California Regional Water Quality Control Board
North Coast Region
Geoffrey M. Hales, Chairman

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Linda S. Adams
Acting Secretary for Environmental Protection

Edmund G. Brown, Jr.
Governor

February 1, 2011

Mr. Craig Scott
Town of Windsor
P.O. Box 100
Windsor, CA 95492-0100

RECEIVED
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TOWN OF WINDSOR

Dear Mr. Scott:

Subject: Adopted Order No. R1-2011-0006 Modifying Waste Discharge Requirements Order R1-2007-0013, NPDES Permit No. CA0023345

File: Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility, WDID No. 1B82037OSON

On January 27, 2011, the Regional Water Board adopted Order No. R1-2011-0006 Modifying Waste Discharge Requirements Order No. R1-2007-0013 for the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility, as proposed. Enclosed are copies of Order No. R1-2011-0006 and Order No. R1-2007-0013 (Modified in accordance with Order No. R1-2011-0006 on January 27, 2011) for your records.

Additional copies of the Orders can be obtained from the Regional Water Board office or from the Regional Water Board website at: http://water100.waterboards.ca.gov/rb1/adopted_orders/index.asp.

Please contact Cathy Goodwin of the Regional Water Board staff at (707) 576-2687 or cgoodwin@waterboards.ca.gov , if you have any questions.

Sincerely,

Catherine Kuhlman

Catherine Kuhlman
Executive Officer

110201_CAG_Windsor_PermitModification_Transmittal_Adopted

Return Receipt Requested

Enclosures:

1. Order No. R1-2011-0006
2. Order No. R1-2007-0013 (Modified in accordance with Order No. R1-2011-0006 on January 27, 2011)

Ecc (with email attachments):

Amelia Whitson, U.S. EPA, Region 9, CWA Standards and Permits Office (WTR-5)
75 Hawthorne Street, San Francisco, CA 94105;
Whitson.Amelia@epamail.epa.gov

Cc (without attachments):

Mr. Richard Burtt, Town of Windsor, P.O. Box 100, Windsor, CA 95492-0100

Mr. Don McEnhill, Russian River Keeper, P.O. Box 1335, Healdsburg, CA 95448

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Arnold
Schwarzenegger
Governor

ORDER NO. R1-2011-0006
NPDES PERMIT NO. CA0023345

MODIFICATIONS OF ORDER NO. R1-2007-0013

FOR

TOWN OF WINDSOR WASTEWATER TREATMENT, RECLAMATION AND DISPOSAL SYSTEM

The California Regional Water Quality Control Board, North Coast Region, hereinafter referred to as the Regional Water Board, finds that:

1. The Town of Windsor (hereinafter Discharger) is currently discharging treated wastewater from the Town of Windsor Treatment, Reclamation and Disposal System (hereinafter WWTF) under Order No. R1-2007-0013 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0023345, adopted on June 14, 2007 (hereinafter Permit). The Permit will expire on August 12, 2012.

2 The WWTF provides tertiary treatment and ultraviolet light disinfection and has an average dry-weather design capacity of 2.25 million gallons per day (mgd). The Permit includes two authorized discharge methods: discharge to Mark West Creek at the Trenton-Healdsburg bridge at no more than one-percent of the flow of the receiving water during the period of October 1 through May 14 and delivery to the Discharger's reclamation system for urban and agricultural irrigation during the period of May 15 through September 30 and other times of the year when weather conditions allow reclamation to occur in compliance with Permit requirements.

3. The Discharger has requested that the Regional Water Board make the following modifications to the existing Permit:

   a. Modification of final copper effluent limitations for discharges to Mark West Creek based on the Discharger's development of a discharger-specific water effect ratio (WER), as allowed by Provision VI.C.7 of the Discharger's Permit. The Discharger's request is to reevaluate reasonable potential for copper based on inclusion of the discharger-specific WER and use of effluent hardness, and if necessary to derive final copper effluent limitations utilizing the WER and effluent hardness.

b. Modification of the Permit to add the Geysers Project as a new permitted discharge to the Geysers pipeline operated by the City of Santa Rosa, with an initial average daily flow capacity of 0.53 mgd and the ability to increase to 0.75 mgd; and

c. Addition of new tables 9a and 9b to the Permit to reflect the reliability and increased disposal capacity that the Geysers Project provides. Accordingly, the Discharger requests that the permitted capacity of the Town's WWTF be increased from 1.6 mgd to 1.9 mgd.

4. The request for modification of final copper effluent limitations and supporting documentation is included in the following documents submitted by the Discharger:

a. October 2009 report titled *Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility Copper Water-Effect Ratio Study* submitted on October 28, 2009.

b. January 4, 2010, memorandum titled *Technical Basis for Implementation of a Discharger-specific Copper WER* prepared by the Discharger's consultant; and

c. July 21, 2010 letter and Report of Waste Discharge submitted by Craig Scott, Town of Windsor, Reference: Amendment to Order No. R1-2007-0013/NPDES No. CA0023345.

5. The request for modification of the Permit to add the Geysers Project as a new permitted discharge and associated changes to Table 9 of the Permit and authorization for increased capacity and supporting documentation are included in the following documents submitted by the Discharger:

a. February 11, 2009 letter to the Regional Water Board Executive Officer stating the Town's intent to move forward with the Geysers Recharge Connection Project.

b. October 15, 2009 Draft Technical Memorandum prepared by RMC Water and Environment; and

c. July 21, 2010 letter and Report of Waste Discharge submitted by Craig Scott, Town of Windsor, Reference: Amendment to Order No. R1-2007-0013/NPDES No. CA0023345, which also includes a July 14, 2010 Memorandum prepared by RMC Water and Environment describing the technical basis for modifying the Permit to include the Geysers Project discharge and associated increase in permitted capacity.

6. The Regional Water Board has reviewed the Permit modification requests and finds that the Discharger's proposed requests for modification are appropriate.

7. The Permit establishes final effluent limitations for copper in accordance with the California Toxics Rule and procedures established in the State Water Board *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP). Section 1.2 of the SIP allows the Regional Water Board to adjust the criteria/objective for metals with discharger-specific Water Effect Ratios (WER) established in accordance with U.S. EPA guidance as described in *Interim Guidance on Determination and Use of Water Effect Ratios for Metals* (EPA-823-B-94-001) or *Streamlined Water Effect Ratio Procedure for Discharges of Copper* (EPA-822-R-01-005) (Streamlined Procedure). These guidance documents identify procedures to determine site-specific values for a WER, a criteria adjustment factor accounting for the effect of site-specific water characteristics on pollutant bioavailability and toxicity to aquatic life.

8. A 2006 Study[1] demonstrates that for certain hardness-dependent metals, including copper, any mixture of receiving water that is compliant with water quality objectives for that metal and effluent that is compliant with water quality objectives for that metal, will always result in compliance with water quality objectives. The 2006 Study also demonstrates that it is always protective to determine reasonable potential, and calculate effluent limitations, if needed, based on effluent hardness. The Regional Water Board finds that the methodology presented in the 2006 Study is appropriate to apply to the reasonable potential analysis and calculation of effluent limitations, if needed, for the Discharger.

9. During the term of the Permit the Discharger conducted an individual WER study to determine the site-specific toxicity of copper in the receiving water at the point of discharge. The study concluded that a site-specific WER of 3.42 for total recoverable copper and 3.24 for dissolved copper apply to the discharge. The Regional Water Board evaluated the results of the study and determines that (1) the results of the study are within the expected range for a WER for a municipal wastewater discharge; (2) the study was conducted in accordance with applicable USEPA guidance established in the Streamlined Procedure; and (3) the results of the study are supported by data that generated scientifically defensible results. Based on this new information, effluent copper concentrations no longer demonstrate reasonable potential to exceed water quality criteria for copper.

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[1] Emerick, R.W.; Booroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.

10. The Permit establishes limitations on the amount of treatment capacity that the Discharger is authorized to utilize based on the fact that the Discharger's reclamation/disposal system has a rated capacity of 1.6 mgd. The Permit contains a table (Table 9) that identifies the amount of storage capacity and irrigation area that the Discharger must have in order to receive authorization from the Regional Water Board Executive Officer to increase its use of treatment capacity.

11. The Discharger's July 14, 2010 Memorandum demonstrates that additional equivalent storage capacity will be gained through the establishment of a new discharge point to the Geysers Project and that an increase in WWTF treatment capacity from 1.6 to 1.9 mgd is reasonable and defensible.

12. Provision VI.A.2.c of Order No. R1-2007-0013 requires the Discharger to file a petition with the State Water Board, Division of Water Rights prior to making any change in the point of discharge, place of use, or purpose or use of treated wastewater that results in a decrease of flow in any portion of a watercourse and receive approval for such a change in accordance with California Water Code section 1211. The Discharger filed with the State Water Board, Division of Water Rights a wastewater change petition to add the Geysers Recharge Project as a place of use and geothermal power generation as an additional purpose of use of the Discharger's treated wastewater that could result in decreased flow to Mark West Creek. On November 10, 2010, the State Water Board Division of Water Rights filed a Notice of Determination approving the Discharger's request.

13. Conditions that support a modification of an NPDES permit are described in 40 CFR 122.62 and include circumstances where new information that was not available at the time of permit issuance would have justified different permit conditions at the time of issuance. Since the Permit was adopted, the Discharger has performed a study, in accordance with USEPA procedures, to determine a site-specific WER for the WWTF, providing new information that was not available at the time of Permit issuance. As explained herein, this new information would have justified new permit conditions at the time of issuance because, with the application of the WER, there is no reasonable potential for toxicity to organisms from copper in the effluent. Accordingly, at the time of Permit issuance, no effluent limitations for copper would have been included in Order No. R1-2007-0013.

14. Provision VI.C.1.e of the Permit includes a reopener provision that allows the Regional Water Board to reopen the Permit and make modifications in accordance with 40 CFR Section 122.62, if a water effect ratio, mixing zone or other water quality study provides new information and a basis for determining that a permit condition or conditions should be modified.

15. This Order, which modifies Order No. R1-2007-0013 to remove copper effluent limitations for copper is consistent with antibacksliding requirements set forth in 40 CFR section 122.44. Effluent limitations for copper have been removed from the Permit based upon site-specific conditions at the Discharger's facility. The new information provided by the Discharger demonstrates that based upon the relative bioavailability of copper to aquatic organisms; there is no reasonable potential for toxicity to those organisms from copper at concentrations detected in the effluent. Therefore, the protection afforded under the modified permit results in a level of protection for beneficial uses equal to the previous conditions of Order No. R1-2007-0013. Additionally, this Order is consistent with section 303 (d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the anti-degradation policy is addressed in Finding 16.

16. The antidegradation policy provides that the lowering of water quality can be allowed only if beneficial uses are protected, and if there is a maximum benefit to the people of the state. While the removal of the effluent limits may result in a slight increase in the amount of copper discharged to the water body when compared with the amount that would be discharged in compliance with the effluent limitations in the Permit prior to this modification, the removal of effluent limitations is predicated on a finding that there is no reasonable potential for toxicity to organisms from copper in the effluent. Accordingly, this action will result in no less protection of beneficial uses and will maintain water quality. In addition, the Discharger has evaluated potential sources in an effort to further reduce copper concentrations in the effluent.

    Furthermore, discharges regulated in accordance with this Order are for a publicly owned treatment works (POTW). The significant increase in costs for additional treatment that would be required to remove low levels of copper are not in the best interest of the public given that beneficial uses are already shown to be protected and because any resources available for water quality improvements should be used for nonattainment waters or other pressing water quality issues as opposed to treating effluent beyond what is required for protecting beneficial uses.

    The activities allowed in accordance with these modifications to the waste discharge requirements apply to existing facilities. Discharges from the WWTF will be required to maintain protection of the beneficial uses of the receiving water and comply with applicable provisions of the Basin Plan.

17. The State Water Board amended the SIP in 2005 to allow WERs to be established through the normal NPDES permit modification processes, rather than through the

Basin Planning process. The procedures followed to develop the copper WER identified in this Order are consistent with the amended SIP requirements and consideration of California Water Code section 13241 factors and compliance with the California Environmental Quality Act (CEQA) is not required. Under Water Code section 13389, this action to modify an existing NPDES permit is exempt from the provisions of Chapter 3 of CEQA.

The Geysers Project was previously evaluated in the Discharger's October 2000 Environmental Impact Report (EIR) for the *Town of Windsor Water Reclamation Master Plan for Treatment, Storage, and Disposal* and October 2008 *Initial Study/Addendum for the Geysers Recharge Pipeline Connection Project.* The Discharger, acting as lead agency, certified the EIR and Addendum on February 7, 2001 and November 5, 2008, respectively. As a responsible agency, the Regional Water Board is required to consider an EIR adopted by the lead agency for a project in determining whether to approve the project. A responsible agency has responsibility for mitigating and avoiding only the direct and indirect environmental effects of those parts of the project which it decides to carry out, finance, or approve. To this end, the responsible agency must make findings as required by CEQA Guidelines section 15091 and, if necessary, section 15093 for each and every significant impact of the project. The Regional Water Board has independently considered those sections of the EIR and Addendum relating to the Geysers Project's impacts on water quality and finds that, based on the mitigation measures identified in the EIR and Addendum and contained in the Permit, all impacts to water quality directly or indirectly related to the Geysers Project will be reduced to less than significant levels and beneficial uses will be protected.

18. Pursuant to 40 CFR Sections 124.5(c)(2) and 122.62, only those conditions to be modified by this amendment shall be reopened with this amendment. All other aspects of the existing Permit shall remain in effect and are not subject to modification by this amendment.

19. The Staff Report for this Order (Attachment 1) includes additional explanatory information in support of this Permit modification and is incorporated as part of this Order.

20. The Discharger and interested agencies and persons have been notified of the Regional Water Board's intent to modify waste discharge requirements for the existing discharge and have been provided opportunities for public meetings and to submit their written views and recommendations. Notification was provided through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Press Democrat on November 15, 2010.

21. On January 27, 2011, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding modification of Order No. R1-2007-0013.

IT IS HEREBY ORDERED that the Discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act as amended, shall comply with the following revisions identified in underline and strikeout format to indicate language to be added to and deleted from Order No. R1-2007-0013:

A. Modification of Final Copper Effluent Limitations

1. Order Section IV.A.3.b, Table 8, Footnote 4, Effluent Limitations and Discharge Specifications, Effluent Limitations, Final Effluent Limitations – Discharge Point 002, Effluent Limitations for Protection of Aquatic Life is amended as follows:

   No final effluent limitations for protection of aquatic life are required, based on a determination of no reasonable potential as presented in Fact Sheet section IV.C.3.b.

   Footnote 4: Effluent limitations for copper are for the total recoverable metal fraction and are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled.

2. Attachment E – Monitoring and Reporting Program (September 20, 2007 Revision) Section IV.B, Effluent Monitoring Requirements, Monitoring Location EFF-002 is amended to include effluent monitoring for hardness as follows:

Table E-4. Effluent Monitoring for Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
BOD (20° C, 5-day)	mg/L	Grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods
Hydrogen Ion	pH units	Grab	Daily	Standard Methods
Dissolved Oxygen	mg/L	Grab	Daily	Standard Methods
Chlorine Residual	mg/L	Grab	Daily	Standard Methods
Temperature	° C	Grab	Daily	Standard Methods
Ammonia Nitrogen	mg/L	Grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	Calculation
Nitrate Nitrogen	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	Grab	Monthly	Standard Methods

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Total Phosphorus	mg/L	Grab	Monthly	Standard Methods
Acute Toxicity Bioassay	Percent survival	Grab	Monthly	*See Section V.A*
Chronic Toxicity Bioassay	TUc	Grab	2x/year	*See Section V.B*
Hardness	mg/L	Grab	Monthly, concurrent with copper	Standard Methods
Copper	ug/L	Grab	Monthly	USEPA Method 200.8 (2 ug/L)
Priority Pollutants [2]	ug/L	Grab	1x/year	40 CFR 136
Flow	mgd	Continuous	Daily	Meter
Dilution Rate	% of stream flow	Calculation	Daily	---

3. Remove Attachment E-1 Hardness-Dependent Effluent Limitations for Copper from Order No. R1-2007-0013.

4. Fact Sheet Section III.C.3, Applicable Plans, Policies, and Regulations, State and Federal Regulations, Policies, an Plans, State Implementation Policy is amended to add the following paragraph:

   Section 1.2 of the SIP allows the Regional Water Board to adjust the criteria/objective for metals with discharger-specific Water Effect Ratios (WER) established in accordance with U.S. EPA guidance – Interim Guidance on Determination and Use of Water Effect Ratios for Metals (EPA-823-B-94-001) or Streamlined Water-Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005) (Streamlined Procedure). The Streamlined Procedure determines site-specific values for a WER, a criteria adjustment factor accounting for the effect of site-specific water characteristics on pollutant bioavailability and toxicity to aquatic life.

5. Fact Sheet section III.C.6. Applicable Plans, Policies, and Regulations, State and Federal Regulations, Policies, and Plans, Anti-Backsliding Requirements is amended to add the following paragraph:

   The protection afforded under the modified permit results in a level of protection for beneficial uses equal to the previous conditions of Order No. R1-2007-0013. Additionally, this Order is consistent with section 303 (d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with

the antidegradation policy. Consistency with the anti-degradation policy is addressed below.

6. Fact Sheet Section IV.C.2.c, Rationale for Effluent Limitations and Discharge Specifications, Water Quality-Based Effluent Limitations (WQBELs), Applicable Beneficial Uses and Water Quality Criteria and Objectives, State Implementation Policy (SIP), CTR and NTR is amended as follows:

Table F-7. Applicable Water Quality Criteria and Objectives for Priority Pollutants Reported in Detectable Concentrations in Windsor's Effluent

CTR No.	Constituent	Lowest Applicable Criteria	Basin Plan Water Quality Objectives (from CCR Title 22, Division 4)	CTR/NTR Water Quality Criteria		
				Freshwater		Human Health for Consumption of
				Acute	Chronic	Water and Organisms
		µg/L	ug/L	µg/L	µg/L	µg/L
6	Copper [ba]	39.92	---	61.30	39.92	1300

Footnote a: Water Quality Criteria for hardness-based metals (except copper) are based on the lowest detected hardness concentration of 110 mg/l and have been converted to total recoverable metal fraction using the conversion factors in the CTR.

Footnote b: Water Quality Criteria for copper is based on the lowest detected effluent hardness concentration of 130 mg/L and has been converted to total recoverable copper fraction using conversion factors in the CTR and a discharger-specific Water Effect Ratio (WER) of 3.42. See discussion in Fact Sheet Section IV.C.3.b regarding the meaning and development of the WER.

7. Fact Sheet Section IV.C.3.b, Rationale for Effluent Limitations and Discharge Specifications, Water Quality-Based Effluent Limitations (WQBELs), Determining the Need for WQBELs, Priority Pollutants is amended as follows:

Modify first paragraph to add the following sentence at the end of the paragraph:

The copper RPA is also based on additional effluent and receiving water data collected by the Discharger between December 2007 and April 2010.

Modify second paragraph as follows:

Some freshwater water quality criteria for metals are hardness dependent; i.e., as hardness decreases, the toxicity of certain metals increases, and the applicable water quality criteria become correspondingly more stringent. For this RPA, Regional Water Board staff has used a receiving water hardness concentration of 110 mg/L $CaCO_3$, based on receiving water data submitted by the Discharger for all of the hardness-based metals except copper. This Order was modified on January 27, 2011 to revise the copper effluent limitations based on new information as further described in subsequent paragraphs in this section. For copper, staff used an effluent hardness concentration of 130 mg/L based on additional hardness data submitted by the Discharger during the term of this Order. This additional hardness data was collected in conjunction with effluent monitoring for copper as required under this Order. Seventeen additional receiving water hardness samples, collected upstream and downstream of the Facility's discharge point between December 2007 and April 2010 showed hardness concentrations between 50 and 175 mg/L.

Add New Paragraphs 3 through 17 as follows:

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

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. Effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones (See 40 CFR 131.38(c)(4)(i)). The CTR does not define whether the term "ambient", as applied in the regulations, necessarily requires the consideration of the upstream as opposed to downstream hardness conditions.

State Water Board Order No. WQO-2008-0008 (City of Davis) further interpreted the SIP by stating "*...the regional water boards have considerable discretion in the selection of hardness. Regardless of which method is used for determining hardness, the selection must be protective of water quality criteria, given the flow*

conditions under which a particular hardness exists....Regardless of the hardness used, the resulting limits must always be protective of water quality under all flow conditions."

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria. A 2006 Study (*Emerick, R.W.; Booroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.*) demonstrates that using the lowest recorded receiving water hardness for establishing water quality criteria is not always protective of the receiving water under various mixing conditions (e.g., when the effluent hardness is less than the receiving water hardness). The 2006 Study demonstrates that for certain hardness-dependent metals, including copper, any mixture of receiving water that is compliant with water quality objectives for that metal and effluent that is compliant with water quality objectives for that metal, will always result in compliance with water quality objectives. The 2006 Study also demonstrates that it is always protective to determine reasonable potential, and calculate effluent limitations, if needed, based on effluent hardness.

The 2006 study evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

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

Where:

WER = the discharger-specific water effect ratio
H = Hardness
b = metal- and criterion-specific constant
m = metal- and criterion-specific constant

The constants "m" and "b" are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The relationship between hardness and the resulting criterion in Equation 1 can exhibit either a downward –facing (i.e., concave downward) or an upward-facing

(i.e., concave upward) curve depending on the values of the criterion-specific constants. The curve shapes for acute and chronic criteria for the metals are as follows:

Concave Downward: cadmium (chronic), chromium (III), copper, nickel, zinc. The finding of the 2006 Study with regard to concave downward metals will be discussed further, since copper is being re-evaluated for reasonable potential.

Concave Upward: cadmium (acute), lead, and silver (acute). The findings of the 2006 Study with regard to concave upward metals will not be discussed at this, as no concave upward metals are being evaluated at this time.

For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness, use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. Use of the lowest recorded effluent hardness is also protective under all possible mixing conditions between the effluent and the receiving water (i.e., from high dilution to no dilution).

Because this Order requires compliance with effluent limitations at the end of the discharge pipe, effluent hardness is an appropriate and protective hardness to use in adjusting the water quality criteria for the concave downward metal, copper, which is the subject of this January 27, 2011 Permit modification. The reasonable worst-case ambient hardness can be estimated by using the lowest effluent hardness. The water quality criteria for copper was calculated for this Order using Equation 1 and a reported minimum effluent hardness of 130 mg/L as $CaCO_3$, based on 13 samples obtained by the Discharger.

Water Effect Ratio (WER) Study
The water quality objective for copper specified in the California Toxics Rule for inland surface waters is in the form of an equation that includes a site-specific WER multiplier factor. The WER reflects any effect that local site water constituents have on increasing or decreasing the bioavailability and toxicity of copper. Application of the WER multiplier, where available, allows for site-specific adjustment of the copper objective. In turn, the copper objective becomes the basis for developing appropriate effluent limitations. In the absence of a site-specific WER multiplier, the CTR uses a default value of one. Order No. R1-2007-0013 established final copper effluent limitations based on the CTR objective assuming a WER multiplier of one, since no site-specific data were available to justify a different multiplier.

The Discharger proposed to conduct a WER study to develop a site-specific copper multiplier for the discharge in accordance with guidance established by USEPA in a document titled Streamlined Water Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005). Order No. R1-2007-0013 required the discharger to submit a WER study workplan by May 1, 2008 and to complete the WER study and submit study results by November 1, 2009 for Executive Officer approval.

The Discharger submitted the WER study workplan on April 30, 2008 and the WER study results on October 28, 2009 (report titled *Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility Copper Water-Effect Ratio Study*). Regional Water Board staff has reviewed the WER study report and has determined that the WER test results were developed in accordance with the methodology in EPA's guidance document.

The WER study resulted in the development of a WER for total recoverable copper in the receiving waters affected by Windsor's discharge of 3.42 and a WER for dissolved copper in the receiving water affected by Windsor's discharge of 3.24. Accordingly, Regional Water Board staff conducted a reasonable potential analysis of Windsor's discharge, utilizing the total recoverable WER of 3.42 (see Fact Sheet section IV.C.3.b.i, below). The WER study results have been used in the reasonable potential analysis (RPA) for copper in section i. below. Based on the results of the RPA, effluent limitations for copper are not necessary.

Reasonable Potential Determination

Table F-8. Summary of Reasonable Potential Analysis for Windsor WWTF

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Max Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
6	Copper (H= 130 mg/l)	39.92	22	19	No	MEC<C and B<C	Monitoring recommended

Reasonable Potential Analysis: The following section summarizes additional details regarding the data used for the RPA for copper to justify the removal of copper effluent limitations. A discussion of the sampling results for mercury, chlorodibromomethane and dichlorobromomethane are included in this section to justify why effluent limitations and monitoring are not needed for these priority pollutants. A discussion of the sampling results for Bis(2-Ethylhexyl) Pthalate is included to justify the need for additional sampling.

8. Fact Sheet Section IV.C.3.b.i., Rationale for Effluent Limitations and Discharge Specifications, Water Quality-Based Effluent Limitations (WQBELs), Determining the Need for WQBELs, Priority Pollutants, Copper is amended as follows:

   The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to calculate total recoverable criteria. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. As discussed in section IV.C.3.b of this Fact Sheet, the applicable WER value for total recoverable copper is 3.42. Using the worst-case measured hardness in the effluent (130 mg/L) to represent zero-dilution conditions (end of pipe compliance), as discussed in section IV.C.3.b of this Fact Sheet, the default conversion factor (0.96) and the constants m = 0.8545 and b = -1.702 from the CTR, the total recoverable copper WER of 3.42, in Equation 1 above, the applicable chronic criterion (maximum 4-day average concentration) is 39.92 ug/L and the applicable acute criterion (maximum 1-hour average concentration is 61.30 ug/L, as total recoverable concentrations

   Effluent monitoring data submitted by the Discharger showed concentrations of total recoverable copper ranging from <0.7 µg/L to 22 µg/L in nineteen samples. The MEC for total copper was 22 ug/L, based on 19 samples collected between

February 2002 and April 2010. Therefore, analysis of site-specific data and information concludes that the discharge does not have reasonable potential to cause or contribute to an excursion above the CTR criteria for copper.

Eleven upstream receiving water samples were analyzed for copper. Copper was detected in eight receiving water samples at concentrations ranging from 0.85 to 19 ug/l. Copper was not detected at a reporting limit of 4.0 ug/l in three samples. A determination of no reasonable potential based on receiving water is made based on the fact that the receiving water complies with applicable water quality objectives for copper. The water quality objectives for copper in the receiving water based on adjustment for the lowest upstream receiving water hardness (56 ug/L) and the WER (3.42) is 19.44 ug/L.

9. Fact Sheet Section IV.C.4., Rationale for Effluent Limitations and Discharge Specifications, Water Quality-Based Effluent Limitations (WQBELs), WQBEL Calculations is amended to add an introductory paragraph as follows:

   Based on a re-evaluation of reasonable potential for copper, as described in Section IV.C.3.b, above, final WQBELs copper are no longer necessary. The remaining discussion in this section regarding copper is retained for historical purposes only.

10. Fact Sheet Section IV.D.1, Rationale for Effluent Limitations and Discharge Specifications, Final Effluent Limitations, Satisfaction of Anti-Backsliding Requirements is amended to add the following paragraphs to the end of the section as follows:

    This Order is consistent with antibacksliding requirements set forth in 40 CFR section 122.44. Effluent limitations for copper have been removed from the permit based upon site-specific conditions at the Discharger's facility. The new information provided by the Discharger indicates that based upon the relative bioavailability of copper to aquatic organisms; there is no reasonable potential for toxicity to those organisms from copper at concentrations detected in the effluent. Therefore, the protection afforded under the modified permit results in a level of protection for beneficial uses equal to the previous conditions of Order No. R1-2007-0013. Additionally, this Order is consistent with section 303 (d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the antidegradation policy is addressed below based on the conclusions of the Discharger's WER study, is at least as stringent as the effluent limitations in the Permit adopted by the Regional Water Board on June 14, 2007. Effluent

limitations for copper have been modified based on site-specific conditions at the Discharger's facility. The new information provided by the Discharger indicates that based upon the relative bioavailability of copper to aquatic organisms, the higher numeric concentrations established as final effluent limitations in this Order provide an equal level of protection of beneficial uses as the final effluent limitations for copper previously established in this Order. Therefore, this Order is consistent with antibacksliding requirements pursuant to 40 CFR section 122.44. Additionally, this Order is consistent with section 303(d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the antidegradation policy is addressed below.

