 0.5 | EPA 8260B |
| 77 | 1,4-Dichlorobenzene | 106467 | Primary MCL | 5 | 0.5 | EPA 8260B |
| 17 | Acrolein | 107028 | Aquatic Toxicity | 21 | 2 | EPA 8260B |
| 18 | Acrylonitrile | 107131 | National Toxics Rule | 0.059 | 2 | EPA 8260B |
| 19 | Benzene | 71432 | Primary MCL | 1 | 0.5 | EPA 8260B |
| 20 | Bromoform | 75252 | Calif. Toxics Rule | 4.3 | 0.5 | EPA 8260B |
| 34 | Bromomethane | 74839 | Calif. Toxics Rule | 48 | 1 | EPA 8260B |
| 21 | Carbon tetrachloride | 56235 | National Toxics Rule | 0.25 | 0.5 | EPA 8260B |
| 22 | Chlorobenzene (mono chlorobenzene) | 108907 | Taste & Odor | 50 | 0.5 | EPA 8260B |
| 24 | Chloroethane | 75003 | Taste & Odor | 16 | 0.5 | EPA 8260B |
| 25 | 2- Chloroethyl vinyl ether | 110758 | Aquatic Toxicity | 122 (3) | 1 | EPA 8260B |
| 26 | Chloroform | 67663 | OEHHA Cancer Risk | 1.1 | 0.5 | EPA 8260B |
| 35 | Chloromethane | 74873 | USEPA Health Advisory | 3 | 0.5 | EPA 8260B |
| 23 | Dibromochloromethane | 124481 | Calif. Toxics Rule | 0.41 | 0.5 | EPA 8260B |
| 27 | Dichlorobromomethane | 75274 | Calif. Toxics Rule | 0.56 | 0.5 | EPA 8260B |
| 36 | Dichloromethane | 75092 | Calif. Toxics Rule | 4.7 | 0.5 | EPA 8260B |
| 33 | Ethylbenzene | 100414 | Taste & Odor | 29 | 0.5 | EPA 8260B |
| 88 | Hexachlorobenzene | 118741 | Calif. Toxics Rule | 0.00075 | 1 | EPA 8260B |
| 89 | Hexachlorobutadiene | 87683 | National Toxics Rule | 0.44 | 1 | EPA 8260B |
| 91 | Hexachloroethane | 67721 | National Toxics Rule | 1.9 | 1 | EPA 8260B |
| 94 | Naphthalene | 91203 | USEPA IRIS | 14 | 10 | EPA 8260B |
| 38 | Tetrachloroethene | 127184 | National Toxics Rule | 0.8 | 0.5 | EPA 8260B |
| 39 | Toluene | 108883 | Taste & Odor | 42 | 0.5 | EPA 8260B |
| 40 | trans-1,2-Dichloroethylene | 156605 | Primary MCL | 10 | 0.5 | EPA 8260B |
| 43 | Trichloroethene | 79016 | National Toxics Rule | 2.7 | 0.5 | EPA 8260B |
| 44 | Vinyl chloride | 75014 | Primary MCL | 0.5 | 0.5 | EPA 8260B |
| | Methyl-tert-butyl ether (MTBE) | 1634044 | Secondary MCL | 5 | 0.5 | EPA 8260B |
| | Trichlorofluoromethane | 75694 | Primary MCL | 150 | 5 | EPA 8260B |
| | 1,1,2-Trichloro-1,2,2-Trifluoroethane | 76131 | Primary MCL | 1200 | 10 | EPA 8260B |
| | Styrene | 100425 | Taste & Odor | 11 | 0.5 | EPA 8260B |
| | Xylenes | 1330207 | Taste & Odor | 17 | 0.5 | EPA 8260B |