11. Fact Sheet Section IV.D.2. Rationale for Effluent Limitations and Discharge Specifications, Final Effluent Limitations, Satisfaction of Antidegradation Policy is amended to add the following paragraphs to the end of the section as follows:

Pursuant to the antidegradation policy, the lowering of water quality can be allowed only if beneficial uses are protected, and if there is a maximum benefit to the people of the state. While the removal of the effluent limits may result in a slight increase in the amount of copper discharged to the water body when compared with the amount that would be discharged in compliance with the existing effluent limitations, the removal of effluent limitations is predicated on a finding that there is no reasonable potential for toxicity to organisms from copper in the effluent. Accordingly, this action will result in no less protection of beneficial uses and will maintain water quality. In addition, the Discharger has evaluated potential sources in an effort to further reduce copper concentrations in the effluent.

Furthermore, discharges regulated in accordance with this Order are for a publicly owned treatment works (POTW). The significant increase in costs for additional treatment that would be required to remove low levels of copper are not in the best interest of the public given that beneficial uses are already shown to be protected and because any resources available for water quality improvements should be used for nonattainment waters or other pressing water quality issues as opposed to treating effluent beyond what is required for protecting beneficial uses.

The activities allowed in accordance with these modifications to the waste discharge requirements apply to existing facilities. Discharges from the WWTF will be required to maintain protection of the beneficial uses of the receiving

B. Modifications to Include Geysers Project Discharge and Increase Permitted Capacity

1. Finding II.B of the Order is amended as follows:

   The Discharger owns and operates a municipal WWTF and associated collection, reclamation and disposal facilities that serve a population of approximately 26,500 residential, commercial and industrial users. The treatment system consists of biological secondary treatment utilizing extended air activated sludge aeration basins and secondary clarifiers; advanced wastewater treatment (AWT) that includes chemical addition facilities, flocculation tanks, AWT clarifiers, and sand filters; ultraviolet disinfection; chlorine disinfection of recycled water delivered to Windsor High School; and storage prior to reclamation, discharge to the Geysers recharge pipeline, and/or surface water disposal. Wastewater is discharged from Discharge Point 002 to Mark West Creek, a water of the United States, and a tributary to the Russian River within the Middle Reach of the Russian River. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

2. Discharge Prohibition III.H of the Order is amended as follows:

   Prior to completion of the connection and and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.6 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited, and after completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.9 mgd is prohibited, unless the Discharger demonstrates that it has storage and reclamation capacity to handle a higher ADWF, not to exceed 2.25 mgd.

3. Reclamation Specification IV.C.4 of the Order is amended as follows:

   Reclamation Capacity. Prior to completion of the connection and initiation of use of the Geysers Project, the Discharger shall maintain, at a minimum, a storage capacity of 163 million gallons and irrigation area of 463 equivalent acres, for the current average dry weather flow of 1.6 mgd. Upon completion of the connection and initiation of use of the Geysers Project, the Discharger shall maintain, at a minimum, a storage capacity of 149 million gallons and irrigation area of 393 equivalent acres. Additionally, the Discharger shall demonstrate that it has increased its total storage capacity and associated irrigation areas in accordance with Tables 9, 9a, or 9b in order to gain authorization to increase its average dry weather flow (up to the WWTF capacity of 2.25 mgd).

4. Reclamation Specification IV.C.4 is amended to add the following tables and associated notes:

Table 9a. Projected Storage and Irrigation Capacities for Treatment Capacity Increases with 0.53 MGD Diversion to Geysers Project

Treatment & Reclamation System Rated ADWF Capacity (mgd)	Minimum Total Storage Capacity (mg)	Minimum Total Irrigation Area (equivalent acres)
1.6	149	393
1.7	149	393
1.8	149	393
1.9	149	393
2.0	165	418
2.1	165	543
2.2	196	543
2.25	207	583

Table 9b. Projected Storage and Irrigation Capacities for Treatment Capacity Increases with 0.75 MGD Diversion to Geysers Project

Treatment & Reclamation System Rated ADWF Capacity (mgd)	Minimum Total Storage Capacity (mg)	Minimum Total Irrigation Area (equivalent acres)
1.6	149	393
1.7	149	393
1.8	149	393
1.9	149	393
2.0	149	393
2.1	149	393
2.2	149	523
2.25	165	438

Notes for Tables 9a and 9b:

1 – Dead storage was assumed to be 10% of total storage for all flow conditions. All scenarios provide 20 days of storage reliability under dry-weather conditions.

2 – Total storage does not include County storage facilities, totaling 50 MG, that are available to the Town for the next four years (through 2014).

3 – Total irrigation area represents the minimum acreage required to maintain at least 20 days of storage reliability during dry-weather conditions. The reduction in acreage from existing conditions was assumed to be in private acreage deliveries. It was assumed that the Discharger would maintain the same buffer/irrigation lands as current conditions.

5. Attachment E – Monitoring and Reporting Program (September 20, 2007 Revision) Section II, Monitoring Locations, Table E-1, Summary of Discharge

Points and Monitoring Station Locations is modified to add the new Geysers Project discharge as follows:

Table E-1. Summary of Discharge Points and Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
004	EFF-001	Treated, UV disinfected effluent delivered to the Geysers recharge pipeline

6. Fact Sheet Section II.A., Facility Description, Description of Collection System and Wastewater and Biosolids Treatment and Controls is amended as follows:

Wastewater Treatment

The current Facility provides advanced wastewater treatment and has design capacities of 2.25 mgd, average dry weather flow (ADWF) and 7.2 mgd, peak weekly wet weather flow. The wastewater treatment facilities include biological secondary treatment utilizing extended air activated sludge aeration basins and secondary clarifiers; advanced wastewater treatment (AWT) that includes chemical addition facilities, flocculation tanks, AWT clarifiers, and sand filters; ultraviolet (UV) disinfection; and storage prior to reclamation, discharge to the Geysers recharge pipeline, and/or disposal. A portion of the treated and UV disinfected effluent is directed to a wet well for chlorination prior to being transferred to Windsor High School for toilet flushing and landscape irrigation. Attachment C provides a flow schematic of the Facility.

7. Fact Sheet Section II.E, Planned Changes is amended to include the following paragraphs at the end of the section as follows:

On November 5, 2008, the Town formally decided to move forward with the Geysers Recharge Pipeline Connection Project (Geysers), by letter to the Regional Water Board Executive Officer dated February 11, 2009. The project consists of initially delivering an annual average flow of 0.53 mgd of recycled water to the Geysers (0.70 mgd in October through May and 0.20 mgd in June through September). Based on the terms of the agreement, the Town has the ability to increase deliveries to a maximum annual average flow of 0.75 mgd (0.92 mgd in October through May and 0.42 mgd in June through September). On July 21, 2010, the Discharger submitted a ROWD with a technical memorandum that includes a water balance to model the Discharger's existing treatment, discharge, and storage system to demonstrate the reliability of the Discharger's current storage, disposal and reclamation system and to identify the

additional reliability that would be provided by the Discharger's connection to the Geysers pipeline. The water balance model demonstrates that, with the Geysers Project, the WWTF can effectively treat and reuse/dispose higher influent flows and improve the storage reliability that the Discharger currently has. The Discharger has initiated construction of its pump station and pipeline connection to Geysers pipeline and anticipates to complete construction and begin diverting its disinfected, treated effluent to the pipeline by July 2011.

8. Fact Sheet Section IV.A.8 is amended as follows:

   Prior to completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.6 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited, and after completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.9 mgd is prohibited, unless the Discharger demonstrates that it has storage and reclamation capacity to handle a higher ADWF, not to exceed 2.25 mgd.

   The design capacity of the WWTF is 2.25 mgd. Currently, the Discharger's reclamation capacity is 1.6 mgd, based on the capacity of the existing storage ponds and irrigation system. Discharge Prohibition III.H allows an increase in the Discharger's treatment and reclamation capacity upon completion of the connection and initiation of use of the Geysers Project. The Discharger is actively pursuing other alternatives to increase reclamation capacity. The Discharger must demonstrate to the Executive Officer that it has increased its storage and irrigation capacity, in order to receive approval for increased flows into the WWTF.

9. Fact Sheet Section IV.G.3 is amended as follows:

   Reclamation Capacity. This Order requires that the Discharger maintain minimum storage and irrigation area capacities that are required to maintain the Discharger's water balance for reclamation and disposal. Tables 9 and 9a of the Order, Projected Storage and Irrigation Capacities for Reclamation System Capacity Increases, was generated by models developed by the Discharger's technical consultant and subsequently provided for inclusion in this Order. Discharge Prohibition III.H of the Order limits the Discharger to an ADWF of 1.6 mgd, and allows an increase in ADWF of 1.9 mgd upon completion of the connection and initiation of use of the Geysers Project at an average annual flow rate of 0.53 mgd. The Discharger must provide documentation that it has increased its total storage capacity and associated irrigation area capacity in accordance with Tables 9, 9a, or 9b in the Order. This Provision is retained from the Order No. R1-2002-0013.

C. Other Modifications

1. Modifiy Fact Sheet Section VIII.A, Public Participation, Notification of Interested Parties to add the following paragraph at the end of the section:

   The Discharger and interested agencies and persons have been notified of the Regional Water Board's intent to modify waste discharge requirements for the existing discharge and have been provided opportunities for public meetings and to submit their written views and recommendations. Notification was provided through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Press Democrat on November 15, 2010. On January 27, 2011, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding adoption of Order No. R1-2011-0006 modifying Order No. R1-2007-0013.

2. Modify Fact Sheet Section VIII.B, Public Participation, Written Comments to add the following paragraph at the end of the section:

   To be fully responded to by staff and considered by the Regional Water Board, written comments on modifications to Order No. R1-2007-0013 contained in Order No. R1-2011-0006 should be received at the Regional Water Board offices by 5:00 p.m. on December 15, 2010.

Certification:

I, Catherine Kuhlman, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, North Coast Region, on January 27, 2011.

Catherine Kuhlman
Executive Officer

11_0006_Windsor_NPDES

Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board
North Coast Region
Geoffrey M. Hales, Chairman

Arnold Schwarzenegger
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ORDER NO. R1-2007-0013
NPDES NO. CA0023345
(Modified in accordance with Order No. R1-2011-0006 on January 27, 2011)
WDID NO. 1B82037OSON

WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT FOR THE TOWN OF WINDSOR WASTEWATER TREATMENT, RECLAMATION AND DISPOSAL FACILITY

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

Table 1. Discharger Information

Discharger	Town of Windsor
Name of Facility	Windsor Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	8400 Windsor Road
	Windsor, California 95492
	Sonoma County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water/ Discharge Location
001	Disinfected tertiary municipal effluent	---	---	Effluent storage ponds
002	Disinfected tertiary municipal effluent	38 °, 29', 39" N	122 °, 51', 05" W	Mark West Creek (at Trenton-Healdsburg Bridge)
003A	Disinfected tertiary municipal effluent	---	---	Various irrigation discharges
003B	Disinfected tertiary municipal effluent	---	---	Reclamation at Windsor High School (irrigation and toilet flushing)

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	June 14, 2007
This Order shall become effective on:	August 1, 2007
This Order shall expire on:	August 1, 2012
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	December 14, 2011

IT IS HEREBY ORDERED, that this Order supersedes Order No. R1-2002-0013 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Catherine Kuhlman, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on June 14, 2007 and modified on January 27, 2011.

Catherine Kuhlman

Catherine Kuhlman, Executive Officer

Table of Contents

I. Facility Information 5
II. Findings 5
III. Discharge Prohibitions 12
IV. Effluent Limitations and Discharge Specifications 14
A. Effluent Limitations 14
B. Land Discharge Specifications 16
C. Reclamation Specifications 16
V. Receiving Water Limitations 18
A. Surface Water Limitations 18
B. Groundwater Limitations 20
VI. Provisions **20**
A. Standard Provisions 20
B. Monitoring and Reporting Program (MRP) Requirements 21
C. Special Provisions 22
2. Special Studies, Technical Reports and Additional Monitoring Requirements ..22
3. Best Management Practices and Pollution Prevention 25
4. Construction, Operation and Maintenance Specifications 26
5. Special Provisions for Municipal Facilities (POTWs Only) 27
6. Other Special Provisions – Stormwater 31
7. Compliance Schedules 31
VII. Compliance Determination 32
VIII. Receiving Water Monitoring Requirements – Surface Water E-18
A. Monitoring Locations (Upstream) E-18
B. Monitoring Locations (Downstream) E-18
Attachment G – Water Reclamation Requirements and Provisions G-1
A. Water Reclamation Findings G-1
B. Water Reclamation Requirements G-2
C. Water Reclamation Provisions G-5

List of Tables

Table 1. Discharger Information 1
Table 2. Discharge Locations 1
Table 3. Administrative Information 2
Table 4. Facility Information 5
Table 5. Basin Plan Beneficial Uses 8
Table 6. Effluent Limitations for Discharge Point 001 (Monitoring Location EFF-001) 14
Table 7. Interim Effluent Limitations for Discharge Point 002 for Protection of Aquatic Life ..15
Table 10. Time Schedule for Compliance with Final Copper Effluent Limitations 31

List of Attachments

Attachment A – Definitions A-1
Attachment B – Map B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program (MRP) E-1
Attachment E -1 – Final Copper Effluent Limitations E-19
Attachment E -2 – Interim Receiving Water Monitoring Requirements E-20
Attachment F – Fact Sheet F-1
Attachment F-1 – Reasonable Potential Analysis F-70
Attachment G – Water Recycling Requirements and Provisions G-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Town of Windsor
Name of Facility	Windsor Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	8400 Windsor Road Windsor, California 95492 Sonoma
Facility Contact, Title, and Phone	Richard W. Burtt, Public Works Director, (707) 838-5343
Mailing Address	P.O. Box 100, Windsor, California 95492
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	2.25 mgd average dry weather flow 7.2 mgd peak weekly wet weather flow

mgd – million gallons per day

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

A. Background. The Town of Windsor (hereinafter Discharger) is currently discharging pursuant to Order No. R1-2002-0013 and National Pollutant Discharge Elimination System (NPDES) Permit No.CA0023345. The Discharger submitted a Report of Waste Discharge (ROWD), dated July 24, 2006, and supplemental information on November 15, 2006 and February 1, 2007 and applied for a NPDES permit renewal to discharge up to 2.25 million gallons per day (mgd) average dry weather flow (ADWF) and 7.2 mgd peak weekly wet-weather flow of disinfected advanced treated wastewater from the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility (WWTF), hereinafter Facility. The application was deemed complete on November 15, 2006.

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

B. Facility Description. The Discharger owns and operates a municipal WWTF and associated collection, reclamation and disposal facilities that serve a population of approximately 26,500 residential, commercial and industrial users. The treatment system consists of biological secondary treatment utilizing extended air activated sludge aeration basins and secondary clarifiers; advanced wastewater treatment (AWT) that

includes chemical addition facilities, flocculation tanks, AWT clarifiers, and sand filters; ultraviolet disinfection; chlorine disinfection of recycled water delivered to Windsor High School; and storage prior to reclamation, discharge to the Geysers recharge pipeline, and/or surface water disposal. Wastewater is discharged from Discharge Point 002 to Mark West Creek, a water of the United States, and a tributary to the Russian River within the Middle Reach of the Russian River. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWC) (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) and a Master reclamation permit pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with sections 13260 and 13520, respectively).

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

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

This action also involves the adoption of a Master Reclamation Permit. The Town of Windsor has certified a final environmental impact report (EIR) in accordance with CEQA (Public Resources Code section 210000, et seq). The Town of Windsor identified mitigation measures to reduce potential environmental effects of the proposed activities related to the Master Reclamation Permit. As a responsible agency under CEQA, before approving the permit, the Regional Water Board considered the EIR and, after reaching its own conclusions, made findings on the significant impacts of the activities within its jurisdiction to approve (Public Resources Code, Section 21002.1(d); California Code of Regulations, Title 14, Section 15096(g) and (h)). Section III.B. of the Fact Sheet included with this Order describes the specific mitigation measures identified by the Town of Windsor and the Regional Water Board. Based on the foregoing, the Regional Water Board finds that the significant environmental effects of the proposed activities related to the Discharger's reclamation system, as approved by this Order, are reduced to less-than-significant levels.

F. **Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (CFR)[1], require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. This Order requires advanced treatment of wastewater in excess of the minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133, as required by the Water Quality Plan for the North Coast region, discussed in section H, below. A detailed discussion of the technology-based effluent limitations development is included in sections IV.B and IV.D.4 of the Fact Sheet.

G. **Water Quality-Based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards to protect the beneficial uses of the receiving water. This Order contains water quality-based effluent limitations more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements is discussed in sections IV.C and IV.D.4 of the Fact Sheet.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedence of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

H. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Mark West Hydrologic Subarea of the Middle Russian River Hydrologic Area are as follows:

---

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Mark West Creek	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Groundwater recharge (GWR) Freshwater replenishment (FRESH) Navigation (NAV) Contact water recreation (REC-1) Non-contact water recreation (REC-2) Commercial and sportfishing (COMM) Warm freshwater habitat (WARM) Cold freshwater habitat (COLD) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Migration of aquatic organisms (MIGR) Spawning, reproduction and or early development (SPWN) Potential: Industrial process supply (PRO) Hydropower generation (POW) Shellfish harvesting (SHELL) Aquaculture (AQUA) Subsistence Fishing (FISH)
001, 003A, 003B	Groundwater	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Native American Culture (CUL) Potential: Industrial process supply (PRO)
002, 003A,003B	Freshwater Wetlands	Existing: Wetland Habitat (WET) Potential: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Groundwater recharge (GWR) Freshwater replenishment (FRESH) Navigation (NAV) Contact water recreation (REC-1) Non-contact water recreation (REC-2) Commercial and sportfishing (COMM) Warm freshwater habitat (WARM) Cold freshwater habitat (COLD) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Migration of aquatic organisms (MIGR) Spawning, reproduction and or early development (SPWN) Shellfish Harvesting (SHELL) Aquaculture (AQUA) Native American Culture (CUL) Flood Peak Attenuation/Flood Water Storage (FLD) Water Quality Enhancement (WQE)

In addition to the beneficial uses set out in the Basin Plan, there are several implementation plans that include actions intended to meet water quality objectives and protect beneficial uses of the North Coastal Basin. For the Russian River and its tributaries, no point source waste discharges are allowed from May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. For municipal waste discharged from October 1 through May 14, the discharge must be of advanced treated wastewater, and must meet a median coliform level of 2.2 mpn/1000 ml.

Requirements of this Order implement the Basin Plan.

I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR are applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants and are applicable to this discharge.

J. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds one (1) year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order includes compliance schedules and interim effluent limitations. A detailed

discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) is included in section IV.E of the Fact Sheet.

L. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. **Stringency of Requirements for Individual Pollutants**. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biological oxygen demand (BOD), total suspended solids (TSS), pH and pathogens (total coliform). This Order's technology-based pollutant restrictions exceed the minimum, applicable federal technology-based requirements by requiring advanced treatment of wastewater, as required by the Basin Plan. The rationale for including these limitations is explained in sections IV.B and IV.D of the Fact Sheet.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. This Order contains pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes water-quality based effluent limitations for pH that are more stringent than applicable federal standards, but that are necessary to meet numeric objectives and protect beneficial uses.

To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH) and the General Objective regarding antidegradation were approved by USEPA on March 4, 2005, and are

applicable water quality standards pursuant to section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section13241, in establishing these requirements.

N. 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 quality of waters 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 section IV.D.2 of the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. 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 effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent that those in the previous Order, Order No. R1-2002-0013. As discussed in detail in sections IV.D.1 and IV.D.4 of the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

Q. Monitoring and Reporting. Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

R. **Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with section 122.4, 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. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in section V.B in the Fact Sheet.

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

T. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements and a Master Reclamation Permit and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in section VIII of the Fact Sheet of this Order.

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

III. DISCHARGE PROHIBITIONS

A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

B. Creation of pollution, contamination, or nuisance, as defined by section 13050 of the CWC, is prohibited.

C. The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c.of this Order (Solids Disposal and Handling Requirements).

D. The discharge of untreated or partially treated waste from anywhere within the collection, treatment, or disposal facility is prohibited, except as provided for in Prohibition III.E. and Attachment D, Standard Provision I.G. (Bypass).

E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land that creates a pollution, contamination, or nuisance as defined in CWC section 13050(m) is prohibited.

F. The discharge of waste to land that is not owned by or subject to an agreement for use by the Discharger is prohibited.

G. The discharge of waste at any point except Discharge Point 002 (the constructed outfall to the Mark West Creek) or 003A/003B (the Facility's recycled water system), or as authorized by another State Water Board or Regional Water Board Order, is prohibited.

H. Prior to completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.6 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited, and after completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the Discharger's Facility in excess of 1.9 mgd is prohibited, unless the Discharger demonstrates that it has storage and reclamation capacity to handle a higher ADWF, not to exceed 2.25 mgd.

I. The discharge of treated wastewater from the wastewater treatment facility to the Russian River or its tributaries is prohibited during the period May 15 through September 30 of each year.

J. During the period of October 1 through May 14 of each year, discharges of wastewater shall not exceed one percent of the natural flow of Mark West Creek. For purposes of this Order, the natural flow in Mark West Creek shall be that flow measured at Trenton-Healdsburg Bridge minus the discharge flow of wastewater from the City of Santa Rosa Laguna Subregional Wastewater Treatment, Conveyance, Reuse, and Disposal Facility (Santa Rosa Facility) as reported daily to the Discharger's operation staff by the Santa Rosa Facility operations staff. Daily flow comparisons shall be based on the 24-hour period from 12:01 a.m. to 12:00 midnight. For purposes of this Order, compliance with this discharge rate limitation is determined as follows: 1) the discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one percent of the most recent daily flow measurement of Mark West Creek as measured at the Trenton-Healdsburg Bridge, and 2) in no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed one percent of the total volume of Mark West Creek at Trenton-Healdsburg Bridge in the same calendar month.

During periods of discharge, the flow gage shall be read at least once daily, and the discharge flow rate shall be set for no greater than one percent of the flow of Mark West Creek at the time of the daily reading. At the beginning of the discharge season, the first monthly flow comparisons shall be determined from the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the final monthly flow volume shall be determined from the first day of the calendar month to the date when the discharge ended for the season.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Storage Pond)

a. The discharge of advanced treated wastewater, as defined by the WWTF's treatment design and the numerical limitations below, shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered and disinfected as defined in Title 22, Division 4, Chapter 3, California Code of Regulations (CCR).

Table 6. Effluent Limitations for Discharge Point 001 (Monitoring Location EFF-001)

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
BOD (5-day @ 20°C)	mg/L	10	15	---	---
Dry Weather	lbs/day[2]	188	281	---	---
Wet Weather	lbs/day[3]	---	901	---	---
Total Suspended Solids	mg/L	10	15	---	---
Dry Weather	lbs/day[1]	188	281	---	---
Wet Weather	lbs/day[2]	---	901	---	---
pH	standard units	---	---	6.0	9.0

b. Percent Removal: The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent. Percent removal shall be determined from the 30-day average value of influent wastewater concentration in comparison to the 30-day average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Location EFF-001. (CFR 133.101(j))

c. Disinfection: The disinfected effluent, as measured at Monitoring Location EFF-001, shall not contain concentrations of total coliform bacteria exceeding the following concentrations:

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2 Mass-based effluent limitations for dry weather conditions are based on the ADWF flow of 2.25 mgd.

3 During wet weather conditions when the average weekly or average monthly influent flow exceeds 2.25 mgd, mass-based effluent limitations are calculated based on the weekly wet weather design flow of 7.2 mgd.

i. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using the bacteriological results of the last seven days for which analyses have been completed.
ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.
iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

2. **Interim Effluent Limitations – Discharge Point 002 (Discharge to Mark West Creek) (Historical Requirement)**

a. Beginning on the effective date of this Order and ending no later than May 18, 2010, the discharge of advanced treated wastewater shall maintain compliance with the following limitations at Monitoring Location EFF-002, as described in the attached MRP (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Table 7. Interim Effluent Limitations for Discharge Point 002 for Protection of Aquatic Life

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper	µg/L	17	--	--	--	--

3. **Final Effluent Limitations – Discharge Point 002**

a. **Acute Toxicity.** There shall be no acute toxicity in the effluent, as measured at Monitoring Location EFF-002, when discharging to receiving waters. The Discharger will be considered in compliance with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted waste complies with the following:

i. Minimum for any one bioassay: 70 percent survival
ii. Median for any three consecutive bioassays: at least 90 percent survival

Compliance with the three sample median shall be determined at each monitoring location by calculating the median percent survival of the three most recent consecutive samples meeting all test acceptability criteria collected from Monitoring Location EFF-002. All effluent samples shall be collected in accordance with methods described in the MRP.

b. **Effluent Limitations for Protection of Freshwater Aquatic Life:** No final effluent limitations for protection of aquatic life are required, based on a

determination of no reasonable potential as presented in Fact Sheet section IV.C.3.b.

c. Advanced treated wastewater discharged to Mark West Creek or its tributaries shall have no detectable levels of chlorine at a detection limit of 0.1 mg/l.

B. Land Discharge Specifications

This section is not applicable to the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Town of Windsor reclaims treated wastewater, thus the Town has Reclamation Specifications rather than Land Discharge Specifications.

C. Reclamation Specifications

1. **Water Reclamation Requirements and Provisions.** The Discharger shall comply with the Water Reclamation Requirements and Provisions contained in Attachment G of this Order.

2. **Filtration Rate.** The rate of filtration through the tertiary filters, as measured at Monitoring Location INT-001 shall not exceed 5 gallons per minute per square foot of surface area.

3. **Turbidity.** The effluent from the filtration system shall at all times be filtered such that the filtered effluent does not exceed any of the following specifications at Monitoring Location INT-002, prior to discharge to the UV disinfection unit:
   a. An average of 2 Nephelometric Turbidity Units (NTU) during any 24-hour period;
   b. 5 NTU more than 5 percent of the time during any 24-hour period; and
   c. 10 NTU at any time.

4. **Reclamation Capacity.** Prior to completion of the connection and initiation of use of the Geysers Project, the Discharger shall maintain, at a minimum, a storage capacity of 163 million gallons and irrigation area of 463 equivalent acres, for the current average dry weather flow of 1.6 mgd. Upon completion of the connection and initiation of use of the Geysers Project, the Discharger shall maintain, at a minimum, a storage capacity of 149 million gallons and irrigation area of 393 equivalent acres. Additionally, the Discharger shall demonstrate that it has increased its total storage capacity and associated irrigation areas in accordance with Tables 9, 9a, or 9b in order to gain authorization to increase its average dry weather flow (up to the WWTF capacity of 2.25 mgd).

Table 9. Projected Storage and Irrigation Capacities for Reclamation System Capacity Increases

Reclamation System Rated ADWF Capacity (mgd)	Total Storage Capacity (mgd)	Total Irrigation Area (Equivalent Acres)
1.6	163	463
1.7	185	503
1.8	207	541
1.9	230	580
2.0	252	619
2.1	274	658
2.2	296	697
2.25	307	715

Table 9a. Projected Storage and Irrigation Capacities for Treatment Capacity Increases with 0.53 MGD Diversion to Geysers Project

Treatment & Reclamation System Rated ADWF Capacity (mgd)	Minimum Total Storage Capacity (mg)	Minimum Total Irrigation Area (equivalent acres)
1.6	149	393
1.7	149	393
1.8	149	393
1.9	149	393
2.0	165	418
2.1	165	543
2.2	196	543
2.25	207	583

Table 9b. Projected Storage and Irrigation Capacities for Treatment Capacity Increases with 0.75 MGD Diversion to Geysers Project

Treatment & Reclamation System Rated ADWF Capacity (mgd)	Minimum Total Storage Capacity (mg)	Minimum Total Irrigation Area (equivalent acres)
1.6	149	393
1.7	149	393
1.8	149	393
1.9	149	393
2.0	149	393
2.1	149	393
2.2	149	523
2.25	165	438

Notes for Tables 9a and 9b:

1 –Dead storage was assumed to be 10% of total storage for all flow conditions. All scenarios provide 20 days of storage reliability under dry-weather conditions.

2 –Total storage does not include County storage facilities, totaling 50 MG, that are available to the Town for the next four years (through 2014).

3 –Total irrigation area represents the minimum acreage required to maintain at least 20 days of storage reliability during dry-weather conditions. The reduction in acreage from existing conditions was assumed to be in private acreage deliveries. It was assumed that the Discharger would maintain the same buffer/irrigation lands as current conditions.

5. **Reclamation Alternatives.** The Discharger shall utilize all reasonable alternatives for reclamation. "Reasonable alternatives" for reclamation include, but are not limited to: full use of existing irrigation capacity; seeking additional irrigation capacity to the extent that storage capacity increases; and establishing joint use projects with adjacent reclamation agencies, such as the Airport-Larkfield-Wikiup Sanitation Zone and the City of Santa Rosa.

6. **Storage Ponds.** Ponds used for storage of recycled water shall be constructed in a manner that protects groundwater. The Discharger shall submit design proposals for new storage ponds to the Regional Water Board for review prior to construction and demonstrate that the pond design incorporates features to protect groundwater from exceeding groundwater quality objectives.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Mark West Creek:

1. The waste discharge shall not cause the dissolved oxygen concentration of the receiving waters to be depressed below 7.0 mg/l. Additionally, the discharge shall not cause the dissolved oxygen content of the receiving water to fall below 10.0 mg/l more than 50 percent of the time, or below 7.5 mg/l more than 10 percent of the time. In the event that the receiving waters are determined to have dissolved oxygen concentration of less than 7.0 mg/l, the discharge shall not depress the dissolved oxygen concentration below the existing level.

2. The discharge shall not cause the pH of the receiving waters to be depressed below 6.5 nor raised above 8.5. If the pH of the receiving water is less than 6.5, the discharge shall not cause a further depression of the pH of the receiving water. If the pH of the receiving water is greater than 8.5, the discharge shall not cause a further increase in the pH of the receiving water. The discharge shall not cause receiving water pH to change more than 0.5 pH units at any time.

3. The discharge shall not cause the turbidity of the receiving waters to be increased more than 20 percent above naturally occurring background levels.

4. The discharge shall not cause the receiving waters to contain floating materials, including, but not limited to, solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

5. The discharge shall not cause the receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

6. The discharge shall not cause coloration of the receiving waters that causes nuisance or adversely affects beneficial uses.

7. The discharge shall not cause bottom deposits in the receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.

8. The discharge shall not cause or contribute to receiving water concentrations of biostimulants that promote objectionable aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses of the receiving waters.

9. The discharge shall not cause the receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board. [See Order sections IV.A.3 and VI.C.2, and Monitoring and Reporting Program section V]

10. The following temperature limitations apply to the discharge to the receiving waters:

    a. When the receiving water is below 58° F, the discharge shall cause an increase of no more than 4° F in the receiving water, and shall not increase the temperature of the receiving water beyond 59° F. No instantaneous increase in receiving water temperature shall exceed 4° F at any time.

    b. When the receiving water is between 59° F and 67° F, the discharge shall cause an increase of no more than 1° F in the receiving water. No instantaneous increase in receiving water temperature shall exceed 1° F at any time.

    c. When the receiving water is above 68° F, the discharge shall not cause an increase in temperature of the receiving water.

11. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. There shall be no

bioaccumulation of pesticide concentrations found in bottom sediments or aquatic life as a result of the discharge. The discharge shall not cause the receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan.

12. The discharge shall not cause the receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance or that otherwise adversely affect beneficial uses.

13. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with the more stringent standards.

14. The discharge shall not cause concentrations of chemical constituents to occur in excess of limiting concentrations specified in Table 3-2 of the Basin Plan or in excess of more stringent MCLs established for these pollutants in Title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the CCR.

B. Groundwater Limitations

1. The collection, storage, and use of wastewater or recycled water shall not cause or contribute to a statistically significant degradation of groundwater quality.

2. The collection, storage, and use of wastewater or recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following Regional Water Board standard provisions.

   a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations

may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, reclamation specification, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board orally[4] within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

c. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC § 1211.)

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

2. The Discharger may submit a proposal to monitor receiving water at locations different than receiving water locations specified in section VIII of the MRP. The proposal must be received by the Executive Officer **within 180 days of the effective date of this Order** and specify monitoring locations that are acceptable to the Executive Officer for the purpose of demonstrating compliance with this Order. The Executive Officer will inform the Discharger within 90 days after receipt of the proposal whether the alternative monitoring locations are acceptable, and may allow an additional period of time to finalize the monitoring proposal, provided that the Discharger has demonstrated reasonable progress toward completing a plan that can adequately assess receiving water conditions immediately downstream of the discharge point. In the interim, the Discharger shall comply with interim receiving water monitoring requirements using interim receiving water monitoring locations, as specified in Attachment E-2 of the MRP.

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[4] Oral reporting means direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the State Office of Emergency Services or the Regional Water Board spill officer.

C. Special Provisions

1. Reopener Provisions

a. **Standards Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. **Reasonable Potential.** The Regional Water Board may modify, or revoke and reissue, this Order if present or future investigations demonstrate that the discharge governed by this Order has the reasonable potential to cause or contribute to excursions above any applicable priority pollutant criterion or objective or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board; this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

d. **303(d)-Listed Pollutants.** If an applicable TMDL program is adopted, this Order may be reopened and the effluent limitations for the pollutant or pollutants that are the subject of the TMDL modified or an effluent concentration limitation imposed to conform this Order to the TMDL requirements. If the Regional Water Board determines that a voluntary offset program is feasible for and desired by the Discharger, then this Order may be reopened to reevaluate the effluent limitations for the pollutant or pollutants that are the subject of the TMDL and, if appropriate, to incorporate provisions recognizing the Discharger's participation in an offset program.

e. **Special Studies.** If a water effect ratio, mixing zone or other water quality study provides new information and a basis for determining that a permit condition or conditions should be modified, the Regional Water Board may reopen this Order and make modifications in accordance with 40 CFR 122.62.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Whole Effluent Toxicity.** In addition to a limitation for whole effluent acute toxicity, the Monitoring and Reporting Program (MRP) of this Order requires routine monitoring for whole effluent chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity. As established by

the MRP, if either the acute toxicity effluent limitation or a chronic toxicity monitoring trigger of 1.0 TUc (where TUc = 100/NOEC)[5] is exceeded, the Discharger shall conduct accelerated toxicity monitoring as specified in section V. of the MRP. Results of accelerated toxicity monitoring will indicate a need to conduct a Toxicity Reduction Evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE Workplan prepared by the Discharger pursuant to Section VI.C.2.b of this Order, below.

b. **Toxicity Reduction Evaluations (TRE) Workplan.** The Discharger submitted a TRE Workplan to the Regional Water Board Executive Officer on October 10, 2006. Upon approval, this plan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include at least the following items:

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

   ii. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices.

   iii. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

c. **Toxicity Reduction Evaluations (TRE).** The TRE shall be conducted in accordance with the following:

   i. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test, required by Section V of the MRP, observed to exceed either the acute or chronic toxicity parameter.

   ii. The TRE shall be conducted in accordance with the Discharger's workplan.

   iii. The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B-99/002.

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[5] 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.

iv. The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity.

v. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. As guidance, the Discharger shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).

vi. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity parameters.

vii. Many recommended TRE elements accompany required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of such programs may be acceptable to comply with requirements of the TRE.

viii. The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

d. **Groundwater Monitoring Program**. The Discharger shall prepare and submit for approval by Regional Water Board Executive Officer a Groundwater Monitoring Program for its Water Reclamation System **within 180 days of the effective date of this Order**. The Program shall be of sufficient scope to demonstrate that the discharge of treated wastewater to the Discharger's land irrigation system is in compliance with this Order.

e. **Storage Pond Leak Monitoring Program**. The Discharger shall prepare and submit for approval by Regional Water Board Executive Officer a Storage Pond Leak Monitoring Program **within 180 days of the effective date of this Order**. The Program shall be of sufficient scope to demonstrate that storage of treated wastewater within the Discharger's reclamation system is not degrading groundwater quality or causing or contributing to excursions of applicable water quality objectives in groundwater or surface water.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

The Discharger shall, as required by the Executive Officer, develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as detected, but not quantified (DNQ) when the effluent limitation is less than the method detection limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

i. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

ii. A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Regional Water Board including:

1. All PMP monitoring results for the previous year;

2. A list of potential sources of the reportable priority pollutant(s);

3. A summary of all actions undertaken pursuant to the control strategy; and

4. A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

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

b. The Discharger shall maintain an updated Operation and Maintenance (O&M) Manual for the Facility. The Discharger shall update the O&M Manual, as necessary, to conform with changes in operation and maintenance of the Facility. The O&M Manual shall be readily available to operating personnel onsite. The O&M Manual shall include the following:

i. Description of the treatment plant table of organization showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc). The description should include documentation that the personnel are knowledgeable and qualified to operate the treatment facility so as to achieve the required level of treatment at all times.

ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.

iii. Description of laboratory and quality assurance procedures.

iv. Process and equipment inspection and maintenance schedules.

v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Discharger will be able to comply with requirements of this Order.

vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems

On May 2, 2006, the State Water Board adopted State Water Board Order 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage under State Water Boards Order 2006-0003-DWQ was November 2, 2006. The Discharger has applied for coverage under, and shall be subject to the requirements of Order 2006-0003-DWQ and any future revisions thereto for operation of its wastewater collection system.

In addition to the coverage obtained under Order 2006-0003, the Discharger's collection system is also 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 § 122.41(e)), report any non-compliance (40 CFR § 122.41(l)(6) and (7)), and mitigate any discharge from the collection system in violation of this Order (40 CFR § 122.41(d)). See also this Order at Standard Provision VI.A.2. and Attachment D subsections I.C., I.D., V.E., and V.H.

ii. Sanitary Sewer Overflows

The written report requirements as specified below in this subsection shall terminate when the Discharger commences electronic and/or telefax reporting of sanitary sewer overflows (SSOs) pursuant to Provision D.15 and General Monitoring and Reporting Requirement G.2 of Order No. 2006-0003-DWQ and Monitoring and Reporting Program No. 2006-0003-DWQ. Oral reporting[6] of SSOs as specified below in this subsection shall continue through the term of this Order.

SSOs shall be reported orally and in writing to the Regional Water Board staff in accordance with the following:

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[6] Oral reporting means direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the State Office of Emergency Services or the Regional Water Board spill officer.

a. SSOs in excess of 1,000 gallons or any SSO that results in sewage reaching surface waters, or if it is likely that more than 1,000 gallons has escaped the collection system, shall be reported immediately by telephone. A written description of the event shall be submitted with the monthly monitoring report.

b. SSOs that result in a sewage spill between 100 gallons and 1,000 gallons that do not reach a waterway shall be reported orally within 24 hours. A written description of the event shall be submitted with the next monthly monitoring report.

c. Information to be provided orally includes:

1) Name and contact information of caller.
2) Date, time and location of SSO occurrence.
3) Estimates of spill volume, rate of flow, and spill duration.
4) Surface water bodies impacted.
5) Cause of spill.
6) Cleanup actions taken or repairs made.
7) Responding agencies.

d. Information to be provided in writing includes:

1) Information provided in verbal notification.
2) Other agencies notified by phone.
3) Detailed description of cleanup actions and repairs taken.
4) Description of actions that will be taken to minimize or prevent future spills.

b. Source Control Provisions

The Discharger shall perform source control functions, to include the following:

i. Implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system.

ii. If waste haulers are allowed to discharge to the Facility, establish a waste hauler permit system, to be reviewed by the Executive Officer, to regulate waste haulers discharging to the collection system of Facility.

iii. Conduct a waste survey once every five years, or more frequently if required by the Regional Water Board Executive Officer, to identify all industrial dischargers that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility.

iv. Perform ongoing industrial inspections and monitoring, as necessary, to ensure adequate source control.

c. Sludge Disposal and Handling Requirements

i. Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and state regulations.

iii. The use and disposal of biosolids shall comply with all the requirements in 40 CFR 503, which are enforceable by the USEPA, not the Regional Water Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, the Regional Water Board may also initiate enforcement where appropriate.

iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as landfill daily cover shall meet the applicable requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge or biosolids disposed of, and the landfill(s) which received the sludge or biosolids.

v. The beneficial use of biosolids by application to land as soil amendment is not covered or authorized by this Permit. Class B biosolids that are applied to land as soil amendment by the Discharger within the North Coast Region shall comply with State Water Board Water Quality Order No. 2000-10-DWQ (General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order) or other WDRs issued by the Regional Water Board.

vi. The Discharger shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that has a likelihood of adversely affecting human health or the environment.

vii. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.

viii. The solids and sludge treatment and storage site shall have facilities adequate to divert surface water runoff from adjacent areas, to protect the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from at least a 100-year storm.

ix. The discharge of sewage sludge, biosolids and other waste solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the state.

d. Operator Certification. Supervisors and operators of municipal WWTFs shall possess a certificate of appropriate grade pursuant to chapter 26, division 3, Title 23 of the CCR.

e. Adequate Capacity. If the Town's WWTF or reclamation system will reach capacity within four years, the Discharger shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest monthly flow. The Discharger shall demonstrate that adequate steps are being taken to address the capacity problem. The Discharger shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Water Board, or within 120 days after receipt of Regional Water Board notification, that the WWTF will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR Title 23, Section 2232]

f. Statewide General WDRs for Discharge of Biosolids to Land

For the discharge of biosolids from the wastewater treatment plant, the Discharger shall seek authorization to discharge under and meet the requirements of the State Water Resources Control Board Water Quality Order No. 2004-0012–DWQ General Waste Discharge Requirements For The Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. The Discharger shall

submit a notice of intent for coverage under Order No. 2004-012–DWQ by December 30, 2007.

6. Other Special Provisions – Stormwater

On April 17, 1997, the State Water Board adopted State Water Board Water Quality Order 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. The Discharger has applied for coverage under, and shall be subject to the requirements of Order 97-03-DWQ and any future revisions thereto for management and discharge of industrial stormwater.

7. Compliance Schedules

a. **Compliance Schedule for Achieving Final Effluent Limitations for Copper**

The Discharger shall comply with the following schedule to achieve compliance with final effluent limitations for copper. No later than 14 days following each compliance date, the Discharger shall notify the Regional Water Board, in writing, of its compliance with the compliance requirement.

Table 10. Time Schedule for Compliance with Final Copper Effluent Limitations

Task No.	Task Description	Compliance Date
1	Discharger shall complete implementation of a program to enhance source water treatment, to the extent practical	November 1, 2007
2	Discharger shall complete an evaluation of wastewater treatment alternatives that could potentially be implemented at the WWTF.	December 1, 2007
3	Discharger shall submit a progress report with results of 1) onsite wastewater treatment alternatives evaluation, and 2) source water treatment enhancement efforts. The progress report shall identify if these measures were adequate to achieve compliance with final copper effluent limitations (Task 8) or whether the Discharger will need to proceed with Tasks 4 through 7.	February 1, 2008
4	If necessary, after completion of Tasks 1 and 2, the Discharger shall initiate the development of a discharger-specific water effects ratio (WER) study and submit a WER study workplan.	May 1, 2008

Task No.	Task Description	Compliance Date
5	Discharger shall complete an evaluation to determine industrial and commercial sources of copper.	June 1, 2008
6	If industrial and/or commercial sources of copper are identified in Task 5, the Discharger shall complete and submit to the Regional Water Board Executive Officer, an evaluation of potential actions to impose on industrial and/or commercial dischargers to control copper discharges to the WWTF, and a time schedule for completion of the identified actions.	June 1, 2009
7	If a WER study is conducted, Discharger shall submit WER study results for Executive Officer approval.	November 1, 2009
8	Discharger shall comply with the final effluent limitations for copper, incorporating the results of the WER study if necessary.	May 18, 2010

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data.

When determining compliance with an AMEL, 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:

1. 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.

2. 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.

C Average Monthly Effluent Limitation (AMEL).

When less than daily monitoring is required, the monthly average shall be determined by summing the daily values and dividing by the number of days during the calendar month when monitoring occurred. If only one sample is collected in a calendar month, the value of the single sample shall constitute the monthly average.

D. Average Weekly Effluent Limitation (AWEL).

When less than daily monitoring is required, the weekly average shall be determined by summing the daily values and dividing by the number of days during the calendar week when monitoring occurred. If only one sample is collected in a calendar week, the value of the single sample shall constitute the weekly average. For any one calendar week during which no sample is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge (or when applicable, the median determined by subsection B above for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

ATTACHMENT A – DEFINITIONS

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

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

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

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

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

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

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

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

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

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

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Discharger-Specific WER is a WER that is applied to individual pollutant limits in an NPDES permit issued to a particular permit holder. A discharger-specific WER applies only to the applicable limits in the discharger's permit. Discharger-specific WERs are distinguished from WERs that are developed on a waterbody or watershed basis as part of a water quality standards action resulting in the adoption of a site-specific objective.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Infeasible means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

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

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

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

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

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

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

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

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

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges

to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

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

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

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

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

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

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

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

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

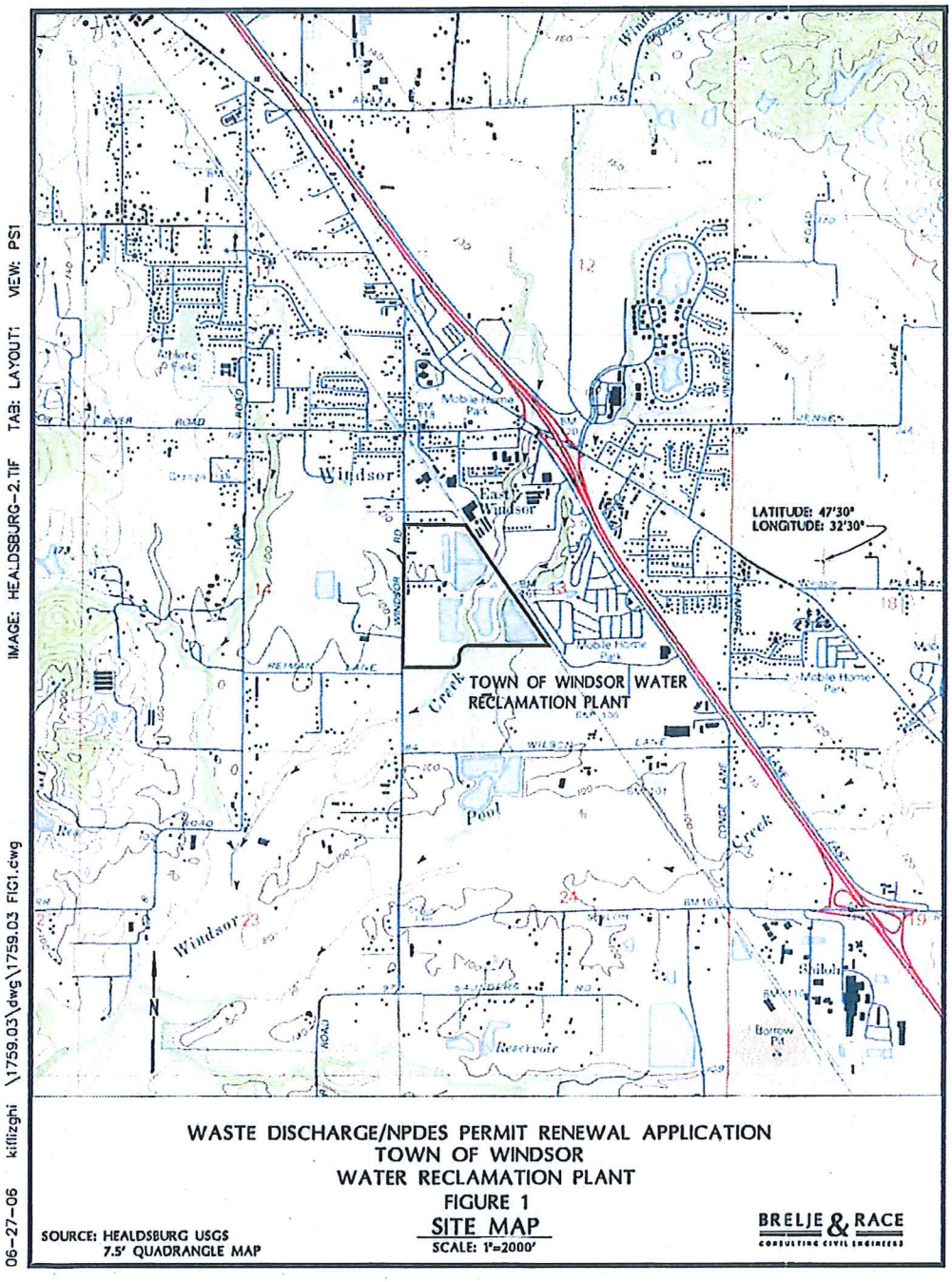
n is the number of samples.

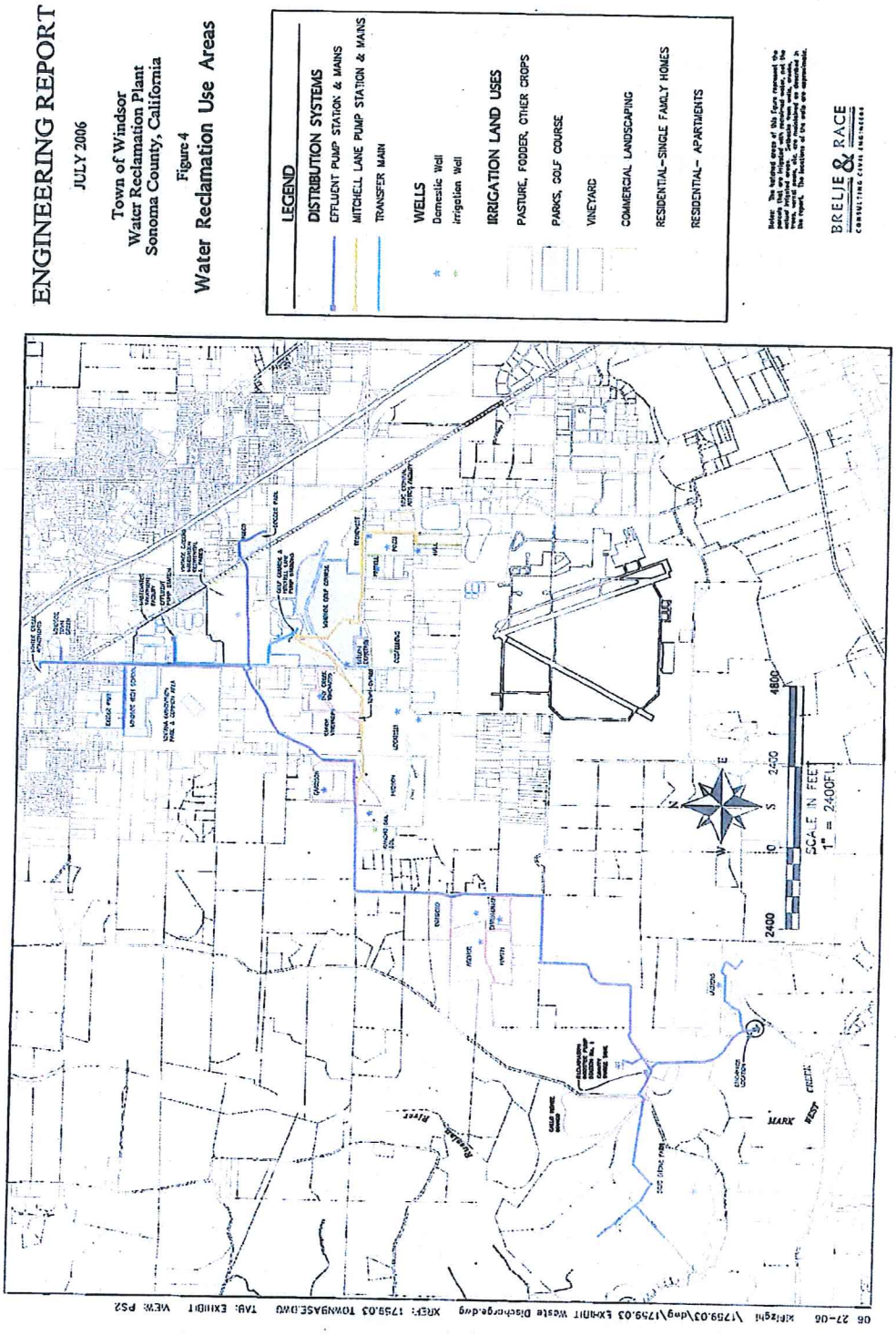
Toxicity Identification Evaluation (TIE) is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (See TIE definition above)

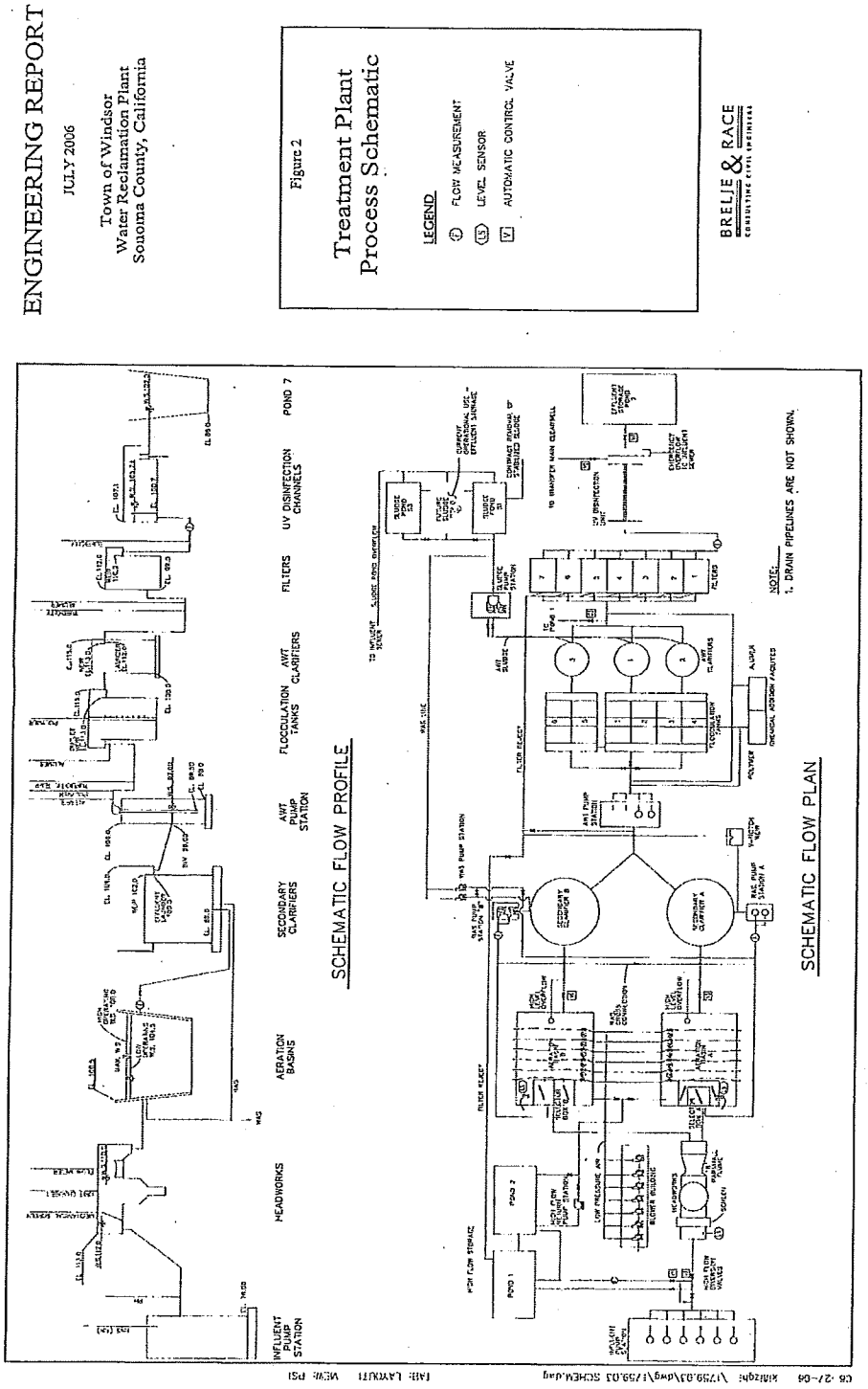
Water-Effect Ratio (WER) is an appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

ATTACHMENT B – MAP




ENGINEERING REPORT
JULY 2006
Town of Windsor
Water Reclamation Plant
Sonoma County, California
Figure 4
Water Reclamation Use Areas
LEGEND
DISTRIBUTION SYSTEMS
EFFLUENT PUMP STATION & MAINS
MITCHELL LANE PUMP STATION & MAINS
TRANSFER MAIN
WELLS
Domestic Well
Irrigation Well
IRRIGATION LAND USES
PASTURE, FODDER, OTHER CROPS
PARKS, GOLF COURSE
VINEYARD
COMMERCIAL LANDSCAPING
RESIDENTIAL-SINGLE FAMILY HOMES
RESIDENTIAL- APARTMENTS
BRELJE & RACE
CONSULTING CIVIL ENGINEERS
SCALE IN FEET
1" = 2400Ft.
2400
4800
MARK WEST CREEK
Russian River
XREF: 1759.03 TOWNBASE.DWG TAB: EXHIBIT WEB: PS2
06 27-06 K:\1759.03\dwg\1759.03 EXHIBIT Waste Discharge.dwg

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

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

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

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

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

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

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

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

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

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

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

   c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

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

5. Notice

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

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

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors

beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).).

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described

in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

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

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

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

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

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

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

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

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM
(Revised September 20, 2007)

Table of Contents

Attachment E – Monitoring and Reporting Program (MRP) E-2
I. General Monitoring Provisions E-2
II. Monitoring Locations E-2
III. Influent Monitoring Requirements E-3
A. Monitoring Location INF-001 E-3
IV. Effluent Monitoring Requirements E-3
A. Monitoring Location EFF-001 E-3
B. Monitoring Location EFF-002 E-3
V. Whole Effluent Toxicity Testing Requirements E-4
A. Acute Toxicity Testing E-4
B. Chronic Toxicity Testing E-6
C. Chronic Toxicity Reporting E-8
VI. Land Discharge Monitoring Requirements E-9
VII. Reclamation Monitoring Requirements E-9
VIII. Receiving Water Monitoring Requirements – Surface Water and Groundwater ... E-9
A. Surface Water Monitoring Location RSW-001 E-9
B. Surface Water Monitoring Location RSW-002 E-10
IX. Other Monitoring Requirements E-10
A. Monitoring Location INT-001 E-10
B. Monitoring Location INT-002 E-10
X. Reporting Requirements E-11
A. General Monitoring and Reporting Requirements E-11
B. Self Monitoring Reports (SMRs) E-11
C. Discharge Monitoring Reports (DMRs) E-14
D. Other Reports E-14

List of Tables

Table E-1. Summary of Discharge Points and Monitoring Station Locations E-2
Table E-2. Influent Monitoring E-3
Table E-4. Effluent Monitoring for Monitoring Location EFF-002 ..... E-4
Table E-5. Receiving Water Monitoring Requirements for Monitoring Location RSW-001 ... E-9
Table E-6. Receiving Water Monitoring Requirements for Monitoring Location RSW-002 .. E-10
Table E-7. Effluent Filter Monitoring (Monitoring Location INT-001) E-10
Table E-8. Effluent Filter Monitoring (Monitoring Location 1NT-002) E-11
Table E-9. Monitoring Periods and Reporting Schedule E-12
Table E-5. Receiving Water Monitoring Requirements for Monitoring Location RSW-001 .. E-18
Table E-6. Receiving Water Monitoring Requirements for Monitoring Location RSW-002 .. E-19
Table E-7. Summary of Discharge Points and Monitoring Station Locations E-19

List of Attachments

Attachment E-1 ..... E-19
Attachment E-2 ..... E-20

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 California regulations.

I. GENERAL MONITORING PROVISIONS

A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed one hour.

B. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 CFR Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharger monitoring reports.

C. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

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. Summary of Discharge Points and Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	INF-001	Untreated wastewater influent collected at the plant headworks, at a representative point preceding primary treatment
---	INT-001	Influent to Tertiary Filters
---	INT-002	Tertiary Filter Effluent prior to UV disinfection unit
001	EFF-001	Treated, disinfected wastewater immediately following UV disinfection process before discharge to storage
002	EFF-002	Treated, disinfected wastewater after storage pond, but before effluent contacts receiving water (Control Valve)
---	RSW-001	Mark West Creek surface water upstream beyond influence of the discharge
---	RSW-002	Mark West Creek surface water at the point of discharge or other location approved by the Executive Officer
003A	REC-003A	Treated, UV disinfected tertiary effluent delivered to reclamation system
003B	REC-003B	Treated, UV and chlorine disinfected tertiary effluent delivered to Windsor High School
004	EFF-001	Treated, UV disinfected effluent delivered to the Geysers recharge pipeline

INF- Influent; INT- Internal; EFF- Effluent; RSW- Receiving Surface Water; REC- Reclamation

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	8-hour composite	Weekly	Standard Methods
Total Suspended Solids	mg/L	8-hour composite	Weekly	Standard Methods
Flow (Mean and Peak)	mgd	Continuous	Daily	Meter

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor disinfected, advanced treated effluent at Monitoring Location EFF-001 as follows:

Table E-3. Effluent Monitoring for Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	8-hour composite	Weekly	Standard Methods
Total Suspended Solids	mg/L	8-hour composite	Weekly	Standard Methods)
Hydrogen Ion	pH units	Grab	Daily	Standard Methods
Total Coliform Organisms[1]	MPN/100 mL	Grab	Daily	Standard Methods
Operational UV Dose[2]	mW-s/cm	Calculation[3]	30-minute intervals	---
Flow (Mean and Peak)	mgd	Continuous	Daily	Meter

B. Monitoring Location EFF-002

1. The Discharger shall monitor disinfected, advanced treated effluent at Monitoring Location EFF-002 when discharging at Discharge Point 002 (discharge to Mark West Creek) as follows:

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1 Report daily test results and 7-day medians
2 Report daily average and lowest daily operational UV dose.
3 UV dose is calculated from UV transmittance and exposure time, using lamp age and sleeve fouling factors.

Table E-4. Effluent Monitoring for Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
BOD (20° C, 5-day)	mg/L	Grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods
Hydrogen Ion	pH units	Grab	Daily	Standard Methods
Dissolved Oxygen	mg/L	Grab	Daily	Standard Methods
Chlorine Residual	mg/L	Grab	Daily	Standard Methods
Temperature	° C	Grab	Daily	Standard Methods
Ammonia Nitrogen	mg/L	Grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	Calculation
Nitrate Nitrogen	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	Grab	Monthly	Standard Methods
Total Phosphorus	mg/L	Grab	Monthly	Standard Methods
Acute Toxicity Bioassay	Percent survival	Grab	Monthly	*See Section V.A*
Chronic Toxicity Bioassay	TUc	Grab	2x/year	*See Section V.B*
Hardness	mg/L	Grab	Monthly, concurrently with copper	Standard Methods
Copper	ug/L	Grab	Monthly	USEPA Method 200.8 (2 ug/L)
Priority Pollutants [4]	ug/L	Grab	1x/year	40 CFR 136
Flow	mgd	Continuous	Daily	Meter
Dilution Rate	% of stream flow	Calculation	Daily	---

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Discharger shall conduct acute toxicity testing to determine compliance with the Basin Plan narrative toxicity objective. The Discharger shall meet the following acute toxicity testing requirements:

1. **Test Frequency**. The Discharger shall conduct monthly acute toxicity testing, when discharging at Discharge Point 002 (discharge to Mark West Creek).

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[4] Those pollutants identified as Compound Nos. 1 – 126 by the California Toxics Rule at 40 CFR 131.38 (b) (1). Samples shall be collected on the same day as receiving water samples are collected for analysis of the priority pollutants. Analyses for the priority pollutants shall be conducted in accordance to methods established at 40 CFR 136, or if no method is specified for a pollutant at 40 CFR 136, in accordance to methods approved by the State Water Resources Control Board or the Regional Water Board.

2. **Sample Type**. For 96-hour static renewal or 96-hour static non-renewal testing, grab samples shall be collected and shall be representative of the volume and quality of the pond discharge. Effluent samples shall be collected at Monitoring Location EFF-002. Grab samples are permitted in place of 24-hour composite samples because the storage pond provides compositing of the effluent.

3. **Test Species**. Test species for acute testing shall be with an invertebrate, the water flea, *Ceriodaphnia dubia*, and a vertebrate, the rainbow trout, *Oncorhynchus mykiss*, for at least the first two suites of tests conducted within 12 months after the effective date of the Order. After this screening period, monitoring shall be conducted monthly using the most sensitive species. At least once every five years, the Discharger shall re-screen with the two species listed above and continue routine monitoring with the most sensitive species.

4. **Test Methods**. The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.

5. **Test Dilutions.** The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-002, when discharging to surface waters.

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

7. **Accelerated Monitoring.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival) and the testing meets all test acceptability criteria, the Discharger shall take two more samples, one within 14 days, and one within 21 days of receiving the initial sample result. If any of the additional samples do not comply with the three sample median minimum limitation (90 percent survival), the Discharger shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with Section VI.C.2.c of the Order. If the two additional samples are in compliance with the acute toxicity requirement and the testing meets all test acceptability criteria, then a TRE will not be required. If the discharge has ceased before the additional samples could be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the acute toxicity effluent limitation.

8. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results exceeding an effluent limitation or trigger. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

9. **Reporting**. Test results for acute toxicity tests shall be reported according to the acute toxicity manual Chapter 12 (Report Preparation) or in an equivalent format that clearly demonstrates that the Discharger is in compliance with effluent limitations and other permit requirements.

B. Chronic Toxicity Testing

The Discharger shall conduct chronic toxicity testing to demonstrate compliance with the monitoring requirements for chronic toxicity. The Discharger shall meet the following chronic toxicity testing requirements:

1. **Test Frequency.** The Discharger shall conduct chronic toxicity testing two times per year, during the discharge season.

2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the samples shall be 24-hour composite and shall be representative of the volume and quality of the discharge. The effluent sample shall be collected at Monitoring Location EFF-002. Grab samples may be permitted in place of 24-hour composite samples if the Discharger demonstrates, to the Executive Officer's satisfaction, that the storage pond provides compositing of the effluent.

3. **Test Species.** Test species for chronic testing shall be a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth test), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and a plant, the green alga, *Selanastrum capricornutum* (growth test).

4. **Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (USEPA Report No. EPA-821-R-02-013, 4th or subsequent editions).

5. **Test Dilutions.** The chronic toxicity test shall be conducted using a series of at least five dilutions and a control. The series shall consist of the following dilution series: 12.5, 25, 50, 75, and 100 percent effluent. Control and dilution water should be receiving water at an appropriate location upstream of the discharge point. Laboratory water may be substituted for receiving water, as described in the manual, upon approval by the Regional Water Board Executive Officer. Specifically, for the Selenastrum capricornutum test, synthetic laboratory water with a hardness similar to the receiving water shall be used as the control and dilution water. If the dilution water used is different from the culture water, a second control using culture water shall be used.

6. **Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall

be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

7. **Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger shall re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

8. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results exceeding an effluent limitation or trigger.

9. **Accelerated Monitoring Requirements**. If the result of any chronic toxicity test exceeds the chronic toxicity trigger of 1.0 TUc specified in section VI.C.2.a. of the Order and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional effluent samples, one test conducted approximately every week, over a four-week period. Testing shall commence within 14 days of receipt of the sample results of the exceedance of the chronic toxicity effluent limitation. If the discharge will cease before the additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the chronic toxicity effluent limitation. The following protocol shall be used for accelerated monitoring and TRE implementation:

   a. If the results of four consecutive accelerated monitoring tests do not exceed the effluent limitation, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board Executive Officer may require that the Discharger initiate a TRE.

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

   c. If the result of any accelerated toxicity test exceeds an effluent limitation or trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the effluent limitation during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

i. Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;
ii. Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
iii. A schedule for these actions.

C. Chronic Toxicity Reporting

1. **Routine Reporting**. Test results for chronic tests shall be reported according to the acute and chronic manuals and the Monitoring and Reporting Program and shall be attached to the self-monitoring report. Test results shall include, at a minimum, for each test:

   a. sample date(s)
   b. test initiation date
   c. test species
   d. end point values for each dilution (e.g., number of young, growth rate, percent survival)
   e. NOEC value(s) in percent effluent
   f. IC15, IC25, IC40, and IC50 values (or EC15, EC25...etc.) in percent effluent
   g. TUc values (100/NOEC, 100/IC25, 100/ EC25)
   h. Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable)
   i. NOEC and LOEC values for reference toxicant test(s)
   j. IC50 or EC50 value(s) for reference toxicant test(s)
   k. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia)
   l. Statistical methods used to calculate endpoints.
   m. The statistical output page, which includes the calculation of percent minimum significant difference (PMSD)

2. **Quality Assurance Reporting**. Because the permit requires sublethal hypothesis testing endpoints from Methods 1000.0, 1002.0, and 1003.0 in the test methods manual titled *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002), with-in test variability must be reviewed for acceptability, and variability criteria (upper and lower PMSD bounds) must be applied, as directed under section 10.2.8 – *Test Variability* of the test methods manual. Under section 10.2.8, the calculated PMSD for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 – *Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits*, following the review critera in paragraphs 10.2.8.2.1 through 10.2.8.2.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported.

3. **Compliance Summary**: 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 (routine, accelerated, or TRE). The final report shall clearly demonstrate that the Discharger is in compliance with effluent limitations and other permit requirements.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

This section is not applicable to the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility as treated wastewater is not discharged to or applied to land for the purpose of disposal. The Town of Windsor reclaims treated wastewater, thus the Town has Reclamation Monitoring Requirements rather than Land Discharge Monitoring Requirements.

VII. RECLAMATION MONITORING REQUIREMENTS

During periods of reclamation, the Discharger shall monitor the recycled water distribution system in the proximity of use areas with the highest potential for public exposure (e.g., subdivisions, neighborhood parks, high school, sports fields, etc). A grab sample shall be collected at one sample location per week and analyzed for total coliform and *Escherichia coli*. The bacteriological samples must enumerate biological activity and not just indicate a presence or absence. Sampling stations shall be approved by the Regional Water Board Executive Officer and Department of Health Services.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Surface Water Monitoring Location RSW-001

1. The Discharger shall monitor Mark West Creek at Monitoring Location RSW-001, during periods of discharge to Mark West Creek, as follows:

Table E-5. Receiving Water Monitoring Requirements for Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	Grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods
Hydrogen Ion	pH units	Grab	Weekly	Standard Methods
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Temperature	° C	Grab	Weekly	Standard Methods
Ammonia Nitrogen	mg/L	Grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	calculation
Nitrate Nitrogen	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	Grab	Monthly	Standard Methods
Total Phosphorus	mg/L	Grab	Monthly	Standard Methods
Priority Pollutants [1]	µg/L	Grab	1x / year	40 CFR 136
Hardness ($CaCO_3$)	mg/L	Grab	Concurrent with Priority Pollutant Sampling	Standard Methods

B. Surface Water Monitoring Location RSW-002

1. The Discharger shall monitor Mark West Creek at Monitoring Location RSW-002, during periods of discharge to Mark West Creek, as follows:

Table E-6. Receiving Water Monitoring Requirements for Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	Grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	Grab	Weekly	Standard Methods
Hydrogen Ion	pH units	Grab	Weekly	Standard Methods
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Temperature	° C	Grab	Weekly	Standard Methods
Ammonia Nitrogen	mg/L	Grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	calculation
Nitrate Nitrogen	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	Grab	Monthly	Standard Methods
Total Phosphorus	mg/L	Grab	Monthly	Standard Methods
Hardness	mg/L	Grab	Monthly	Standard Methods

IX. OTHER MONITORING REQUIREMENTS

A. Monitoring Location INT-001

1. The Discharger shall monitor flow to the tertiary filters at Monitoring Location INT-001 to calculate the surface loading rate as follows:

Table E-7. Effluent Filter Monitoring (Monitoring Location INT-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Surface Loading Rate	gpm/ft^2	Calculation	Daily	---

B. Monitoring Location INT-002

1. The Discharger shall monitor effluent from the tertiary filters at Monitoring Location INT-002 as follows:

Table E-8. Effluent Filter Monitoring (Monitoring Location 1NT-002)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity [5], [6], [7]	NTU	Continuous	Continuous	Meter
Transmittance [8]	Percent	Continuous	Continuous	Meter

C. Visual Monitoring of Discharge (EFF-002) and Receiving Water (RSW-001 and RSW-002)

Visual observations of the discharge and the receiving water shall be recorded monthly and on the first day of each intermittent discharge. Visual monitoring shall include, but not be limited to observations for floating materials, coloration, objectionable aquatic growths, oil and grease films, and odors. Visual observations shall be recorded and included in the Discharger's monthly monitoring reports.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

2. **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.

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

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5 The daily maximum and 95th percentile turbidity results shall be reported on the monthly monitoring reports.
6 The recorded data shall be maintained by the Discharger for at least five years.
7 Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours.
8 Report daily average and lowest daily transmittance

site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

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

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

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	August 1, 2007	All	First day of second calendar month following month of sampling
Hourly	August 1, 2007	Hourly	First day of second calendar month following month of sampling
Daily	August 1, 2007	Midnight through 11:59 PM	First day of second calendar month following month of sampling
Weekly	August 5, 2007	Sunday through Saturday	First day of second calendar month following month of sampling
Monthly	August 1, 2007	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Quarterly	October 1, 2007	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Annually	January 1, 2008	January 1 through December 31	February 1 of each year
Once during Order term	October 1, 2010	October 1 Through May 15	July 1, 2011

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.

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

f. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median, or other computation. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment. During periods of no discharge, the reports shall certify "no discharge".

g. The Discharger shall attach a cover letter to the SMR. The cover letter shall include the following:
   i. Identification of facility: Name, address, WDID number;
   ii. Date of report and monitoring period;
   iii. Identification of all violations discharge prohibitions, effluent limitations or other discharge requirements found during the monitoring period, and details of the violations, including parameters, magnitude, frequency, test results and dates and cause of the violation(s). Identified violations must include a description of the requirement that was violated and a description of the violation;

iv. Discussion of corrective actions taken or planned to resolve the violation(s) and prevent recurrence; and the proposed time schedule for corrective actions.

h. 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
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

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

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions VI.B.2., VI.C.2., and VI.C.3. of this Order. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provision VI.C.7 of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report

due date in compliance with SMR reporting requirements described in subsections X.B and X.D.5.

2. Water Reclamation System

   a. **Reclamation Operations Reporting.** The Discharger shall submit reports pertaining to the operation, performance, monitoring, and other activities related to water reclamation.

      i. **Quarterly Recycled Water Report**. The Discharger shall submit a quarterly recycled water summary report, as required by section 13523.1(b)(4) of the Water Code, containing the following information:

         (a) Total volume of recycled water supplied to all recycled water users for each month of the reporting period;

         (b) Total number of recycled water use sites;

         (c) Locations of recycled water use sites, including a map and tabular summary with acreage and name of property owner;

         (d) A summary of user inspections conducted by the Discharger, including the number and location of any cross-connections and/or improper backflow prevention devices and all observations of misuse of recycled water;

         (e) A summary of recycled water user violations of the Discharger's rules and regulations;

         (f) A summary of operational problems, plant equipment malfunctions, and any diversion of recycled water which does not meet the requirements specified in this Order.

         (g) A record of equipment or process failures initiating an alarm, as well as any corrective and preventative actions;

         (h) When new user(s) are added to the reclamation system, the Discharger shall notify the Regional Water Board of the new users in accordance with Water Reclamation Provision C.5 in Attachment G. The notice shall include the following: site location, acreage involved, County Assessor Parcel number(s), name of property owner and/or user, estimated volume of recycled water to be used and a description of the recycled water management facilities and operations plan.

      ii. **Annual Recycled Water Report**. The annual report shall contain, but not be limited to, a review of the operations curve, irrigation volumes, rainfall, and acreage under irrigation. In addition, the annual report shall contain a description of the incidental discharges to surface water, scheduled and nonscheduled maintenance of the reclamation system appurtenances and irrigation areas, and enforcement and monitoring activities that occurred during the previous year, and identification of any problems and how the

problems were addressed. In addition, the annual recycled water report shall include a summary of all cross-connection testing and back-flow prevention activities (inspections, maintenance) and a summary of any problems identified, or certification that no problems occurred.

b. **Groundwater Monitoring Program.** The Discharger shall submit groundwater monitoring information specified in its groundwater monitoring program developed in accordance with Provision VI.C.2.d of the Order.

3. **Annual Report.** The Discharger shall submit an annual report to the Regional Water Board for each calendar year. The report shall be submitted by February 1st of the following year. The report shall, at a minimum, include the following:

   a. Both tabular and, where appropriate, graphical summaries of the monitoring data and disposal records from the previous year. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 CFR Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted SMR.

   b. A comprehensive discussion of the facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

   c. Sanitary Sewer System Reporting. The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's activities within the sanitary sewer system over the previous twelve months. The report shall contain:

      i. A description of any change in the local legal authorities enacted to implement the Sewer System Management Plan (SSMP);

      ii. A summary of the SSOs that occurred in the past year. The summary shall include the date, location of overflow point, affected receiving water (if any), estimated volume, and cause of the SSO, and the names and addresses of the responsible parties as well as the names and addresses of the property owner(s) affected by the sanitary sewer overflow.

      iii. A summary of compliance and enforcement activities during the past year. The summary shall include fines, other penalties, or corrective actions taken as a result of the SSO. The summary shall also include a description of public participation activities to involve and inform the public;

      iv. Documentation that all feasible steps to stop and mitigate impacts of sanitary sewer overflows have been taken.

d. Source Control Activity Reporting. The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's source control activities, as required by Provision VI.C.5.b. of Order No. R1-2007-0013, during the past year. This annual report is due on February 1st of each year.

   i. A copy of the source control standards.

   ii. A description of the waste hauler permit system.

   iii. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of any industrial or commercial users under surveillance by the Discharger, an explanation of whether they were inspected, sampled, or both, the frequency of these activities at each user, and the conclusions or results from the inspection or sampling of each user.

   iv. A summary of any waste survey results.

   v. A summary of public participation activities to involve and inform the public.

e. Biosolids handling and disposal activity reporting. The Discharger shall submit, as part of its annual report to the Regional Water Board, a description of the Discharger's solids handling, disposal and reuse activities over the previous twelve months. At a minimum, the report shall contain:

   i. Annual sludge production, in dry tons and percent solids

   ii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.) and a solids flow diagram.

   iii. Methods of final disposal of sludge:

      (a) For any portion of sludge discharged to a sanitary landfill, the Discharger shall provided the volume of sludge transported to the land fill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs order number for the regulated landfill, and the landfill classification.

      (b) For any portion of sludge discharged through land application, the Discharger shall provide the volume of biosolids applied, the date and locations where biosolids were applied, the Regional Water Board's WDRs order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, and, if applicable, corrective

actions taken or planned to bring the discharge into compliance with WDRs.

(c) For any portion of sludge further treated through composting, the Discharger shall provide a summary of the composting process, the volume of sludge composted, and a demonstration and signed certification statement that the composting process and final product met all requirements for Class A biosolids.

ATTACHMENT E-2. INTERIM RECEIVING WATER MONITORING REQUIREMENTS (Revised August 16, 2007)

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Locations (Upstream)

1. The Discharger shall monitor Mark West Creek at Monitoring Location RSW-001, identified in Table E-7 below, as follows in Table E-5.

Table E-5. Receiving Water Monitoring Requirements for Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	grab	Weekly	Standard Methods
Hydrogen Ion	pH units	grab	Weekly	Standard Methods
Dissolved Oxygen	mg/L	grab	Weekly	Standard Methods
Temperature	°C	grab	Weekly	Standard Methods
Ammonia Nitrogen	mg/L	grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	calculation
Nitrate Nitrogen	mg/L	grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	grab	Monthly	Standard Methods
Total Phosphorus	mg/L	grab	Monthly	Standard Methods
Priority Pollutants [7]	µg/L	grab	1x / year	40 CFR 136
Hardness ($CaCO_3$)	mg/L	grab	Concurrent with Priority Pollutant Sampling	Standard Methods

B. Monitoring Locations (Downstream)

1. The Discharger shall monitor downstream receiving waters, when discharging to surface waters, at Monitoring Locations RSW-003 when the creek flow is contained in its banks, and at RSW-004 during high creek flow, as follows in Table E-6. Monitoring locations are identified in Table E-7 below.

Table E-6. Receiving Water Monitoring Requirements for Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD (20° C, 5-day)	mg/L	grab	Weekly	Standard Methods
Total Suspended Solids	mg/L	grab	Weekly	Standard Methods
Hydrogen Ion	pH units	grab	Weekly	Standard Methods
Dissolved Oxygen	mg/L	grab	Weekly	Standard Methods
Temperature	° C	grab	Weekly	Standard Methods
Ammonia Nitrogen	mg/L	grab	Monthly	Standard Methods
Unionized Ammonia	mg/L	---	Monthly	calculation
Nitrate Nitrogen	mg/L	grab	Monthly	Standard Methods
Organic Nitrogen	mg/L	grab	Monthly	Standard Methods
Total Phosphorus	mg/L	grab	Monthly	Standard Methods
Hardness	mg/L	grab	Monthly	Standard Methods

Table E-7. Summary of Discharge Points and Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	INF-001	Untreated wastewater influent collected at the plant headworks, at a representative point preceding primary treatment
---	INT-001	Influent to Tertiary Filters
---	INT-002	Tertiary Filter Effluent prior to UV disinfection unit
001	EFF-001	Treated, disinfected wastewater immediately following UV disinfection process before discharge to storage
002	EFF-002	Treated, disinfected wastewater after storage pond, but before effluent contacts receiving water (Control Valve)
---	RSW-001	Mark West Creek surface water upstream beyond influence of the discharge
---	RSW-002	Mark West Creek surface water at the point of discharge or other location approved by the Executive Officer
---	RSW-003	Mark West Creek surface water, north bank, approximately 800 feet downstream of discharge point
---	RSW-004	Mark West Creek surface water at the Wohler Road Bridge over Mark West Creek, approximately 2 miles downstream of discharge point
003A	REC-003A	Treated, UV disinfected tertiary effluent delivered to reclamation system
003B	REC-003B	Treated, UV and chlorine disinfected tertiary effluent delivered to Windsor High School

INF- Influent; INT- Internal; EFF- Effluent; RSW- Receiving Surface Water; REC- Reclamation

ATTACHMENT F – FACT SHEET

Table of Contents

Attachment F – Fact Sheet F-3
I. Permit Information F-3
II. Facility Description F-4
A. Description of Collection System and Wastewater and Biosolids Treatment or Controls F-4
B. Discharge Points and Receiving Waters F-6
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-7
D. Compliance Summary F-8
E. Planned Changes F-9
III. Applicable Plans, Policies, and Regulations F-12
A. Legal Authorities F-12
B. California Environmental Quality Act (CEQA) F-12
C. State and Federal Regulations, Policies, and Plans F-15
D. Impaired Water Bodies on CWA 303(d) List F-20
E. Other Plans, Polices and Regulations F-20
IV. Rationale For Effluent Limitations and Discharge Specifications F-21
A. Discharge Prohibitions F-22
B. Technology-Based Effluent Limitations F-26
C. Water Quality-Based Effluent Limitations (WQBELs) F-28
D. Final Effluent Limitations F-45
E. Interim Effluent Limitations F-51
F. Land Discharge Specifications F-53
G. Reclamation Specifications F-53
V. Rationale for Receiving Water Limitations F-54
VI. Rationale for Monitoring and Reporting Requirements F-55
A. Influent Monitoring F-55
B. Effluent Monitoring F-55
C. Whole Effluent Toxicity Testing Requirements F-55
D. Receiving Water Monitoring F-59
E. Other Monitoring Requirements F-59
VII. Rationale for Provisions F-60
A. Standard Provisions F-60
B. Regional Water Board Standard Provisions. F-60
C. Special Provisions F-61
1. Reopener Provisions F-61
2. Special Studies and Additional Monitoring Requirements F-62
3. Best Management Practices and Pollution Prevention F-63
4. Construction, Operation, and Maintenance Specifications F-63
5. Special Provisions for Municipal Facilities (POTWs Only) F-63
6. Other Special Provisions – Stormwater F-66
7. Compliance Schedules F-66

VIII. Public Participation F-67
A. Notification of Interested Parties F-67
B. Written Comments F-67
C. Public Hearing F-68
D. Waste Discharge Requirements Petitions F-68
E. Information and Copying F-69
F. Register of Interested Persons F-69
G. Additional Information F-69

List of Tables

Table F-1 Facility Information F-3
Table F-2. Historic Technology-Based Effluent Limitations and Monitoring Data – Discharge Point 001 ..... F-7
Table F-3. Historic Water Quality-Based Effluent Limitations and Monitoring Data – Discharge Point 002 ..... F-8
Table F-4. Schedule for Completion of Tasks to Address Long-Term Storage and Disposal F-11
Table F-5. Basin Plan Beneficial Uses F-16
Table F-6. Summary of Technology-based Effluent Limitations for Treatment Plant Effluent at Discharge Point 001 (Discharge to Storage Pond) F-28
Table F-7. Applicable Water Quality Criteria and Objectives for Priority Pollutants Reported in Detectable Concentrations in Windsor's Effluent F-30
Table F-8. Summary of Reasonable Potential Analysis for Windsor WWTF F-36
Table F-9. Calculation of Long Term Averages for Copper. F-42
Table F-10. Calculations for Final WQBELs for Copper F-42
Table F-11. Summary of Water Quality-based Effluent Limitations F-43
Table F-12. Whole Effluent Chronic Toxicity Monitoring Results F-45
Table F-13. Summary of Final Effluent Limitations for Discharge Point 001 (Discharge to Storage Ponds) F-49
Table F-14. Summary of Final Effluent Limitations for Discharge Point 002 (Direct Discharge to Mark West Creek) F-51

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	1B820370SON
Discharger	Town of Windsor
Name of Facility	Windsor Wastewater Treatment, Reclamation and Disposal Facility
Facility Address	8400 Windsor Road Windsor, California 95492 Sonoma County
Facility Contact, Title and Phone	Richard W. Burtt, Public Works Director, (707) 838-5343
Authorized Person to Sign and Submit Reports	Ronald E. Laufer, Interim Wastewater Treatment Plant Supervisor, (707) 838-1006 Michael Carson, Maintenance Superintendent-Utilities, (707) 838-1012 Or current wastewater treatment plant supervisor with proper signatory authorization
Mailing Address	P.O. Box 100, Windsor, California 95492
Billing Address	P.O. Box 100, Windsor, California 95492
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	No
Source Control Program	Yes
Reclamation Requirements	Yes – Master Reclamation Permit
Facility Permitted Flow	2.25 mgd
Facility Design Flow	2.25 mgd average dry weather flow 7.2 mgd peak weekly wet weather flow
Watershed	Russian River Hydrologic Unit - Mark West Hydrologic Subarea
Receiving Water	Mark West Creek
Receiving Water Type	Inland surface water

A. The Town of Windsor (hereinafter Discharger) is the owner and operator of the Windsor Wastewater Treatment, Reclamation, and Disposal facility (hereinafter Facility), a publicly owned treatment works (POTW), as shown on Attachment B.

B. 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.

C. The Facility discharges wastewater to Mark West Creek, a water of the United States, and is currently regulated by Order No. R1-2002-0013 which was adopted on January 24, 2002 and expired on January 24, 2007. 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.

D. 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 July 24, 2006. Supplemental information was requested on October 4, 2006 and received on November 15, 2006. Additional supplemental information was received on February 1, 2007 and February 26, 2007.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service to the Town of Windsor and serves a population of approximately 26,500 residential, commercial and industrial users. The Discharger's wastewater makeup is approximately 90 percent residential flow and 10 percent combined commercial and industrial flows, on an average dry weather basis. The Discharger does not accept any septage or bulk loads into the Facility.

A. Description of Collection System and Wastewater and Biosolids Treatment or Controls

Collection System

The Discharger's wastewater collection system consists of 79 miles of public branch and trunk sewers, one mile of private branch sewers, 1,310 manholes, 525 cleanouts, and approximately 6,100 private service laterals. There are two siphons, located at Los Amigos and Rio Russo. Ninety percent of the flows reach the treatment plant by gravity. The Discharger also owns and operates three lift stations at Vintage Greens, Shiloh Greens, and Deere Creek.

The lowest point in the sewer system is at the plant influent pump station where three major trunk sewer systems from the service area feed into the plant. Construction of the Discharger's original wastewater collection system (including the North Trunk Sewer) was completed in 1964. Other trunk sewers were constructed in 1970 (South

Trunk Sewer), and in the late 1980s (Conde, Hembree, Brooks, and Los Amigos Trunk Sewers).

The Discharger estimates that it receives an average of 613,000 gpd from infiltration and inflow. The Discharger's current infiltration and inflow (I/I) program includes regular inspection and maintenance of its sewer system. The Discharger repairs sewers with root damage and opened joints and is installing sewer guards under manhole lids.

The Discharger is pursuing activities to develop and implement a collection system operation and maintenance (O&M) program that will include: 1) development and maintenance of an up-to-date collection system map; 2) routine preventative O&M activities, including collection system preventative maintenance and cleaning, and a database to record and track all activities; 3) prioritized deficiency list and rehabilitation activities, including regular visual and TV inspections of manholes and sewer pipes, ranking of the condition of sewer pipes, scheduling rehabilitation for problem areas, and a capital improvement plan; 4) training for operations and maintenance staff, and contractors; 5) establishment of equipment and replacement parts inventories to support its preventative maintenance program once it is in place; and 6) development of a Fats, Oils, and Grease (FOG) Control Program, including a grease trap ordinance and a residential FOG program.

Wastewater Treatment

The current Facility provides advanced wastewater treatment and has design capacities of 2.25 mgd, average dry weather flow (ADWF) and 7.2 mgd, peak weekly wet weather flow. The wastewater treatment facilities include biological secondary treatment utilizing extended air activated sludge aeration basins and secondary clarifiers; advanced wastewater treatment (AWT) that includes chemical addition facilities, flocculation tanks, AWT clarifiers, and sand filters; ultraviolet (UV) disinfection; and storage prior to reclamation, discharge to the Geysers recharge pipeline, and/or disposal. A portion of the treated and UV disinfected effluent is directed to a wet well for chlorination prior to being transferred to Windsor High School for toilet flushing and landscape irrigation. Attachment C provides a flow schematic of the Facility.

The Discharger reports that actual flows recorded between January 2000 and May 2006 are as follows:

Average Dry Weather Flow	1.6 mgd
Peak Weekly Wet Weather Flow	5.2 mgd
Highest Average Monthly Flow	4.7 mgd
Highest Daily Result	5.7 mgd

Storage Facilities

Five ponds provide 129 million gallons of storage capacity for the Discharger's advanced treated, UV disinfected effluent. Three additional ponds provide an added 36 million gallons of high flow storage volume when influent flows exceed the treatment capacity of the treatment plant. This combined storage volume of 165 million gallon is designed to handle an ADWF of up to 1.6 mgd.

The effluent storage ponds are not part of the treatment system and therefore, effluent limitations contained in this permit are applicable at the point of completion of treatment and disinfection. The effluent storage ponds allow the Discharger to balance influent flows with recycled water demand and its ability to discharge to receiving waters in compliance with discharge requirements.

Biosolids and Sludge Handling

The Discharger's sludge facilities include two sludge ponds and a sludge decant tank. The two sludge ponds provide 12.2 million gallons of sludge stabilization and storage capacity. A third pond, that currently provides 6.8 million gallons of effluent storage, will be converted to a sludge stabilization pond in the future. Within the ponds, sludge concentrates to a higher solids content and volatile suspended solids are degraded. Surface aerators provide for odor abatement. The sludge decant tank provides temporary holding and equalization capacity during sludge processing. Sludge can be pumped from outlets in the floor of the tank to dewatering units or to trucks. The tank is equipped with a floating decanter for removing supernatant that may accumulate on the surface. Sludge is typically pumped out of these ponds on an annual basis and hauled by an outside contractor to a site for beneficial land application of biosolids. The land application site is outside of this Regional Water Board's jurisdiction. The outside contractor manages the biosolids land application permit requirements in Regions 2 and 5 on behalf of the Discharger.

Solids and screenings from the headworks are currently disposed of at a municipal solid waste landfill.

B. Discharge Points and Receiving Waters

The Facility and receiving water discharge points are located in the Russian River Hydrologic Unit – Middle Russian River Hydrologic Area – Mark West Hydrologic Subarea (114.23).

Advanced treated effluent that is not reclaimed to the recycled water system is discharged from the effluent storage pond system to Mark West Creek (Discharge Serial No. 002, Latitude 38° 29' 39", Longitude 122° 51' 05") during the allowed discharge period from October 1 to May 14. Mark West Creek is tributary to the Russian River.

The rate of discharge is governed by flow conditions in Mark West Creek monitored at the Trenton-Healdsburg Bridge and is limited to one percent of the natural flow in the creek. The discharge from the City of Santa Rosa Laguna Subregional Wastewater Treatment, Conveyance, Reuse, and Disposal Facility enters Mark West Creek upstream of the Discharger's point of discharge, therefore the natural flow of Mark West Creek is determined daily by measuring the creek flow at Trenton-Healdsburg Bridge and subtracting the discharge flow reported by the City of Santa Rosa.

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

1. Effluent limitations contained in Order No. R1-2002-0013 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1-2002-0013 are as follows:

Table F-2. Historic Technology-Based Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter (units)	Effluent Limitations			Monitoring Data (From January 2002 – To May 2006)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Result	Highest Average Weekly Result	Highest Daily Result	No. of Violations
BOD (20°C, 5-day) (mg/L & lb/day)	10	15	20	7.0	18	18	1
	188	281	375	65	109	109	0
Total Suspended Solids (mg/L & lb/day)	10	15	20	2.2	5.5	5.5	0
	188	281	375	84	272	272	0
Total Coliform Organisms (MPN/100 ml)	---	2.2*	23	---	2*	30	1
BOD and TSS Percent Removal (percent)	85	---	--	97-99	---	---	0
Hydrogen Ion (pH Units)	Not less than 6.0 nor greater than 9.0			7.5	8.0	Range of 6.1** to 9.2***	1
Turbidity (NTU)	2	---	5/10	0.6	0.8	1.3	0

Notes: * 7-day median; ** minimum pH reported; *** maximum pH reported

2. Effluent limitations contained in Order No. R1-2002-0013 for discharges from Discharge Point 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order No. R1-2002-0013 are as follows:

Table F-3. Historic Water Quality-Based Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter (units)	Effluent Limitations			Monitoring Data (From January 2002 – To May 2006)			
	Average Monthly	Average Weekly	Maximum Daily	Results (range)	Average of all results	Median of all results	No. of Violations
Chlorine Residual (mg/L)	---	---	<0.1	All <0.1	---	---	0
Hydrogen Ion (pH Units)	Not less than 6.5 nor greater than 8.5			6.42-8.6			2
Toxicity (Acute)	The survival of test fish in 96-hour (static or continuous flow) bioassays in undiluted effluent samples shall equal or exceed 90 percent survival 67 percent of the time, and 70 percent survival 100 percent of the time.			All 100% survival	---	---	0
Nitrate (mg/L)	No effluent limitations in permit			3.0 - 9.8	6.39	6.4	---
Ammonia (mg/L)	No effluent limitations in permit			<0.2 - 0.7	0.15	0.2	---
Unionized Ammonia (mg/L)	No effluent limitations in permit			<0.01 – 0.24	0.1	0.2	---
Organic Nitrogen (mg/L)	No effluent limitations in permit			<0.4 – 1.2	0.79	1.0	---
Total Phosphorus (mg/L)	No effluent limitations in permit			0.7 – 3.2	1.75	1.6	---
BOD (mg/L)	No effluent limitations in permit			<2.0 – 8.5	3.5	3.2	---
Total Suspended Solids (mg/L)	No effluent limitations in permit			<1.0 – 34	7.1	4.0	---
Temperature (°C)	No effluent limitations in permit			7 - 21	15.2	---	---

Notes: ** minimum pH reported; *** maximum pH reported

D. Compliance Summary

During the period of January 2002 to May 2006, the Discharger had five violations of effluent limitations. There were three violations of technology-based effluent limitations at Discharge Point 001. On April 30, 2002, the Discharger exceeded its average weekly BOD limitation of 15 mg/L with a result of 18 mg/L. On July 17, 2003 the Discharger exceeded its maximum pH effluent limitation of 9.0 with a result of 9.2. On November 26, 2003, the Discharger exceeded its maximum daily coliform effluent limitation of 23 MPN/100 mL with a result of 30 MPN/100 mL. There were also two violations of the water quality-based effluent limitation for pH at Discharge Point 002. On March 6, 2004 the Discharger violated the lower limit of 6.5 with a result of 6.42 and on February 25, 2005, the Discharger exceeded the upper limit of 8.5 with a result of 8.6. The Discharger's monitoring reports

indicated that the pH and coliform exceedances were due to sample analysis errors, but sufficient information was not provided to support this conclusion.

All of these violations were minor violations because each sample result was only slightly over the effluent limitation and there were only occasional, single exceedances for any given effluent limitation. The Discharger responded rapidly to minor violations to prevent reoccurrences.

During the period of January 2002 to December 2006, the Discharger reported five sanitary sewer overflows (SSO) from Town-owned sanitary sewer lines and lift stations and five SSOs from laterals on private property. Two of the spills from Town-owned infrastructure and one private lateral spill resulted in the release of untreated sewage to nearby creeks. The incidents resulted from blockages in sewer lines that were subsequently cleaned and/or repaired by the Town. The Town's spill response team responded quickly and efficiently to each spill event. The Town reported each SSO in accordance with permit requirements and monitored the creek in each instance to assess impacts on each creek.

During the period of January 2002 to December 2006, the Discharger reported five recycled water runoff incidents that released disinfected, tertiary recycled water to nearby creeks in violation of Discharge Prohibitions and Recycled Water Requirements in Order No. R1-2002-0013. Four of the events were caused by accidental recycled water line breaks and one event was caused by a stalled sprinkler reel at a privately owned irrigation site. The Town's spill response team responded quickly and efficiently to each spill event. The Town reported each recycled water spill in accordance with permit requirements and monitored the creeks in each instance to assess impacts on each creek.

E. Planned Changes

The Discharger does not anticipate any changes to the wastewater treatment plant in the next five years. All wastewater treatment system processes have capacities of at least 2.25 mgd ADWF and this capacity is anticipated to be sufficient to meet the Discharger's wastewater treatment needs for the next five years.

The Discharger is presently operating at the overall rated capacity of its water reclamation system. The currently limiting components of the water reclamation system are storage and irrigation capacities. Irrigation capacity is considered a secondary limitation. The Discharger regularly receives inquiries for significant expansion of its recycled water irrigation to which the Discharger is unable to commit due to storage limitations. Current summertime irrigation demand significantly exceeds summertime reclaimed water generation. Thus the Discharger's ability to reliably enter into additional irrigation supply agreements is limited by the ability to store recycled water generated in the spring for later summer irrigation. Upon expansion of the Discharger's currently available storage, it is anticipated that correspondingly increased irrigation lands will be secured, and that availability of lands for irrigation will not be a limiting factor to overall rated system capacity.

Extremely dry weather conditions during the winter of 2006-2007, demonstrated how crucial it is that the Discharger expand its reclamation system. The Discharger was unable to utilize its surface water disposal system for over a month when Mark West Creek flows were too low to dispose of a sufficient volume of effluent. The Discharger utilized its recycled water irrigation system to the maximum extent possible in compliance with the current Order's recycled water requirements (e.g., no ponding, no runoff, etc). The Discharger reported that the WWTF had influent flows of approximately 2 million gallons per day and was only able to irrigate approximately 150,000 gallons per day. In addition, the Discharger utilized its existing interagency agreement with the neighboring Airport-Larkfield-Wikiup Sanitation Zone (ALWSZ) and transferred 70 million gallons of effluent to the ALWSZ storage ponds. Nonetheless, the Discharger's ponds filled almost to the maximum engineered capacity. On January 31, 2007, the Discharger reported that it was within 20 days of completely filling its ponds and was in need of disposing of the water in violation of its permit – either by discharging to Mark West Creek at a rate in excess of the allowable one percent discharge rate, and/or by irrigating available fields at a rate that would cause ponding and runoff.

In order to increase overall rated system capacity, the Discharger must obtain additional storage, or implement other operational changes which would reduce the need for storage. Depending on the Town of Windsor's actual rate of growth, the Town estimates that approximately 40 million gallons of additional storage (or equivalent operational changes) will be required within the upcoming permit term and that an additional 75 million gallons would be required by 2015.

At the time that Order No. R1-2002-0013 was adopted, the Discharger planned on balancing its recycled water and discharge system with discharges to the City of Santa Rosa's Geysers pipeline and with a proposed expansion of existing storage ponds at the Windsor Golf Course. To date, neither of these projects has materialized, and additional storage is needed for the current and future recycled water system. Thus, the Discharger is currently pursuing three overall project alternatives to address its long-term storage and disposal needs: 1) additional storage ponds at a Town-owned site that was evaluated in the Discharger's Master Plan for Treatment, Storage and Disposal Environmental Impact Report (2000); 2) joint use project with adjacent water reclamation agencies (Sonoma County Water Agency and City of Santa Rosa); and 3) additional discharge capacity by moving the discharge point to the Russian River. The Discharger is working under the schedule identified in Table F-4 below.

Table F-4. Schedule for Completion of Tasks to Address Long-Term Storage and Disposal

Project	Tasks	Estimated Completion Dates
Ponds on Town-Owned Site (Ponds S and T)	Town Council Awarded Contract	November 2006
	Feasibility Study and Preliminary Analysis (including geotechnical, environmental, and engineering feasibility)	June 2007
	Preliminary Design	December 2007
	Final Design and Permitting	December 2008
	Construction	2009-2010
	Initial Filling and Startup	December 2010
Regional Joint Use Agreement	Update to Town Council	August 2006
	Additional meetings with SCWA and SR	On-going
	Review of impact of Ponds S & T analysis	April-May 2007
	Draft MOU	Summer 2007
River Discharge	Issued RFP for Feasibility Study	September 2006
	Select Consultant and Award Contract	October 2006
	Feasibility Analysis and Determination of Next Steps	April 2007

The Discharger is negotiating with the Sonoma County Water Agency for a short-term joint use with the ALWSZ WWTF that the SCWA operates. The Discharger is hoping to negotiate an agreement that would allow it to supplement the Discharger's current storage capacity by up to 50 million gallons for the next five or six years, while one or more of the projects identified Table F-4 is completed

On November 5, 2008, the Town formally decided to move forward with the Geysers Recharge Pipeline Connection Project (Geysers), by letter to the Regional Water Board Executive Officer dated February 11, 2009. The project consists of initially delivering an annual average flow of 0.53 mgd of recycled water to the Geysers (0.70 mgd in October through May and 0.20 mgd in June through September). Based on the terms of the agreement, the Town has the ability to increase deliveries to a maximum annual average flow of 0.75 mgd (0.92 mgd in October through May and 0.42 mgd in June through September). On July 21, 2010, the Discharger submitted a ROWD with a technical memorandum that includes a water balance to model the Discharger's existing treatment, discharge, and storage system to demonstrate the reliability of the Discharger's current storage, disposal and reclamation system and to identify the additional reliability that would be provided by the Discharger's connection to the Geysers pipeline. The water balance model demonstrates that, with the Geysers Project, the WWTF can effectively treat and reuse/dispose higher influent flows and improve the storage reliability that the Discharger currently has. The Discharger has initiated construction of its pump station and pipeline connection to Geysers pipeline and anticipates to complete construction and begin diverting its disinfected, treated effluent to the pipeline by July 2011.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWC) (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) and a Master reclamation permit pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with sections 13260 and 13520, respectively).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

This action also involves the adoption of a Master Reclamation Permit. The Town of Windsor has certified a final environmental impact report (EIR) in accordance with CEQA (Public Resources Code section 210000, et seq). The Town adopted Resolution No. 995-01 on February 7, 2001 certifying the Town of Windsor Water Reclamation Master Plan for Treatment, Storage, and Disposal Environmental Impact Report; and Resolution No. 1006-01 on March 20, 2001 adopting the Town of Windsor Water Reclamation Master Plan for Treatment, Storage, and Disposal (Reclamation Master Plan). The Town identified mitigation measures to reduce potential environmental impacts of the proposed reclamation activities.

As a responsible agency under CEQA, the Regional Water Board is required to consider the EIR and reach its own conclusions on whether and how to approve a permit for the Town's Reclamation Master Plan. Prior to approving the permit, the Regional Water Board considered the environmental effects of the Reclamation Master Plan as shown in the EIR. In considering alternatives and mitigation measures, the Regional Water Board only has the responsibility for mitigating or avoiding those direct or indirect environmental effects of those parts of the Reclamation Master Plan that are within its jurisdiction to approve. (Public Resources Code, Section 21002.1(d); California Code of Regulations, Title 14, Section 15096(g) and (h)). The Regional Water Board has required, as a condition of the permit, mitigation measures for those potentially significant impacts over which the Regional Water Board has authority. The

Regional Water Board finds that with mitigation, all potentially significant impacts of the Reclamation Master Plan will be reduced to levels of insignificance, as described below:

All project facilities would be located within areas that could be subject to seismic hazards. Damage to proposed storage and distribution facilities could result in secondary impacts associated with the release of reclaimed water. These impacts would be mitigated through compliance with Department of Safety of Dams (DSOD) regulations which require that retention structures be designed to withstand conservative earthquake magnitudes associated with the earthquake faults within the project vicinity. Design efforts would include site-specific geotechnical investigations for liquefaction or other ground failures and a licensed geotechnical engineer should prepare recommendations applicable to foundation design, earthwork, and site preparation prior to or during the project design phase. Construction shall be in accordance with applicable City and County ordinances and policies regarding mitigation of seismic and geologic hazards.

Installation of proposed reclamation facilities would have the potential to alter drainage patterns, runoff rates, and flow volumes. Project design of individual facilities would include appropriate drainage infrastructure to control runoff from facility locations. For storage ponds, this would include installation of drains around the storage pond perimeter to intercept and re-route drainage to downstream drainage areas. Construction of storage ponds could result in flooding to downstream areas in the event of a catastrophic failure. All proposed storage facilities will be required to comply with applicable DSOD regulations regarding dam siting, design and construction. Compliance with these requirements would reduce potential flooding impacts to a less than significant level. Mitigation measures have been required by the Regional Water Board to substantially lessen or avoid the potentially significant flooding impacts: Water Recycling Requirement B.14 in Attachment G to this Order requires that all reservoirs and ponds be protected from erosion, washout and flooding from a rainfall event having a predicted frequency of once in 100 years.

Reclaimed water retained within proposed storage ponds could have the potential to infiltrate into the groundwater. This impact would be mitigated as follows. All proposed ponds shall be designed with a native soil layer compacted to a maximum permeability of 1×10^{-6} centimeters/second to avoid infiltration and shall include percolation tests to demonstrate compliance. In the event that this criterion cannot be met due to site conditions, site-specific percolation tests and groundwater modeling shall be conducted to demonstrate that groundwater degradation would not occur. The following mitigation measures have been added by the Regional Water Board to substantially lessen or avoid the potential significant groundwater impacts: Discharge Prohibition III.A.2 prohibits the creation of a pollution, contamination, or nuisance. Reclamation Specification IV.C.6 requires the Discharger to submit design proposals for new storage ponds to the Regional Water Board for review in order to demonstrate that pond design incorporates features to protect groundwater from exceeding groundwater quality objectives. Groundwater Limitations V.B.1 and V.B.2 prohibit the treatment or disposal

of wastewater from statistically degrading or altering the groundwater quality. Special Provision VI.C.2.e requires a storage pond leak monitoring program to demonstrate that storage of treated wastewater is not impacting groundwater.

Construction of proposed facilities (ponds and distribution pipelines) could result in increased erosion and siltation, with subsequent impacts to water quality and/or storm drain capacity. In addition, release of fuels or other hazardous materials associated with construction equipment could reduce water quality. These impacts would be mitigated through development and implementation of a SWPP Plan identifying Best Management Practices (BMPs) for erosion control and reduction of water quality impacts. Pipeline crossings of creeks would be avoided through use of bridge structures, or construction would be limited to the dry season.

Expansion of acreage to be irrigated with recycled water could contribute to loading of specific constituents to groundwater supplies in the vicinity of irrigation sites, and over-application of recycled water could result in impacts to surface waters through ponding or direct runoff to local creeks. The Discharger's existing *Reclaimed Water User Agreement* and ongoing field monitoring includes provisions that require recycled water to be applied according to the evapotranspiration requirements of the crop being irrigated, and prohibit runoff to adjacent creeks. Continued implementation of these measures would ensure compliance with requirements and provisions of this Order. The following mitigation measures have been added by the Regional Water Board to substantially lessen or avoid the potentially significant recycled water impacts related to irrigation: Discharge Prohibition III.A.2 prohibits the creation of a pollution, contamination, or nuisance. Groundwater Limitations V.B.1 and V.B.2 prohibit the treatment or disposal of wastewater from statistically degrading or altering the groundwater quality. Special Provision VI.C.2.d requires a groundwater monitoring program to demonstrate that the discharge of treated wastewater to the Discharger's land irrigation system is not impacting groundwater. Compliance with Water Recycling Requirements and Provisions in Attachment G of the Order is also required.

Construction of proposed storage ponds and expansion of the Discharger's recycled water irrigation system could result in permanent or temporary impacts to jurisdictional waters of the U.S. and the State, such as creeks or vernal pools, and associated special status plant and animal species. The Discharger's Reclamation Master Plan EIR did not analyze proposed storage ponds on a project-specific level. Additional project-specific environmental review, with circulation to the Regional Water Board, will be required to fully evaluate the potential environmental impacts of proposed storage pond construction, including, but not limited to the potential loss of wetlands and impacts on groundwater and surface waters. The beneficial uses of these waters, as identified in Table 5 of the Order and Table F-5, below, must be protected. Potential impacts on wetlands shall be mitigated through avoidance of jurisdictional features, to the extent feasible. Where avoidance is infeasible, the Discharger shall perform a jurisdictional wetland delineation to determine the exact boundary of wetlands. Necessary permits would be obtained, including a CWA Section 404 Dredge and Fill permit from the Army

Corps of Engineers, water quality certification by the Regional Water Board pursuant to CWA section 401, and California Department of Fish and Game 1601/03 stream alteration agreements, and proposed facilities would be designed to minimize impacts. Site-specific botanical surveys of proposed irrigation parcels would be conducted by a qualified biologist to identify sensitive resources and appropriate setbacks would be identified in the *Reclaimed User Agreement* for those parcels.

Operation of the WWTF facilities and pump stations at proposed storage pond sites could result in noise increases in the vicinity of project facilities. Noise can constitute a nuisance under CWC Section 13050. These impacts would be mitigated as follows. All proposed pumping facilities would be either fully enclosed or located below grade such that a noise level of 60 dBA is maintained at the property line, in compliance with the Town of Windsor's *General Plan* noise requirements. In addition to the project design features that have been incorporated to reduce potential noise impacts, the following permit requirement has been added by the Regional Water Board to substantially lessen or avoid any potentially significant noise impacts: Discharge Prohibition III.A.2 prohibits the Discharger from creating a nuisance.

Operation of treatment and storage facilities could generate odors. Odors can constitute a nuisance under CWC Section 13050. This impact would be mitigated by operating treatment and storage facilities to minimize the need for drawdown which would result in exposing bottom sediments to the atmosphere. The following mitigation measures have been added by the Regional Water Board to substantially lessen or avoid the odor impacts: Discharge Prohibition III.A.2 prohibits the Discharger from creating a nuisance. Adherence to Operation and Maintenance requirements contained in section VI.C.4 and Sludge Disposal and Handling requirements contained in section VI.C.5.c Solids Disposal of this Order would also mitigate for odors.

Based on the foregoing, the Regional Water Board finds that the significant environmental effects of the proposed activities related to the Discharger's Reclamation Master Plan, as approved by this Order, are reduced to less-than-significant levels.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (Regional Water Board) adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to the Mark West Hydrologic Subarea of the Middle Russian River Hydrologic Area are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	Mark West Creek	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Groundwater recharge (GWR) Freshwater replenishment (FRESH) Navigation (NAV) Contact water recreation (REC-1) Non-contact water recreation (REC-2) Commercial and sportfishing (COMM) Warm freshwater habitat (WARM) Cold freshwater habitat (COLD) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Migration of aquatic organisms (MIGR) Spawning, reproduction and or early development (SPWN) Potential: Industrial process supply (PRO) Hydropower generation (POW) Shellfish harvesting (SHELL) Aquaculture (AQUA) Native American Culture (CUL) Subsistence Fishing (FISH)
001, 003A, 003B	Groundwater	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Native American Culture (CUL) Potential: Industrial process supply (PRO)

Discharge Point	Receiving Water Name	Beneficial Use(s)
002, 003A, 003B	Freshwater Wetlands	Existing: Wetland Habitat (WET) Potential: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Groundwater recharge (GWR) Freshwater replenishment (FRESH) Navigation (NAV) Contact water recreation (REC-1) Non-contact water recreation (REC-2) Commercial and sportfishing (COMM) Warm freshwater habitat (WARM) Cold freshwater habitat (COLD) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Migration of aquatic organisms (MIGR) Spawning, reproduction and or early development (SPWN) Shellfish Harvesting (SHELL) Aquaculture (AQUA) Native American Culture (CUL) Flood Peak Attenuation/Flood Water Storage (FLD) Water Quality Enhancement (WQE)

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The Basin Plan also includes water quality objectives, implementation plans for point source and nonpoint source discharges, prohibitions, and statewide plans and policies. For example, there are waste discharge prohibitions for the North Coastal Basin, which includes the Russian River. Those prohibitions specific to the Russian River and its tributaries, include prohibitions on point source waste discharges from May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. In addition, for municipal waste discharged from October 1 through May 14, the discharge must be of advanced treated wastewater, and must meet a median coliform level of 2.2 mpn/1000 ml.

The Basin Plan also contains a narrative objective (standard) for toxicity that requires:

"All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator

organisms, analyses of species diversity, population density, growth anomalies, bioassay of appropriate duration or other appropriate methods as specified by the Regional Water Board.

"The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater 18th Edition (1992). At a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

"In addition, effluent limits based upon acute bioassays of effluent will be prescribed. Where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data becomes available, and source control of toxic substances will be required."

Requirements of this Order implement the Basin Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR are applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants and are applicable to the discharge.

3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

   Section 1.2 of the SIP allows the Regional Water Board to adjust the criteria/objective for metals with discharger-specific Water Effect Ratios (WER) established in accordance with U.S. EPA guidance – Interim Guidance on Determination and Use of Water Effect Ratios for Metals (EPA-823-B-94-001) or Streamlined Water-Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005) (Streamlined

Procedure). The Streamlined Procedure determines site-specific values for a WER, a criteria adjustment factor accounting for the effect of site-specific water characteristics on pollutant bioavailability and toxicity to aquatic life.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 C.F.R. § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

5. **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. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16. Section IV.D.2 of the Fact Sheet discusses how the requirements of this Order satisfy the Antidegradation Policy.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[1] 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. Section IV.D.1 of the Fact Sheet provides a detailed discussion of how the requirements of this Order satisfy anti-backsliding requirements.

   The protection afforded under the modified permit results in a level of protection for beneficial uses equal to the previous conditions of Order No. R1-2007-0013. Additionally, this Order is consistent with section 303 (d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the anti-degradation policy is addressed below.

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[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

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

1. Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) List of Impaired Waterbodies, to USEPA by April of each even numbered year. In addition to identifying the waterbodies that are not supporting beneficial uses, the List also identifies the pollutant or stressor causing impairment, and establishes a schedule for developing a control plan to address the impairment. The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination.

2. The Russian River is listed as an impaired water body for sediment and temperature pursuant to section 303(d) of the CWA. A Total Maximum Daily Load has not been established to address sediment and temperature loadings in the Russian River and its tributaries. Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column. An analysis of the Discharger's monitoring data determined that the discharge does not contain sediment (e.g., settleable solids, suspended solids, and turbidity) at levels which will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River. This finding is based in part on the summer discharge prohibition, the one-percent flow limitation for winter discharge, and the results of previous solids and turbidity monitoring that has demonstrated that the Discharger's facility removes all settleable solids and reduces total suspended solids and turbidity to negligible levels.

3. Two designated reaches, one in the mainstem of the Middle Russian River (Geyserville HAS) and one in the mainstem of the Lower Russian River (Guerneville HSA) are listed for pathogens. A Total Maximum Daily Load has not yet been established to address pathogens in the Russian River.

4. On October 25, 2006, the State Water Board adopted California's 2006 Section 303(d) List of Water Quality Limited Segments. On November 30, 2006, USEPA gave final (but partial) approval to California's 2006 303(d) List. USEPA's action included approval of all listings in the Russian River watershed.

E. Other Plans, Polices and Regulations

1. On April 17, 1997, the State Water Board adopted State Water Board Water Quality Order 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. The Discharger has storm water discharges

associated with industrial activities, category "ix" as defined in 40 CFR Section 122.26(b)(14). The Discharger has applied for coverage under Order No. 97-03-DWQ and has prepared a Storm Water Pollution Prevention Plan (SWPP Plan) and has implemented the provisions of the SWPP Plan. The Discharger's SWPP Plan describes storm water discharges, appropriate pollution prevention practices and best management practices as required by the Statewide General Order Program.

2. On May 2, 2006, the State Water Board adopted State Water Board Order 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage under State Water Boards Order 2006-0003-DWQ was November 2, 2006. The Discharger has applied for coverage under, and shall be subject to the requirements of Order 2006-0003-DWQ and any future revisions thereto for operation of its wastewater collection system.

3. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. The Order requires the Discharger to obtain coverage under Order No. 2004-0012-DWQ, by December 30, 2007, for the discharge of biosolids from the wastewater treatment plant.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, but numeric water quality objectives have not been established, WQBELs may be established using one or more of three methods described at 40 CFR 122.44 (d) (vi). First, WQBELs may be established using a calculated water quality criterion, such as a proposed State criterion or an explicit State policy or regulation interpreting its narrative criterion. Second, WQBELs may be established on a case-by-case basis using USEPA criteria guidance published under CWA Section 304 (a). Third, WQBELs may be established using an indicator parameter for the pollutant of concern.

A. Discharge Prohibitions

1. **Prohibition III A.** The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

   This prohibition is based on the Basin Plan, the previous Order (Order No. R1-2002-0013), and State Water Board Order WQO 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order WQO 2002-0012, the State Water Board found that this prohibition is acceptable in Orders, but should be interpreted to apply only to constituents that are either not disclosed by the Discharger or are not reasonably anticipated to be present in the discharge, but have not been disclosed by the Discharger. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

   The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "disclosed to the Ordering and . . . can be reasonably contemplated." (In re the Petition of East Bay Municipal Utilities District et al., (State Water Board 2002) Order No. WQ 2002-0012, p. 24.) In that order the State Water Board cited a case which held the Discharger is liable for discharge of pollutants not "within the reasonable contemplation of the permitting authority" . . . , (Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland (4th Cir. 2001) 268 F.3d 255, 268.) Thus, State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the Discharger and (2) can be reasonably contemplated by the Regional Water Board.

   Whether or not the Discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the Discharger disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of Order adoption.

2. **Prohibition III. B.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the CWC, is prohibited.

   This prohibition is based on section 13050 of the CWC. It has been retained from Order No. R1-2002-0013.

3. **Prohibition III. C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c. (Solids Disposal and Handling Requirements).

This prohibition is based on restrictions on the disposal of sewage sludge found in federal regulations (40 CFR Part 503 (Biosolids) Part 527 and Part 258) and Title 27 of the California Code of Regulations (CCR). It has been retained from Order No. R1-2002-0013.

4. **Prohibition III. D**. The discharge of untreated or partially treated waste from anywhere within the collection, treatment, or disposal facility is prohibited, except as provided for in Prohibition III.E. and Attachment D, Standard Provision I. G (Bypass).

   This prohibition has been retained from Order No. R1-2002-0013 and is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of CWC sections 13260 through 13264 relating to the discharge of waste to waters of the State without filing for and being issued an Order. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 CFR 122.41(m) or an unauthorized discharge which poses a threat to human health and/or aquatic life, and therefore, is explicitly prohibited by this Order.

5. **Prohibition III.E**. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the United States, (b) groundwater, or (c) land that creates a pollution, contamination, or nuisance as defined in CWC section 13050(m) is prohibited.

   This prohibition applies to spills related to SSOs and is based on State standards, including section 13050 of the CWC and the Basin Plan. This prohibition is consistent with the States' antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining high Quality of Waters in California) in that the prohibition imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than that prescribed in State Water Board or Regional Water Board plans and policies.

   This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that create a nuisance. Prohibition III.E. of this Order further prohibits any SSO that results in the discharge of untreated or partially treated wastewater to groundwater due to the prevalence of high groundwater in this Region and this Region's reliance on groundwater as a drinking water source.

6. **Prohibition III.F.** The discharge of waste to land that is not owned by or subject to an agreement for use by the Discharger is prohibited.

   This prohibition is retained from Order No. R1-2002-0013. Land used for the application of wastewater must be owned by the Discharger or be under the control of the Discharger by contract so that the Discharger maintains a means for ultimate disposal of treated wastewater.

7. **Prohibition III.G.** The discharge of waste at any point except Discharge Point 002 (the constructed outfall to the Russian River) or 003 (the Facility's reclamation system), or as authorized by another State Water Board or Regional Water Board Order, is prohibited.

   This prohibition is a general prohibition that allows the Discharger to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the CWC.

8. **Prohibition III.H.** Prior to completion of the connection and initiation of use of the Geysers Project, the average daily dry weather flow (ADWF) of waste into the Discharger's Facility in excess of 1.6 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited, and after completion of the connection and initiation of use of the Geysers Project, the ADWF of waste into the discharger's Facility in excess of 1.9 mgd is prohibited, unless the Discharger demonstrates that it has storage and reclamation capacity to handle a higher ADWF up to 2.25 mgd.

   The design capacity of the WWTF is 2.25 mgd. Currently, the Discharger's reclamation capacity is 1.6 mgd, based on the capacity of the existing storage ponds and irrigation system. Discharge Prohibition III.H allows an increase in the Discharger's treatment and reclamation capacity upon completion and use of the Geysers Project. The Discharger is actively pursuing alternatives to increase reclamation capacity. The Discharger must demonstrate to the Executive Officer that it has increased its storage and irrigation capacity, in order to receive approval for increased flows into the WWTF.

9. **Prohibition III.I.** The discharge of treated wastewater from the wastewater treatment facility to the Russian River or its tributaries is prohibited during the period May 15 through September 30 of each year.

   This prohibition is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

10. **Prohibition III.J.** During the period of October 1 through May 14 of each year, discharges of wastewater shall not exceed one percent of the natural flow of Mark West Creek. For purposes of this Order, the natural flow in Mark West Creek shall be that flow measured at Trenton-Healdsburg Bridge minus the discharge flow of wastewater from the City of Santa Rosa Laguna Subregional Wastewater Treatment, Conveyance, Reuse, and Disposal Facility (Santa Rosa Facility) as reported daily to the Discharger's operation staff by the Santa Rosa Facility operations staff. Daily flow comparisons shall be based on the 24-hour period from 12:01 a.m. to 12:00 midnight. For purposes of this Order, compliance with this discharge rate limitation is determined as follows: 1) the discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one percent of the most recent daily flow measurement of Mark West Creek as measured at the Trenton-Healdsburg Bridge, and 2) in no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed one percent of the total volume of Mark West Creek at Trenton-Healdsburg Bridge in the same calendar month.

    During periods of discharge, the flow gage shall be read at least once daily, and the discharge flow rate shall be set for no greater than one percent of the flow of Mark West Creek at the time of the daily reading. At the beginning of the discharge season, the first monthly flow comparisons shall be determined from the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the final monthly flow volume shall be determined from the first day of the calendar month to the date when the discharge ended for the season.

    This prohibition is required by the Basin Plan (Chapter 4 Implementation Plans, North Coastal Basin Discharge Prohibition No. 3). The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow. Basin Plan Prohibition No. 4 does not specify how compliance to the one-percent flow requirement will be determined. The previous permit, Order No. R1-2002-0013, does not specify how compliance to the one-percent flow requirement will be determined. This Order corrects this oversight and specifies that the discharge may comply with the one percent requirement as a monthly average for the surface water discharge season, provided the Discharger makes a reasonable effort to adjust the discharge of treated wastewater to one percent of the most recent daily flow measurement of Mark West Creek at the Trenton-Healdsburg Bridge. This modification provides day-to-day operational flexibility for the Discharger while retaining the intent of the prohibition.

B. Technology-Based Effluent Limitations

a. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133.

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

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

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH, as follows:

a. BOD and Suspended Solids

   i. The 30-day average shall not exceed 30 mg/l.
   ii. The 7-day average shall not exceed 45 mg/l.
   iii. The 30-day average percent removal shall not be less than 85 percent.

b. pH

   i. The pH shall be maintained within the limits of 6.0 to 9.0.

      The effluent limitation for pH required to meet the water quality objective for hydrogen ion concentration (pH) is contained in the Basin Plan Table 3-1.

In addition, 40 CFR 122.45 (f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except, 1) for pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass, and (2) when

applicable standards and limitations are expressed in terms of other units of measure.

b. Applicable Technology-Based Effluent Limitations.

In addition to the minimum, federal technology-based requirements, the Basin Plan requires that discharges of municipal waste "shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 ml." This requirement leaves discretion to the Regional Water Board to define AWT via effluent limitations in individual permits.

a. **Biochemical Oxygen Demand and Suspended Solids.** Thus, for the purpose of regulating municipal waste discharges from the WWTF to the effluent storage ponds, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l, and a weekly average concentration of 15 mg/l, which are technically achievable based on the capability of a tertiary system. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent.

b. **Total Coliform Organisms.** The disinfected effluent discharged from the WWTF to the effluent storage ponds shall not contain concentrations of total coliform bacteria exceeding the following limitations:

   i. The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using the bacteriological results of the last seven days for which analyses have been completed.

   ii. The number of coliform bacterial does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

   iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

c. **Summary of Technology-based Effluent Limitations for Discharge Point 001 (Discharge to Storage Pond)**

Table F-6. Summary of Technology-based Effluent Limitations for Treatment Plant Effluent at Discharge Point 001 (Discharge to Storage Pond)

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD (20°C, 5-day)	mg/L	10	15	20
Dry Weather	lbs/day	188	281	375
Wet Weather[2]	lbs/day	---	913	---
Total Suspended Solids	mg/L	10	15	20
Dry Weather	lbs/day	188	281	375
Wet Weather	lbs/day	---	913	---
Total Coliform Organisms	MPN/ 100 mL	---	2.2[3]	23
Hydrogen Ion	pH units	Not less than 6 nor greater than 9		

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains water quality-based effluent limitations for pH that are more stringent than secondary treatment requirements to meet applicable water quality standards. The rationale for these requirements is discussed in section IV.C.3 of the Fact Sheet.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. A reasonable potential analysis (RPA) demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for copper.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

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[2] Wet weather conditions are when the average weekly or average monthly influent flow exceeds 2.25 mgd.
[3] Weekly median

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. Beneficial Uses. Applicable beneficial uses are discussed in Finding II.H. of the Order and section III.C.1 of this Fact Sheet.

b. Basin Plan Water Quality Objectives. In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, including Mark West Creek and the Russian River.

c. State Implementation Policy (SIP), CTR and NTR.

Water quality criteria applicable to discharges to Mark West Creek are included in the NTR and the CTR, which contain numeric criteria for the protection of aquatic life and human health for most of the 126 priority, toxic pollutants. The CTR further indicates that such criteria will be developed for the remaining priority pollutants at a future date.

Aquatic life freshwater and saltwater criteria are further identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or one-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. Aquatic life freshwater criteria were used for the reasonable potential analysis (RPA), and for the calculation of effluent limitations for pollutants that showed reasonable potential.

Human health criteria are further identified as "water and organisms" and "organisms only." The criteria from the "water and organisms" column of CTR were used for the RPA because the Basin Plan identifies that the receiving water, Mark West Creek, is a source of municipal and domestic drinking water supply. The human health criteria are used to calculate human health effluent limitations.

The SIP, which is described in Finding II.J. of the Order and section III.C.3 of the Fact Sheet, includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

Table F-7 summarizes the applicable water quality criteria/objective for each priority pollutant reported in detectable concentrations in Windsor's effluent or receiving water. These criteria were used in conducting the Reasonable Potential Analysis (RPA) for this Order. Attachment F-1 to this Order summarizes the RPA for all 126 priority pollutants.

Table F-7. Applicable Water Quality Criteria and Objectives for Priority Pollutants Reported in Detectable Concentrations in Windsor's Effluent

CTR No.	Constituent	Lowest Applicable Criteria	Basin Plan Water Quality Objectives (from CCR Title 22, Division 4)	CTR/NTR Water Quality Criteria		
				Freshwater		Human Health for Consumption of
				Acute	Chronic	Water and Organisms
		µg/L	ug/L	µg/L	µg/L	µg/L
1	Antimony	6	6	---	---	14
2	Arsenic	50	50	340	150	--
4	Cadmium	2.7	5	5	2.7	---
5a	Chromium	50	50	1877	224	---
6	Copper [b]	39.92	---	61.30	39.92	1300
7	Lead [a]	3.6	---	92	3.6	---
8	Mercury	0.05	2	---	---	0.05
9	Nickel [a]	57	100	509	57	610
10	Selenium	50	50	---	---	---
11	Silver	4.8	---	4.8	---	---
12	Thallium	1.7	2	---	---	1.7
13	Zinc [a]	130	---	130	130	--
14	Cyanide	5.2	150	22	--	700
20	Bromoform	4.3	---	---	---	4.3
23	Chorodibromomethane	0.401	---	---	---	0.401
26	Chloroform	No Criteria	---	---	---	---
27	Dichlorobromomethane	0.56	---	---	---	0.56
35	Methyl Chloride	No criteria	---	---	---	--
39	Toluene	150	150	---	---	6800
68	Bis(2-Ethylhexyl) Pthalate	1.8	---	---	---	1.8

Note:

a Water Quality Criteria for hardness-based metals (except copper) are based on the lowest detected hardness concentration of 110 mg/l and have been converted to total recoverable metal fraction using the conversion factors in the CTR.

b Water Quality Criteria for copper is based on the lowest detected effluent hardness concentration of 130 mg/L and has been converted to total recoverable copper fraction using conversion factors in the CTR and a discharger-specific Water Effect Ratio (WER) of 3.42. See discussion in Fact Sheet Section IV.C.3.b regarding the meaning and development of the WER.

3. Determining the Need for WQBELs

a. Non-Priority Pollutants

i. pH. Water quality-based effluent limitations are more stringent than the technology-based effluent limitations in this Order. Water quality-based effluent limitations reflect the Basin Plan pH requirement of 6.5 to 8.5 for protection of receiving water beneficial uses.

b. Priority Pollutants

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct a RPA. The Discharger has collected effluent data for priority pollutants for the effluent and receiving water. The RPA is based on effluent and ambient background data for all 126 priority pollutants that was submitted by the Discharger in response to an April 27, 2001 technical information request (13267) letter titled "California Water Code Section 13267(b) Order; Requirement for submittal of Technical/Monitoring Report for Monitoring Priority Pollutants Regulated in the California Toxics Rule (CTR)". The Discharger sampled effluent and receiving water on February 25, 2002, October 9, 2002 and November 13, 2003. All samples were analyzed for all 126 priority pollutants. The RPA is also based on additional effluent data for all 126 priority pollutants submitted in the Discharger's annual reports for the years 2003 through 2005, and additional mercury monitoring results submitted by the Discharger with its ROWD on July 24, 2006 and on February 1, 2007. The copper RPA is also based on additional effluent and receiving water data collected by the Discharger between December 2007 and April 2010.

Some freshwater water quality criteria for metals are hardness dependent; i.e., as hardness decreases, the toxicity of certain metals increases, and the applicable water quality criteria become correspondingly more stringent. For this RPA, Regional Water Board staff has used a receiving water hardness concentration of 110 mg/L $CaCO_3$, based on receiving water data submitted by the Discharger for all of the hardness-based metals except copper. This Order was modified on January 27, 2011 to revise the copper effluent limitations based on new information as further described in subsequent paragraphs in this section. For copper, staff used an effluent hardness concentration of 130 mg/L based on additional data submitted by the Discharger during the term of this Order. This additional hardness data was collected in conjunction with effluent monitoring for copper as required under this Order. Three receiving water hardness samples collected in 2002 showed hardness concentrations between 110 and 250 mg/l in Mark West Creek at Trenton-Healdsburg Bridge, approximately 50 feet upstream of the Facility's discharge point. Seventeen

additional receiving water hardness samples, collected upstream and downstream of the Facility's discharge point between December 2007 and April 2010 showed hardness concentrations between 50 and 175 mg/L.

Hardness

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

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. Effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones (See 40 CFR 131.38(c)(4)(i)). The CTR does not define whether the term "ambient", as applied in the regulations, necessarily requires the consideration of the upstream as opposed to downstream hardness conditions.

State Water Board Order No. WQ)-2008-0008 (City of Davis) further interpreted the SIP by stating "*...the regional water boards have considerable discretion in the selection of hardness. Regardless of which method is used for determining hardness, the selection must be protective of water quality criteria, given the flow conditions under which a particular hardness exists....Regardless of the hardness used, the resulting limits must always be protective of water quality under all flow conditions.*"

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria. A 2006 Study (*Emerick, R.W.; Booroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.*) demonstrates that using the lowest recorded receiving water hardness for establishing water quality criteria is not always protective of the receiving water under various mixing conditions (e.g., when the effluent hardness is less than the

receiving water hardness). The 2006 Study demonstrates that for certain hardness-dependent metals, including copper, any mixture of receiving water that is compliant with water quality objectives for that metal and effluent that is compliant with water quality objectives for that metal, will always result in compliance with water quality objectives. The 2006 Study also demonstrates that it is always protective to determine reasonable potential, and calculate effluent limitations, if needed, based on effluent hardness.

The 2006 study evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

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

Where:

WER = the discharger-specific water effect ratio
H = Hardness
b = metal- and criterion-specific constant
m = metal- and criterion-specific constant

The constants "m" and "b" are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The relationship between hardness and the resulting criterion in Equation 1 can exhibit either a downward –facing (i.e., concave downward) or an upward-facing (i.e., concave upward) curve depending on the values of the criterion-specific constants. The curve shapes for acute and chronic criteria for the metals are as follows:

Concave Downward: cadmium (chronic), chromium (III), copper, nickel, zinc. The finding of the 2006 Study with regard to concave downward metals will be discussed further, since copper is being re-evaluated for reasonable potential.

Concave Upward: cadmium (acute), lead, and silver (acute). The findings of the 2006 Study with regard to concave upward metals will not be discussed at this, as no concave upward metals are being evaluated at this time.

For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness, use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. Use of the lowest recorded effluent hardness is also protective under all

possible mixing conditions between the effluent and the receiving water (i.e., from high dilution to no dilution).

Because this Order requires compliance with effluent limitations at the end of the discharge pipe, effluent hardness is an appropriate and protective hardness to use in adjusting the water quality criteria for the concave downward metal, copper, which is the subject of this January 27, 2011 Permit modification. The reasonable worst-case ambient hardness can be estimated by using the lowest effluent hardness. The water quality criteria for copper was calculated for this Order using Equation 1 and a reported minimum effluent hardness of 130 mg/L as $CaCO_3$, based on 13 samples obtained by the Discharger.

Water Effect Ratio (WER) Study
The water quality objective for copper specified in the California Toxics Rule for inland surface waters is in the form of an equation that includes a site-specific WER multiplier factor. The WER reflects any effect that local site water constituents have on increasing or decreasing the bioavailability and toxicity of copper. Application of the WER multiplier, where available, allows for site-specific adjustment of the copper objective. In turn, the copper objective becomes the basis for developing appropriate effluent limitations. In the absence of a site-specific WER multiplier, the CTR uses a default value of one. Order No. R1-2007-0013 established final copper effluent limitations based on the CTR objective assuming a WER multiplier of one, since no site-specific data were available to justify a different multiplier.

The Discharger proposed to conduct a WER study to develop a site-specific copper multiplier for the discharge in accordance with guidance established by USEPA in a document titled Streamlined Water Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005). Order No. R1-2007-0013 required the discharger to submit a WER study workplan by May 1, 2008 and to complete the WER study and submit study results by November 1, 2009 for Executive Officer approval.

The Discharger submitted the WER study workplan on April 30, 2008 and the WER study results on October 28, 2009 (report titled *Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility Copper Water-Effect Ratio Study*). Regional Water Board staff has reviewed the WER study report and has determined that the WER test results were developed in accordance with the methodology in EPA's guidance document.

The WER study resulted in the development of a WER for total recoverable copper in the receiving waters affected by Windsor's discharge of 3.42 and a WER for dissolved copper in the receiving water affected by Windsor's discharge of 3.24. Accordingly, Regional Water Board staff conducted a reasonable potential analysis of Windsor's discharge, utilizing the total-recoverable WER of

3.42 (see Fact Sheet section IV.C.3.b.i, below). The WER study results have been used in the reasonable potential analysis (RPA) for copper in section i. below. Based on the results of the RPA, effluent limitations for copper are not necessary.

To conduct the RPA, Regional Water Board staff identified the maximum observed effluent (MEC) and background (B) concentrations for each priority pollutant from effluent and receiving water data provided by the Discharger and compared this data to the most stringent applicable water quality criterion (C) for each pollutant from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303 (d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

Reasonable Potential Determination

The RPA demonstrated reasonable potential for discharges from the Town of Windsor to cause or contribute to exceedances of applicable water quality criteria for copper. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for the remainder of the other 126 priority pollutants.

Table F-8 summarizes the RPA for each priority pollutant that was reported in detectable concentrations in either the effluent or receiving water between February 25, 2002 and September 19, 2005. Attachment F-2 to this Order summarizes all of the Discharger's effluent and receiving water monitoring data for these same pollutants. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Discharger.

Table F-8. Summary of Reasonable Potential Analysis for Windsor WWTF

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Max Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
1	Antimony	6	0.6	0.4	No	MEC<C and B<C	No EL or monitoring needed.
2	Arsenic	50	2.2	2.8	No	MEC<C and B<C	No EL or monitoring needed.
4	Cadmium	2.7	0.1 DNQ	0.3	No	MEC<C and B<C	No EL or monitoring needed.
5a	Chromium (H= 100 mg/l)	50	<1	3	No	MEC<C and B<C	No EL or monitoring needed.
6	Copper (H= 130 mg/l)	39.92	22	19	No	MEC<C and B<C	Monitoring recommended
7	Lead (H = 110 mg/l)	3.6	0.3	0.86	No	MEC<C and B<C	No EL or monitoring needed.
8	Mercury	0.05	0.15	0.015	Yes	MEC>C	No EL needed. Monitoring needed.
9	Nickel (H = 65 mg/l)	57	5.1	8.8	No	MEC<C and B<C	No EL or monitoring needed.
10	Selenium	50	0.8	0.5	No	MEC<C and B<C	No EL or monitoring needed.
11	Silver (H= 110 mg/l)	4.8	0.02 DNQ	0.02	No	MEC<C and B<C	No EL or monitoring needed.
12	Thallium	1.7	0.1	0.1	No	MEC<C and B<C	No EL or monitoring needed.
13	Zinc (H = 65 mg/l)	130	76	7	No	MEC<C and B<C	No EL or monitoring needed.
14	Cyanide	5.2	2.4	1.8	No	MEC<C and B<C	No EL or monitoring needed.
20	Bromoform	4.3	1.3	<0.5	No	MEC<C and B<C	No EL or monitoring needed.
23	Chlorodibromomethane	0.401	7.8	<0.5	No	Chlorine no longer used	No EL or monitoring needed.
26	Chloroform	No CTR Criteria but MCL of 80 ug/l	18	<0.5	No	No CTR criteria. Chlorine no longer used	No EL or monitoring needed.
27	Dichlorobromomethane	0.56	13	<0.5	No	Chlorine no longer used	No EL or monitoring needed.
35	Methyl Chloride	No criteria	0.4 DNQ	<0.5	No	No CTR criteria	No EL or monitoring needed.
39	Toluene	150	0.3	<0.3	No	MEC<C and B<C	No EL or monitoring needed.
68	Bis(2-Ethylhexyl) Phthalate	1.8	0.7 DNQ	0.4 DNQ	No	MEC<C bt B>C	No EL needed. Monitoring needed.

Notes: EL – Effluent Limitation

Reasonable Potential Analysis: The following section summarizes additional details regarding the data used for the RPA for copper to justify the removal of copper effluent limitations. A discussion of the sampling results for mercury, chlorodibromomethane and dichlorobromomethane are included in this section to justify why effluent limitations and monitoring are not needed for these priority pollutants. A discussion of the sampling results for Bis(2-Ethylhexyl) Pthalate is included to justify the need for additional sampling.

i. Copper

The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to calculate total recoverable criteria. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. As discussed in section IV.C.3.b of this Fact Sheet, the applicable WER value for total recoverable copper is 3.42. Using the worst-case measured hardness in the effluent (130 mg/L) to represent zero-dilution conditions (end of pipe compliance), as discussed in section IV.C.3.b of this Fact Sheet, the default conversion factor (0.96) and the constants m = 0.8545 and b = -1.702 from the CTR, the total recoverable copper WER of 3.42, in Equation 1 above, the applicable chronic criterion (maximum 4-day average concentration) is 39.92 ug/L and the applicable acute criterion (maximum 1-hour average concentration is 61.30 ug/L, as total recoverable concentrations.

Effluent monitoring data submitted by the Discharger showed concentrations of total recoverable copper ranging from <0.7 µg/L to 22 µg/L in nineteen samples. The MEC for total copper was 22 ug/L, based on 19 samples collected between February 2002 and April 2010. Therefore, analysis of site-specific data and information concludes that the discharge does not have reasonable potential to cause or contribute to an excursion above the CTR criteria for copper.

Eleven upstream receiving water samples were analyzed for copper. Copper was detected in eight receiving water samples at concentrations ranging from 0.85 to 19 ug/l. Copper was not detected at a reporting limit of 4.0 ug/l in the three additional samples. A determination of no reasonable potential based on receiving water is made based on the fact that the receiving water complies with applicable water quality objectives for copper. The water quality objectives for copper in the receiving water based on adjustment for lowest downstream receiving water hardness (56 ug/L) and the WER (3.42) is 19.44 ug/L.

ii. Mercury

Effluent monitoring data submitted by the Discharger showed concentrations of mercury ranging from 0.0011 to 0.15 ug/l in six samples collected between February 25, 2002 and December 11, 2006. The effluent sample collected on February 25, 2002 exceeded the lowest CTR criterion of 0.05 ug/l and five samples had detectable concentrations of mercury below the CTR criterion of 0.05 ug/l. Four additional samples were non-detect for mercury, but were analyzed at a detection limit of 1 ug/l, too high to determine reasonable potential.

The Discharger believes that the mercury data point causing the reasonable potential is an outlier, likely resulting from improper sampling and/or analytical techniques. This conclusion is based on both its absolute magnitude and its magnitude with respect to other sampling data where the same analytical technique was used. To support this conclusion, the Discharger initiated additional low detection limit mercury monitoring of the effluent and will continue the additional monitoring through February or March 2007. Based on this information, Regional Water Board staff believe that there is not sufficient data to make a determination that there is reasonable potential for the Discharger to cause or contribute to an exceedance of the mercury criterion in the receiving water. Therefore in accordance with Section 2.2.2.A. of the SIP, no limit for mercury is included in the Order.

Three receiving water samples were collected for mercury between February 25, 2002 and December 12, 2006. Mercury was detected in receiving water at concentrations between 0.0034 ug/l to 0.026 ug/l which are all below the lowest CTR criterion of 0.05 ug/l.

Final effluent limitations are not recommended for mercury at this time. The one concentration that exceeded the CTR criterion is likely an outlier and five out of six mercury samples showed concentrations of mercury that are an order of magnitude lower than the lowest CTR criterion. Monitoring for mercury is recommended to confirm this recommendation. The monitoring and reporting program requires annual monitoring for all priority pollutants, including mercury. If mercury is detected above the lowest CTR criterion for mercury, additional monitoring would be required and the permit would be reopened to establish WQBELs for mercury and a pollution prevention plan to reduce the discharge of mercury to surface waters.

iii. Chlorodibromomethane (CDBM)

CDBM is a component of a group of chemicals, commonly known as trihalomethanes (THMs), which are formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and

organic and inorganic material. Other THMs include chloroform, bromoform, and dichlorobromomethane. THMs are considered human carcinogens. The CTR criterion for DCBM to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.401 µg/l.

Effluent monitoring data submitted by the Discharger showed concentrations of CDBM ranging from <0.5 ug/l to 3.4 ug/l in three samples collected between February 25, 2002 and November 13, 2002. One sample exceeded the lowest CTR criterion of 0.401 ug/l. There were no exceedances of the CDBM CTR criterion in two receiving water samples collected during the same time period.

The Discharger discontinued its use of chlorine for disinfection of treated effluent discharged to its storage ponds for subsequent discharge to Mark West Creek and has not detected CDBM in its effluent since. There is no longer reasonable potential to exceed any CTR criterion.

iv. Dichlorobromomethane (DCBM)

DCBM is a THM formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. The CTR criterion for DCBM to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.56 µg/l

Effluent monitoring data submitted by the Discharger showed concentrations of DCBM ranging from <0.5 ug/l to 13 ug/l in three samples collected between February 25, 2002 and November 13, 2002. Two samples exceeded the lowest CTR criterion of 0.56 ug/l with concentrations of 9.7 ug/l and 13 ug/l. There were no exceedances of DCBM CTR criterion in two receiving water samples collected during the same time period.

The Discharger discontinued its use of chlorine for disinfection of treated effluent discharged to its storage ponds for subsequent discharge to Mark West Creek and has not detected DCBM in its effluent since. There is no longer reasonable potential to exceed any CTR criterion.

v. Chloroform. Chloroform is a THM formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. The federal primary maximum contaminant level (MCL) for total THMs is 80 µg/l.

Effluent monitoring data submitted by the Discharger showed concentrations ranging from <4.1 ug/l to 18 ug/l in three treated effluent samples collected between February 25, 2002 and November 13, 2002. Because the MEC is less than the MCL for chloroform and the Discharger has discontinued its use of chlorine for disinfection of treated effluent discharged to its storage ponds for

subsequent discharge to Mark West Creek, the discharge does not have reasonable potential to exceed the MCL for chloroform.

vi. Bis (2-Ethylhexyl) Phthalate

Bis(2-ethylhexyl) phthalate (DEHP) belongs to a class of pollutants known as ortho-phthalate esters. Phthalate esters are widely used as plasticizers, primarily in the production of polyvinyl chloride (PVC) resins. Plasticizers are added to synthetic plastic resins to impart flexibility to the ordinarily brittle PVC, improve workability during fabrication and extend or modify properties not present in the original resins. PVC resins are used in a wide diversity of products including cable insulation, flooring, furniture upholstery, wall coverings, car upholstery and seat covers, footwear and food and medical packaging material. Phthalates also are used in cosmetics, industrial oils and insect repellants. The most widely used phthalate plasticizer is bis(2-ethylhexyl) phthalate, also known as di (2-etthylhexyl) phthalate or DEHP. DEHP released to water systems will biodegrade fairly rapidly (half-life 2-3 weeks). It will also strongly adsorb to sediments and bioconcentrate in aquatic organisms. The CTR criterion for DEHP to protect human health for drinking water sources (consumption of water and aquatic organisms) is 1.8 µg/l.

Most effluent monitoring data submitted by the Discharger was analyzed with detection limits that are too high to determine whether or not reasonable potential exists for this priority pollutant. The Discharger monitored for DEHP eight times between February 25, 2002 and September 19, 2005 using reporting limits between 1 ug/l and 43 ug/l. All but one sample was analyzed with reporting limits that are too high to determine reasonable potential. The sample collected on February 25, 2002 revealed a concentration of 0.4 ug/l, a concentration that is below the reporting limit. This result was flagged as being detected but not quantifiable. Since this result is well below the lowest CTR criterion of 1.8 ug/l, further monitoring is recommended using a detection limit of 1.0 ug/l.

On February 1, 2007, the Discharger submitted the results of three additional DEHP samples. The Discharger collected the samples in both plastic and glass containers. The samples were analyzed using a reporting limit of 3 ug/l and a method detection limit of 0.6 ug/l. DEHP was not detected in any of the samples.

DEHP was not detected in two receiving water sample results provided by the Discharger.

The MRP directs the Discharger to conduct additional monitoring for DEHP in order to determine whether or not this priority pollutant is present in the effluent at concentrations that have reasonable potential to cause or contribute to an exceedance of the human health criterion for DEHP. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to

an exceedance of the human health criterion for DEHP, the permit will be reopened to establish WQBELs for DEHP and a pollution prevention plan to reduce the mass emission of DEHP to surface waters.

4. WQBEL Calculations

Based on a re-evaluation of reasonable potential for copper, as described in Section IV.C.3.b, above, final WQBELs copper are no longer necessary. The remaining discussion in this section regarding copper is retained for historical purposes only.

Final WQBELs for copper have been determined using the methods described in section 1.4 of the SIP.

Water quality objectives for copper are hardness-dependent. The Discharger collected three hardness samples from Mark West Creek and identified hardness concentrations ranging from 110 to 250 mg/l. Regional Water Board staff used best professional judgment to determine the copper effluent limitations for this Discharger should be determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled. The calculations for copper below use a hardness concentration of 110 mg/l to determine the copper effluent limitation for that single hardness value. Calculations for a range of hardness concentrations, ranging from 5 to >400 mg/l are included in Attachment E-1, titled Hardness-Dependent Effluent Limitations for Copper.

Step 1: For each water quality criterion/objective, an effluent concentration allowance (ECA) is calculated from the following equation to account for dilution and background levels of each pollutant.

ECA = C + D (C - B), where

C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as total recoverable metal, if necessary)
D = the dilution credit
B = the background concentration

Because no credit is being allowed for dilution, D = 0, and therefore, ECA = C.

Step 2: For each ECA based on aquatic life criterion/objective (copper), the long-term average discharge condition (LTA) is determined by multiplying the ECA times a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. When the data set contains less than 10 sample results (which is the case for the Discharger), or 80 percent or more of the data are reported as non-detect (ND), the CV is set equal to 0.6. Derivation of the multipliers is presented in section 1.4 of the SIP.

From Table 1 of the SIP, multipliers for calculating LTAs at the 99th percentile occurrence probability are 0.321 (acute multiplier) and 0.527 (chronic multiplier). LTAs are determined as follows in Table F-9.

Table F-9. Calculation of Long Term Averages for Copper.

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	15.31	10.12	0.321	0.527	4.92	5.33

Step 3: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) are calculated using the most limiting (the lowest) LTA. The LTA is multiplied times a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. Here, the CV is set equal to 0.6, and the sampling frequency is set equal to 4 (n = 4). The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multiplier is 3.11 and the AMEL multiplier is 1.55. Final WQBELs for copper are calculated as follows in Table F-10.

Table F-10. Calculations for Final WQBELs for Copper

Pollutant	LTA	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Copper	4.92	3.11	1.55	15.3	7.6

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective, the AMEL is set equal to the ECA, and the MDEL is calculated by multiplying the ECA times the ratio of the MDEL multiplier to the AMEL multiplier.

The Discharger did not have reasonable potential for any priority pollutant based on a human health criterion/objective, therefore no calculations are shown here.

WQBELs for the Facility are summarized in Table F-11, below.

Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Table F-11. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
pH	pH Units	6.5-8.5	
Copper [a]	µg/L	See Attachment E-1	

Notes: Final effluent limitations for copper are for total recoverable metal fraction and are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled. Attachment E-1 provides calculated final effluent limitations for copper, for a range of hardness values using the formulas noted therein.

5. Whole Effluent Toxicity (WET)

This effluent limitation is derived from the CWA and the Basin Plan. The Basin Plan states that "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." 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 MRP (Attachment E, section V.).

a. **Acute Aquatic Toxicity.** The Order implements Federal guidelines (Regions 9 & 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring dischargers to conduct acute toxicity tests on a fish species and on an invertebrate to determine the most sensitive species. According to the USEPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/027F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss.* The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. The Discharger tested its effluent for acute toxicity on the rainbow trout, *Oncorhynchus mykiss*, 24 times between January 2, 2002 and December 30, 2006. All acute toxicity results showed 100 percent survival.

Because the Basin Plan requires a discharge not cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective, acute toxicity effluent limitations are included in the Order to ensure that the Basin Plan narrative toxicity objective is implemented and complied with.

b. **Chronic Aquatic Toxicity.** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Attachment E of this Order requires annual chronic

WET monitoring for demonstration of compliance with the narrative toxicity objective.

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1.0 chronic toxicity unit (TUc) demonstrates the discharge is in violation of the chronic toxicity effluent limitation. If the discharge demonstrates a pattern of toxicity exceeding the effluent limitation, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan to determine whether the discharge is contributing chronic toxicity to the receiving water. Special Provision VI.C.2.b. requires the Discharger to submit to the Regional Water Board and maintain an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

The Discharger conducted three-species WET tests on *Ceriodaphnia dubia* (water flea), *Pimaphales promelas* (fathead minnow), and *Selanastrum capricornutum* (green alga) between December 16, 2002 and January 4, 2006. Order No. R1-2002-0013 requires the Discharger to conduct accelerated monitoring if a three sample median exceeds 1 TUc or if a single-sample value exceeds 2 TUc. All chronic toxicity tests for *Ceriodaphnia dubia* and *Pimaphales promelas* showed no chronic toxicity. On January 4, 2006, the Discharger exceeded the three-sample median for *Selanastrum capricornutum*. The Discharger conducted accelerated monitoring for the *Selanastrum capricornutum* chronic toxicity test by collecting additional samples on January 23, 2006 and January 30, 2006. The accelerated monitoring continued to reveal apparent chronic toxicity. The Discharger submitted a September 13, 2006 Technical Memorandum titled "Evaluation and Discussion of the Town of Windsor's chronic toxicity test results for *Selanastrum capricornutum*" (Robertson-Bryan, Inc.). In reviewing and comparing the results for the six *Selanastrum capricornutum* chronic toxicity tests, the Discharger's consultant and Regional Water Board staff observed that there may be factors in the test results that make the determination of toxicity uncertain. Regional Water Board staff obtained assistance from USEPA's technical consultant, Tetra Tech. A Tetra Tech toxicologist conducted an independent review of the Discharger's *Selanastrum* capricornutum data and concluded that the observed toxicity was largely due to nutrient enrichment in the receiving water and not related to measurable toxicity in the effluent. Tetra Tech further concluded that a TRE is not needed in response to the January 2006 *Selanastrum* test results and that the permit's chronic toxicity language be modified to require toxicity to be detected relative to the laboratory control water.

The Discharger's chronic toxicity tests in February 2007 revealed chronic toxicity in all three species. A review of the test data revealed that the 2007 results were not affected by factors such as nutrient enrichment in the receiving water. The Discharger collected additional samples to determine if the toxicity is persistent. Staff recommends increasing the Discharger's chronic toxicity monitoring frequency to twice annually, in order to collect additional data to determine whether or not there is reasonable potential for chronic toxicity to exceed applicable water quality criterion. This recommendation is further supported in section VI.C.2.b of this Fact Sheet and reflected in the MRP.

The Discharger also submitted its *Toxicity Reduction Evaluation (TRE) Workplan for the Town of Windsor WWTP* on October 10, 2006 which it will need to maintain as required by section VI.C.2.b. of the Order.

Chronic toxicity testing results submitted by the Discharger are summarized below in Table F-12.

Table F-12. Whole Effluent Chronic Toxicity Monitoring Results

Date	*Selenastrum capricornutum*				*Ceriodaphnia dubia*				*Pimaphales promelas*			
	Growth				Survival		Reproduction		Survival		Growth	
	IC25	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc
12/16/02	>100	<1	100	1	100	<1	100	<1	100	<1	100	<1
1/12/04	>100	1	100	1	100	<1	100	<1	100	<1	100	<1
1/5/05	82	1.2	70	1.4	100	<1	100	<1	100	<1	100	<1
1/4/06	65	1.5	50	2.0	100	<1	100	<1	100	<1	100	<1
1/23/06	78.1	1.3	<25	>4.0	---	---	---	---	---	---	---	---
1/30/06	29.8	3.4	<25	>4.0	---	---	---	---	---	---	---	---
2/26/07*	17.2	5.8	0	>100	100	1.0	70	1.4	85	1.2	85	1.2

* On February 26, 2007, additional chronic toxicity results included:
Ceriodaphnia dubia Survival EC25 >100% effluent (<1.0 TUc)
Ceriodaphnia dubia Reproduction IC25 =84.6% effluent (1.2 TUc)
Pimaphales promelas Survival EC25=86.9% effluent (1.2 TUc)
Pimaphales promelas Growth IC25=92.6% effluent (1.1 TUc)

D. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of daily maximum effluent limitations for BOD and total suspended solids. The daily maximum concentration-based effluent limitations for BOD and suspended solids have been omitted in the renewed Order. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations. This permit change is governed by 40 CFR 122.44(*l*)(1), which provides that relaxations in effluent limitations are permitted where

the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification under 40 CFR 122.62. Among the several enumerated grounds identified in 40 CFR 122.62 under which a permit may be modified is where new information becomes available.

Here, daily maximum limits are not necessary at this facility because the information provided by the 260 BOD and TSS samples collected during the five year term of Order No. R1-2002-0013 demonstrates that the treated effluent consistently exceeded the daily maximum effluent limitation. The permit will retain advanced wastewater treatment requirements that are even more stringent than the average weekly and average monthly effluent limitation requirements from section 133.102 for BOD and TSS. However, daily maximum limits are not specifically required to meet the minimum level of effluent quality that must be attained by the application of secondary treatment.

If future monitoring shows exceedence of the weekly limitation, staff will evaluate the need to reinstate the daily maximum effluent limitation for BOD and TSS.

This Order is consistent with antibacksliding requirements set forth in 40 CFR section 122.44. Effluent limitations for copper have been removed from the permit based upon site-specific conditions at the Discharger's facility. The new information provided by the Discharger indicates that based upon the relative bioavailability of copper to aquatic organisms; there is no reasonable potential for toxicity to those organisms from copper at concentrations detected in the effluent. Therefore, the protection afforded under the modified permit results in a level of protection for beneficial uses equal to the previous conditions of Order No. R1-2007-0013. Additionally, this Order is consistent with section 303 (d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the anti-degradation policy is addressed below and based on the conclusions of the Discharger's WER study, is at least as stringent as the effluent limitations in the Permit adopted by the Regional Water Board on June 14, 2007. Effluent limitations for copper have been modified based on site-specific conditions at the Discharger's facility. The new information provided by the Discharger indicates that based upon the relative bioavailability of copper to aquatic organisms, the higher numeric concentrations established as final effluent limitations in this Order provide an equal level of protection of beneficial uses as the final effluent limitations for copper previously established in this Order. Therefore, this Order is consistent with antibacksliding requirements pursuant to 40 CFR section 122.44. Additionally, this Order is consistent with section 303(d)(4)(B) of the Clean Water Act, which allows for changes to effluent limitations or other permitting standards provided that the quality of receiving waters equals or exceeds levels necessary to protect the beneficial uses for such waters and the change is consistent with the antidegradation policy. Consistency with the antidegradation policy is addressed below.

2. Satisfaction of Antidegradation Policy

This Order is consistent with the Antidegradation Policy. The activities allowed in accordance with these waste discharge requirements apply to an existing facility and will not result in an increased volume or concentration of waste beyond that which was permitted to discharge in accordance with the previous Order. Further, this Order permits only those discharges of waste that have received at least complete secondary treatment. Discharges from the WWTF will be required to maintain protection of the beneficial uses of the receiving water and comply with applicable provisions of the Basin Plan.

Pursuant to the antidegradation policy, the lowering of water quality can be allowed only if beneficial uses are protected, and if there is a maximum benefit to the people of the state. While the removal of the effluent limits may result in a slight increase in the amount of copper discharged to the water body when compared with the amount that would be discharged in compliance with the existing effluent limitations, the removal of effluent limitations is predicated on a finding that there is no reasonable potential for toxicity to organisms from copper in the effluent. Accordingly, this action will result in no less protection of beneficial uses and will maintain water quality. In addition, the Discharger has evaluated potential sources in an effort to further reduce copper concentrations in the effluent.

Furthermore, Discharges regulated in accordance with this Order are for a publicly owned treatment works (POTW). The significant increase in costs for additional treatment that would be required to remove low levels of copper are not in the best interest of the public given that beneficial uses are already shown to be protected and because any resources available for water quality improvements should be used for nonattainment waters or other pressing water quality issues as opposed to treating effluent beyond what is required for protecting beneficial uses.

The activities allowed in accordance with these modifications to the waste discharge requirements apply to existing facilities. Discharges from the WWTF will be required to maintain protection of the beneficial uses of the receiving water and comply with applicable provisions of the Basin Plan.

c. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD, total suspended solids, pH, and total coliform. Restrictions on BOD, total suspended solids, pH, and total coliform are discussed in sections IV.B.2 and and IV.D of the Fact Sheet. This Order's technology-based pollutant restrictions exceed the minimum applicable federal technology-based requirements, mandating effluent limitations that are achievable through tertiary treatment, consistent with the Basin Plan's requirements that discharges of municipal wastewater into the Russian

River and its tributaries be of advanced treated wastewater. In addition, this Order contains water quality-based effluent limitations for pH that are more stringent than the minimum, federal technology-based requirements because the technology-based requirements alone are not sufficient to meet water quality standards. These requirements are discussed in section IV.C.3.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH) and the General Objective regarding antidegradation) were approved by USEPA on, March 4, 2005, and are applicable water quality standards pursuant to section 131.21(c)(2).

In addition, the Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section13241, in establishing these requirements.

4. Summary of Final Effluent Limitations

a. Summary of Final Effluent Limitations for Discharge Point 001 (Discharge to Storage Ponds)

Final effluent limitations for Discharge Point 001 are summarized below in Table 13 and the bulleted text.

Table F-13. Summary of Final Effluent Limitations for Discharge Point 001 (Discharge to Storage Ponds)

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD (20°C, 5-day)	mg/L	10	15	20
Dry Weather	lbs/day	188	281	375
Wet Weather[4]	lbs/day	---	901	---
Total Suspended Solids	mg/L	10	15	20
Dry Weather	lbs/day	188	281	375
Wet Weather	lbs/day	---	901	---
Total Coliform Organisms	MPN/ 100 mL	---	2.2[5]	23
Percent Removal	percent	85	---	---
Hydrogen Ion	pH units	Not less than 6 nor greater than 9		

i. **Advanced Wastewater Treatment.** From the record associated with the adoption of the Basin Plan AWT requirement, it is clear that treatment to a "pathogen-free" level was intended. The Resolution (No. 86-148) adopting the AWT requirement and the Basin Plan explain that zero discharge of municipal wastewater is preferable to ensure protection of beneficial uses (particularly municipal/domestic supply and body contact recreation), but that advanced treatment of wastewater is the "minimum acceptable." The Resolution incorporates the recommendation of the Department of Health Services (DHS) that "all municipal wastewater discharged to streams used for domestic water supply be treated to a 'pathogen free' level. 'Pathogen free' effluent is that which has been treated to advanced levels including chemical flocculation, coagulation, sedimentation, filtration, and disinfection."

The DHS recommendation referred to in the Resolution explained that "the discharge [of wastewater] should be strengthened to require a pathogen free effluent as defined in Section 60315, Title 22 Wastewater Reclamation regulations." The Wastewater Reclamation Criteria in effect at the time stated:

"Section 60315. Nonrestricted Recreational Impoundment.

Reclaimed water used as a source of supply in a nonrestricted recreational impoundment shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 mL and the number of coliform organisms does not exceed 23 per 100 mL in more than

[4] Wet weather conditions are when the average weekly or average monthly influent flow exceeds 1.6 mgd.
[5] Weekly median

one sample within any 30-day period. The median value shall be determined from the bacteriological results of the last 7 days for which analyses have been completed."

In sum, the Basin Plan amendment was intended to protect beneficial uses of the Russian River and tributaries, primarily domestic water supply and contact recreation. The Resolution makes it clear that the amendment was aimed to eliminate pathogens (which pose a significant threat to domestic and recreational uses) from wastewater discharges. Even at that time, Title 22 of the CCR contained the definition of pathogen-free treatment relied on by the resolution. By requiring that the standards be defined in individual permits, the Basin Plan contemplated they would be periodically refined during permit renewals. Accordingly, the use of Title 22 as it exists today is an appropriate means to define AWT wastewater quality for the protection of beneficial uses in the Russian River and tributaries.

ii. **Biochemical Oxygen Demand and Suspended Solids.**

- **Concentration-based Limitations.** For the purpose of regulating municipal waste discharges from the Town of Windsor Wastewater Treatment Facility to its effluent storage ponds, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l and a weekly average concentration of 15 mg/l. Monthly average and weekly average concentration-based limitations are retained from the previous Order. These effluent limitations are consistent with a "pathogen free" discharge, as explained in section IV.D.4.a.i. of the Fact Sheet and are technically achievable based on the capability of a tertiary system. The daily maximum concentration-based effluent limitations for BOD and suspended solids have been omitted in the renewed Order, as explained in section IV.D.1 of the Fact Sheet.

- **Mass-based Limitations.** Mass effluent limitations for BOD and suspended solids are retained from the previous Order and are required under 40 CFR 122.45(f).

iii. **Percent Removal.** In describing the minimum level of effluent quality attainable by secondary treatment, federal regulations (40 CFR 133.102) state that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD and suspended solids must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD and suspended solids over each calendar month. This limit was retained from Order No. R1-2002-0013.

iv. **Total Coliform Organisms.** Consistent with section IV.D. 4.a.(i.) above, advanced treated wastewater shall be considered adequately disinfected if it is "pathogen free." To demonstrate that the discharge is "pathogen free," the discharge must be of a quality that meets the definition of disinfected tertiary recycled water in Section 60301.230 Title 22 CCR.

v. **Hydrogen Ion (pH).** Effluent limitations for hydrogen ion (pH) are retained from the previous Order and are minimum treatment standards for municipal

b. **Summary of Final Effluent Limitations for Discharge Point 002 (Direct Discharge to Mark West Creek)**

Table F-14. Summary of Final Effluent Limitations for Discharge Point 002 (Direct Discharge to Mark West Creek)

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Copper	ug/L	See Attachment E-1	See Attachment E-1
Hydrogen Ion	pH units	Not less than 6.5 nor greater than 8.5	
Chlorine Residual	mg/L	No detectable levels of chlorine at a detection limit of 0.1 mg/l	
Acute Toxicity	Percent survival	70 percent survival or greater in one bioassay and median of at least 90 percent survival for any three consecutive bioassays	

i. Copper. See discussion in Fact Sheet section IV.C.3.b.1.

ii. Hydrogen Ion. The hydrogen ion effluent limitations have been retained from Order No. R1-2002-0013 and reflect the Basin Plan water quality objective for pH for protection of receiving waters beneficial uses

iii. Chlorine Residual. The requirement for no detectable levels of chlorine in effluent discharged to Mark West Creek has been retained from Order No. R1-2002-0013. Although the Discharger no longer uses chlorine for final disinfection of effluent discharged to its storage ponds, the Discharger has identified the use of chlorine in the treatment plant as a means for controlling algal growth on weirs. The chlorine residual effluent limitation is necessary to ensure that the discharge to Mark West Creek does not contain chlorine.

iv. Acute Toxicity. The acute toxicity effluent limitation has been retained from Order No. R1-2002-0013 and reflects the Basin Plan narrative water quality objective for toxicity.

E. Interim Effluent Limitations

The USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge. The SIP contains guidance on implementation of the NTR and CTR. The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements

and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions.

1. **Infeasibility Studies.** The Discharger submitted an Infeasibility Study on July 24, 2006 in response to a letter of intent from the Regional Water Board dated May 11, 2006, in which WQBELs were proposed for the priority pollutants copper and mercury. The Infeasibility Study concluded that it is infeasible for the City to meet the proposed final effluent limitations and requested that the Regional Water Board establish interim effluent limitations for these pollutants in the Discharger's renewed NPDES permit. The Discharger's conclusions are based on a comparison of effluent monitoring data from the Windsor Wastewater Treatment Facility to the proposed final effluent limitations for mercury indicated in the letter of intent and final effluent limitations for copper based on a receiving water hardness of 110 mg/l as $CaCO_3$. The establishment of a compliance schedule and interim limitations is authorized under Sections 2.1 and 2.2 of the SIP upon receipt of additional information documenting possible source control efforts, pollutant minimization actions, and facility improvements.

   Regional Water Board staff reviewed the Infeasibility Study; found that it set out the justification required by section 2.1 of the SIP, and recommend approval of the Discharger's request for interim effluent limitations for copper. The SIP requires the numeric interim effluent limitation to be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. For this Order, interim limitations were derived for copper based on treatment facility performance using the monitoring results of effluent samples from February 25, 2002 through September 19, 2005.

   Based on information provided in the infeasibility report and best professional judgment, the determination of reasonable potential and the proposed WQBELs for mercury were withdrawn, as explained in Fact Sheet section IV.C.3.b.ii.

2. **Copper.** The Discharger is unable to immediately comply with the final limitations for copper. Based on a review of copper results from effluent samples collected from February 25, 2002 through September 19, 2005, the discharge would have exceeded the final AMEL (based on hardness at the time of discharge) one time and the final MDEL zero times. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion.

   Interim performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD. For copper, the upper 99^{th} percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected and assuming weekly monitoring of the

discharge. The upper 99th percentile limit of 17 µg/l was then established as an interim performance-based average monthly limitation. Other interim requirements and the time schedule to achieve final effluent limitations for copper are specified in Section VI.C.7. of the Order.

F. Land Discharge Specifications

This section does not apply to the Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility.

G. Reclamation Specifications

1. **Filtration Rate.** This provision requires that wastewater be filtered at a rate that does not exceed 5 gallons per minute per square foot of filter surface area, and is based on the definition of filtered wastewater found in Title 22 Section 60301.320 of the CCR. The Title 22 definition is used as a reasonable performance standard to demonstrate that recycled water has been coagulated and adequately filtered for removal of wastewater pathogen and for conditioning of water prior to ultraviolet light disinfection processes. Properly designed and operated effluent filters will meet this standard.

2. **Turbidity.** This provision specifies that the turbidity of the filtered wastewater not exceed an average of 2 NTU within a 24-hour period, 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU at any time, and is based on the definition of filtered wastewater found in Title 22 Section 60301.320 of the CCR. The Title 22 definition is used as a reasonable performance standard to ensure adequate removal of turbidity upstream of disinfection facilities. Properly designed and operated effluent filters will meet this standard. The point of compliance for the turbidity requirements is a point following the effluent filters and before discharge to the disinfection system.

3. **Reclamation Capacity.** This Order requires that the Discharger maintain minimum storage and irrigation area capacities that are required to maintain the Discharger's water balance for reclamation and disposal. Table 9 of the Order, Projected Storage and Irrigation Capacities for Reclamation System Capacity Increases, was generated by a model developed by the Discharger's technical consultant and subsequently provided for inclusion in this Order. Discharge Prohibition III.H of the Order limits the Discharger to an ADWF of 1.6 mgd, and allows an increase in ADWF to 1.9 mgd upon completion and use of the Geysers Project at an average annual flow of 0.53 mgd. The Discharger must provide documentation that it has increased its total storage capacity and associated irrigation area capacity in accordance with Tables 9, 9a,or 9b in the Order. This Provision is retained from the Order No. R1-2002-0013.

4. **Reclamation Alternatives.** This Order requires the Discharger to utilize all reasonable alternatives for reclamation in order to have adequate reclamation capacity.

5. **Storage Ponds.** The Order requires the Discharger to submit design proposals for all future storage ponds in order to demonstrate that future storage ponds are constructed in a manner that is protective of groundwater. This requirement ensures implementation of the mitigation measures in the Discharger's EIR and Water Reclamation Master Plan, as described in section III.B of this Fact Sheet.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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 [Water] Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, bacteria, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

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

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, bacteria and radioactivity. The chemical constituent objective states groundwater shall not contain chemical constituents in excess of the limits specified in Code of California Regulations, Title 22, Division 4, Chapter 14, Article 4, Section 64435, Tables 2 and 3, and Section 64444.5 (Table 5) and listed in Table 3-2 of the Basin Plan. Numerical objectives for certain constituents for individual groundwaters are contained in Table 3-1 of the Basin Plan. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The bacteria objective prohibits coliform organisms at or above 1.1 MPN/100 ml.

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 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, is established 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

Influent wastewater monitoring for the WWTF is required in this Order. NPDES regulations at 40 CFR 133 define secondary treatment to include 85 percent removal of BOD_5 and TSS during treatment. Monitoring of influent for these pollutant parameters, in addition to effluent, is required to monitor compliance with this standard of performance. Influent monitoring requirements are contained in Attachment E, Section III.A, of the MRP.

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. In addition, routine monitoring of the effluent and the receiving water for priority pollutants is required to periodically assess the reasonable potential of the discharge to cause or contribute to an exceedance of CTR criteria. The frequency of routine monitoring for priority pollutants is determined using best professional judgment, with consideration given to the nature of the individual pollutant, the past record of detections in the effluent, and likelihood of the presence of the pollutant in the discharge. Effluent monitoring requirements are contained in Attachment E, Section IV of the MRP.

C. Whole Effluent Toxicity Testing Requirements

1. Acute Toxicity

a. **Rationale.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity (Effluent Limitation IV.A.1.e).

b. **Test Frequency** - The USEPA recommends monthly WET testing for facilities listed as "major facilities" and quarterly testing for "minor facilities." (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996) If WET limits are required, federal regulations (40 CFR 122.44(i)(2) require a minimum frequency of annual. For small municipalities, not designated as "major facilities," the USEPA recommends at least one suite of tests to be

conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential.

This Order specifies monthly routine monitoring for acute toxicity in order to ensure compliance with the Basin Plan narrative toxicity objective.

c. **Sample Location** – Representative effluent samples shall be collected at Monitoring Location EFF-002, when discharging to surface water.

d. **Sample Type** – This Order specifies a 96-hour static renewal or static non-renewal test as described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions. Upon request, other methods may be approved by the Regional Water Board Executive Officer.

e. **Test Species** – This Order requires the Discharger to conduct acute toxicity tests with the water flea, *Ceriodaphnia dubia*, and the rainbow trout, *Oncorhychus mykiss*, for at least two suites of tests. For the first two suites of acute toxicity tests, the Discharger will determine the most sensitive aquatic species and continue to monitor with the most sensitive species. At least once every five years, the Discharger will re-screen to re-confirm the most sensitive species for the acute toxicity test.

f. **Test Method** – The presence of acute toxicity shall be estimated as specified in effluent limitation IV.A.3.a and shall be consistent with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.

g. **Dilution Water** – Acute toxicity tests shall be conducted using undiluted effluent.

h. **Accelerated Monitoring** - The provision requires accelerated acute toxicity testing when a regular acute toxicity test result exceeds the single sample effluent limitation. 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. Under this provision, the Discharger is required to conduct at least two additional samples, one within 14 days, and one within 21 days of receiving the initial sample result. If any of the additional samples do not comply with the three sample median minimum limitation (90 percent survival) using that sample result and the two previous sample results, the Discharger shall initiate a TRE. If any test of a sample is ruled invalid, the Discharger will re-sample within 7 days following notification of test invalidation.

2. Chronic Toxicity

a. **Rationale.** Chronic whole effluent toxicity (WET) testing is required two times per year, during the discharge season, in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

b. **Test Frequency** - The USEPA has no fixed guidance on the establishment of monitoring frequency, but recommends monthly WET testing for facilities listed as "major facilities" and quarterly testing for "minor facilities" during the first year of WET testing in order to develop sufficient data to conduct a reasonable potential analysis. USEPA further recommends that a reduction in sampling frequency is appropriate if no individual toxicity test exceeds the WET limit or trigger. If WET limits are required, federal regulations (40 CFR 122.44(i)(2)) requires a minimum frequency of annual. For small municipalities, not designated as "major facilities," the USEPA recommends at least one suite of tests to be conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential. (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996)

This Order specifies routine monitoring for chronic toxicity, two times per year during the discharge season, based on the fact that chronic toxicity was detected in all three species' tests in early 2007.

c. **Sample Location** - Representative effluent samples shall be collected at Monitoring Location EFF-002, when discharging to surface water.

d. **Sample Type** – The Discharger shall collect grab samples of storage pond effluent discharged to Discharge Point 002 at Monitoring Location EFF-002 for critical life stage toxicity testing as indicated in this Order. For toxicity tests requiring renewals, grab samples collected on appropriate days are required as mandated by the methods.

e. **Test Species** – This Order requires the Discharger to conduct short-term tests with the 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). Initially, the Discharger is required to determine the most sensitive test species and monitor the discharge for chronic toxicity using that species for no more than five years, whereupon, the Discharger will repeat the screening procedure to confirm the most sensitive species. If reasonable potential to exceed the narrative water quality objective is found to exist, the Permit may be reopened to include a chronic toxicity limitation, as appropriate. The Basin Plan does not allow a mixing zone for this discharge; therefore, reasonable potential will be based on results of chronic toxicity tests from samples collected at the end of the pipe.

f. **Test Method** – The presence of chronic toxicity shall be estimated as specified in and shall be consistent with *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.

g. **Dilution water** - Control and dilution water should be receiving water at a location immediately upstream and outside the influent of the outfall for all test methods except the short-term chronic *Selenastrum capricornutum* test. For the Selenastrum capricornutum test method, synthetic laboratory water with a hardness similar to the receiving water shall be used as the control and dilution water. Laboratory water may be substituted for receiving water, as described in the manual, upon approval by the Regional Water Board Executive Officer.

h. **Accelerated Monitoring** - The provision requires accelerated WET testing when a regular WET test result exceeds the effluent limitation or 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 Regional Water Board Executive Officer may require that the Discharger initiate a TRE.

i. **Monitoring Trigger.** A numeric toxicity monitoring trigger of 1.0 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. USEPA, Region IX recommends that effluent limitations and triggers be based on the NOEC because the permit language and chronic toxicity testing methods incorporate important safeguards that improve the reliability of the NOEC. The safeguards include the use of a

dilution series to verify and quantify a dose-response relationship, and a quality assurance requirement to evaluate specific performance criteria in order to determine the sensitivity of each chronic toxicity test. Provision VI.C.2.a of the permit has been revised to define the chronic toxicity trigger as 1.0 TUc (where TUc = 100/NOEC).

D. Receiving Water Monitoring

1. **Surface Water.** Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations. Compliance with receiving water limitations will be demonstrated by grab and/or continuous monitoring samples or measurements taken upstream and at the point of discharge in Mark West Creek, when discharging to surface water. For the purpose of determining compliance with receiving water limitations, the point of discharge is defined as the location at which the treated effluent enters the receiving water body. Monitoring samples or measurements shall be obtained at the point of discharge before the monitored flow is diluted by any other waste stream, body of water, or substance and prior to initial or secondary mixing with ambient receiving waters. The upstream monitoring samples or measurements shall be representative of upstream conditions and shall be obtained at a location as close to the point of discharge as practicable.

   The Regional Water Board has provided the Discharger the option to submit an alternative receiving water monitoring program within one year of the permit adoption date that could contain receiving water monitoring locations different than those prescribed above. The program must be acceptable to the Executive Officer and demonstrate compliance with the Order to the satisfaction of the Executive Officer. If an acceptable alternative program proposal is not timely received and approved by the Executive Officer, the downstream receiving water monitoring locations specified in the MRP, and described in the previous paragraph, shall become effective immediately. In the interim, the Discharger shall comply with the interim receiving water monitoring requirements using receiving water monitoring locations specified in Attachment E-2 of the MRP.

2. **Groundwater.** Groundwater monitoring of irrigated land is required to demonstrate compliance with the Groundwater Limitations. The Discharger is required to submit a groundwater monitoring program within 180 days of the effective date of this Order.

E. Other Monitoring Requirements

1. **Water Reclamation System (Tertiary Filters).** Monitoring of the surface loading rate and effluent turbidity of the tertiary filters is required to demonstrate compliance with Sections 60301.230 and 60301.320 of Title 22 CCR requirements for filtered and disinfected tertiary recycled water.

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. Regional Water Board Standard Provisions.

In addition to the Federal Standard Provisions (Attachment D), the Discharger must comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

1. Order Provision VI.A.2.a identifies the State's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations (e.g. sections 122.41(j)(5) and (k)(2) of 40 CFR).

2. Order Provision VI.A.2.b requires the Discharger to notify Regional Water Board staff, orally and in writing, in the event that the Discharger does not comply or will be unable to comply with any Order requirement. The Provision requires the Discharger to make direct contact with a Regional Water Board staff person.

3. Order Provision VI.A.2.c requires the Discharger to file a petition with, and receive approval from, the State Water Board Division of Water Rights prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse. This requirement is mandated by Water Code section 1211.

C. Special Provisions

1. Reopener Provisions

a. **Standards Revisions (Special Provisions VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

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

b. **Reasonable Potential (Special Provisions VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Discharger governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. **Whole Effluent Toxicity (Special Provisions VI.C.1.c).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a 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.

d. **303(d)-Listed Pollutants (Special Provisions VI.C.1.d).** This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutant(s) that are the subject of any future TMDL action.

e. **Special Studies (Special Provisions VI.C.1.e).** The Discharger may elect to study the feasibility of the use of water effect ratios and/or mixing zones to meet water quality objectives and effluent limitations for toxic pollutants. If these or other future water quality studies provide new information and a basis for determining that a permit condition or conditions should be modified, the Regional

Water Board may reopen this Order and make appropriate modifications to this Order.

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

   a. **Toxicity Reduction Evaluations (Special Provisions VI.C.2.b. and VI.C.2.c).** The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. Attachment E of this Order requires chronic toxicity monitoring for demonstration of compliance with the narrative toxicity objective.

   In addition to WET monitoring, Special Provisions VI.C.2.b. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

   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:

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

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

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

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

   5. *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.

   6. *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.

   7. *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.

8. *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.

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

3. Best Management Practices and Pollution Prevention

a. **Pollution Minimization Plan.** Provision VI.C.3 is included in this Order as required by Section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in effluent at a concentration greater than an applicable effluent limitation.

4. Construction, Operation, and Maintenance Specifications

40 CFR 122.41 (e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.b. of the Order, is an integral part of a well-operated and maintained facility.

5. Special Provisions for Municipal Facilities (POTWs Only)

The Regional Water Board includes special provisions in all NPDES Orders for municipal wastewater treatment facilities regarding wastewater collection systems, sanitary sewer overflows, source control, sludge handling and disposal, operator certification, and adequate capacity. These provisions assure efficient and satisfactory operation of municipal wastewater collection and treatment systems.

a. Wastewater Collection System (Provision VI.C.5.a)

i. Statewide General WDRs for Sanitary Sewer Systems.

The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch as the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.

All NPDES permits for POTWs currently include federally required standard conditions to mitigate discharges (40 CFR 122.41(d)), to report non-compliance (40 CFR 122.41(1)(6) and (7)), and to properly operate and maintain facilities (40 CFR 122.41(e)). This provision is consistent with these federal requirements.

ii. Sanitary Sewer Overflows.

Order No. 2006-0003-DWQ includes a Reporting Program that requires the Discharger, beginning May 2, 2007, to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and telefax reporting when the online SSO database is not available. The goal of these provisions is to ensure appropriate and timely response by the Discharger to sanitary sewer overflows to protect public health and water quality.

The Order also includes reporting provisions (Provision VI.C.6.(a)(ii) and Attachment D subsections I.C., I.D., V.E. and V.H.) to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities.

The Order establishes oral reporting limits for SSOs. SSOs less than 100 gallons are not required to be reported orally, while SSOs greater than or equal to 100 gallons must be reported orally to the Regional Water Board. Inevitably, minor amounts of untreated or partially treated wastewater may escape during carefully executed routine operation and maintenance activities. This Order establishes a reasonable minimum volume threshold for oral notifications. It has been the experience of Regional Water Board staff that SSOs to land that are less than 100 gallons are not likely to have a material effect on the environment or public health. Larger volumes in excess of 100 gallons may indicate a lack of proper operation and maintenance and due care, and pose more of a threat to the environment or public health. All SSOs, regardless of volume, must be electronically reported pursuant to State Water

Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

b. Source Control Provisions (Provision VI.C.5.b)

Because the average dry weather design flow of the Facility is less than 5.0 mgd, the Order does not require the Discharger to develop a pretreatment program that conforms to federal regulations. However, due to the identification of the reasonable potential for the priority pollutants copper in the discharge, the proposed Order includes requirements for the Discharger to implement a source identification and reduction program. The Discharger's source identification and reduction program will need to address only those pollutants that continue to be detected at levels that trigger reasonable potential.

In addition, the Regional Water Board recognizes that some form of source control is prudent to ensure the efficient operation of the WWTF, the safety of Town staff, and to ensure that pollutants do not pass through the treatment facility to impair the beneficial uses of the receiving water. The proposed Order includes prohibitions for the discharge of pollutants that may interfere, pass through, or be incompatible with treatment operations, interfere with the use or disposal of sludge, or pose a health hazard to personnel.

c. Sludge Disposal and Handling (Provision VI.C.5.c)

The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 CFR Parts 257, 258, 501, and 503, the State Water Board promulgated provisions of Title 27, Division 2, of the California Code of Regulations, and with the Water Quality Control Plan for Ocean Waters of California (California Ocean Plan). The Discharger has indicated that that all screenings, sludges, and solids removed from the liquid waste stream are currently disposed of off-site at a permitted land application site and at a municipal solid waste landfill in accordance with all applicable regulations. See Fact Sheet section II.A for more detail.

d. Operator Certification (Provision VI.C.5.d)

This provision requires the WWTF to be operated by supervisors and operators who are certified as required by Title 23, CCR, section 3680.

e. Adequate Capacity (Provision VI.C.5.e)

The goal of this provision is to ensure appropriate and timely planning by the Discharger to ensure adequate capacity for the protection of public health and water quality.

f. Statewide General WDRs for Discharge of Biosolids to Land

This provision requires the Discharger to comply with the State's regulations relating to the discharge of biosolids to the land. The discharge of biosolids through land application is not regulated under this Order. Instead, the Discharger is required to obtain coverage under the State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge.

6. Other Special Provisions – Stormwater

This provision requires the Discharger to comply with the State's regulations relating industrial stormwater activities.

7. Compliance Schedules

a. Compliance Schedule for achieving Final Copper Effluent Limitations

As allowed by section 2.1 of the SIP, the Order contains a compliance schedule that the Discharger must follow in order to achieve compliance with final copper effluent limitations. The compliance schedule is based on an Infeasibility Analysis for copper that the Discharger submitted with its ROWD. Staff's evaluation of the Infeasibility Analysis is discussed in section IV.E.1. of this Fact Sheet.

To comply with the copper limitations established in the Order, the Discharger has committed to implementing additional measures as interim requirements, in addition to meeting performance-based interim limitations. The additional measures that the Discharger is to implement are identified in Table 10 of the Order.

The intent of the compliance schedule is to further evaluate potential reductions in effluent copper concentrations by optimizing treatment of the Town's potable water supply in order to minimize its corrosivity. If this approach does not yield significant copper reductions, the Discharger will evaluate the feasibility of treatment plant upgrades to remove copper from the treated effluent and whether or not industrial and commercial sources contribute copper to the WWTF.

The Discharger may also develop a discharger-specific Water Effects Ratio (WER) that would adjust the CTR water quality criterion for copper to a criterion appropriate for Mark West Creek. If the discharger-specific WER is approved by the Regional Water Board and the site-specific criterion is higher than the CTR criterion such that it can be determined that the discharge does not have

reasonable potential to cause an exceedence of the site-specific criterion, then WQBELs for copper would be amended accordingly.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast 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 and Master Reclamation permit for the Town of Windsor wastewater treatment, reclamation and disposal facility. 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 and a Master Reclamation Permit for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through publication in the Press Democrat on March 12, 2007 and through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/agenda/pending.html beginning on March 12, 2007.

The Discharger and interested agencies and persons have been notified of the Regional Water Board's intent to modify waste discharge requirements for the existing discharge and have been provided opportunities for public meetings and to submit their written views and recommendations. Notification was provided through posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Press Democrat on November 15, 2010. On January 27, 2011, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding adoption of Order No. R1-2011-0006 modifying Order No. R1-2007-0013.

B. Written Comments

Regional Water Board 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 must be received at the Regional Water Board offices by 5:00 p.m. on April 11, 2007.

To be fully responded to by staff and considered by the Regional Water Board, written comments on modifications to Order No. R1-2007-0013 contained in Order No. R1-2011-0006 should be received at the Regional Water Board offices by 5:00 p.m. on December 15, 2010.

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:	January 27, 2011
Time:	9:00 a.m. or as announced in the Regional Water Board's agenda
Location:	Regional Water Board Office, Board Hearing Room 5550 Skylane Boulevard, Suite A Santa Rosa, CA 95403

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/northcoast 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 (ROWD), 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 707-576-2220.

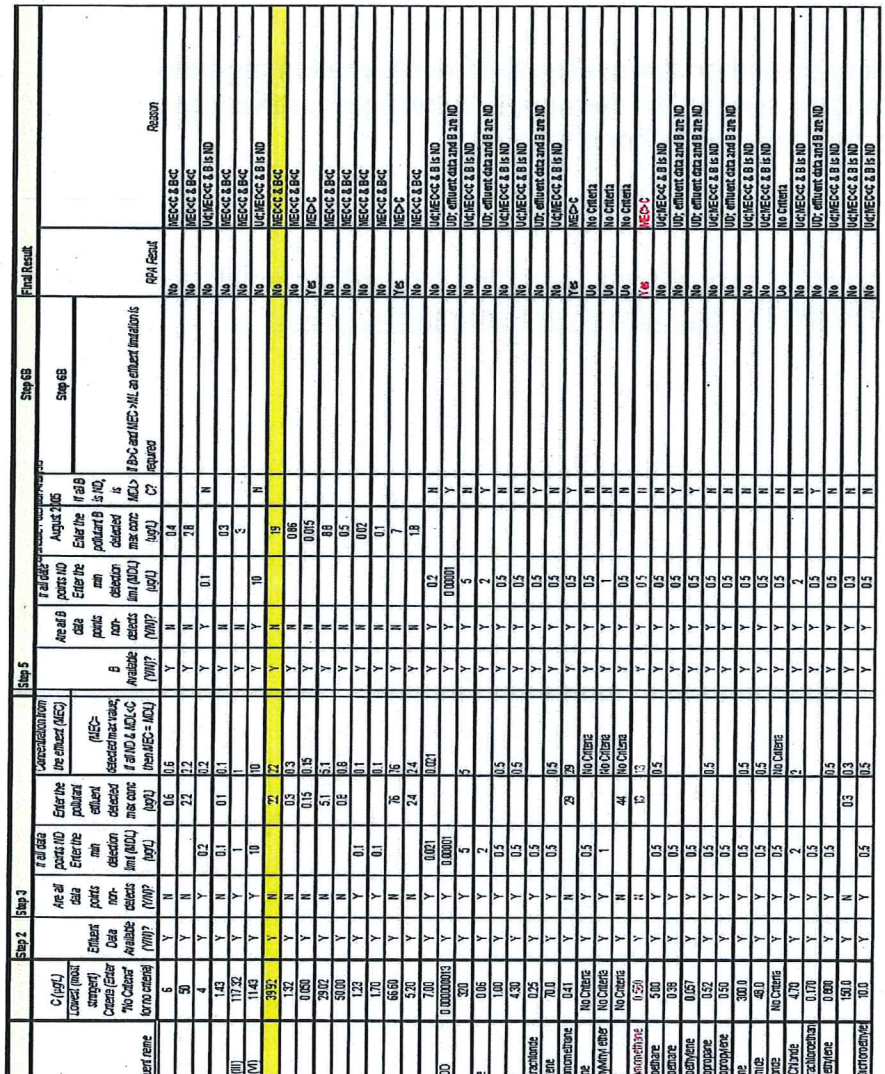
F. Register of Interested Persons

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 Cathy Goodwin at 707-576-2687 or cgoodwin@waterboards.ca.gov .

ATTACHMENT F-1
REASONABLE POTENTIAL ANALYSIS



		Step 2	Step 3			Step 5					Step 6B	Final Result	
Constituent name	C (µg/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (µg/L)	Enter the pollutant effluent detected max conc (µg/L)	Concentration from the effluent (MEC) (MEC= detected max value; if all ND & MDL<C then MEC = MDL)	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all B data points ND Enter the min detection limit (MDL) (µg/L)	August 2005 Enter the pollutant B detected max conc (µg/L)	August 2005 If all B is ND, is MDL > C?	Step 6B If B>C and MEC >NL an effluent limitation is required	RPA Result	Reason
Antimony	6	Y	N		0.6	0.6	Y	N		0.4			No	MEC<C & B<C
Arsenic	50	Y	N		2.2	2.2	Y	N		2.8			No	MEC<C & B<C
Beryllium	4	Y	Y	0.2		0.2	Y	Y	0.1		N		No	UL=MEC<C & B is ND
Cadmium	1.43	Y	N	0.1	0.1	0.1	Y	N		0.3			No	MEC<C & B<C
Chromium (III)	117.32	Y	Y	1		1	Y	N		3			No	MEC<C & B<C
Chromium (VI)	11.43	Y	Y	10		10	Y	Y	10		N		No	UL=MEC<C & B is ND
Copper	3932	Y	N		21	12	Y	N		19			No	MEC<C & B<C
Lead	1.32	Y	N		0.5	0.3	Y	N		0.86			No	MEC<C & B<C
Mercury	0.050	Y	N		0.15	0.15	Y	N		0.015			Yes	MEP>C
Nickel	29.02	Y	N		5.1	5.1	Y	N		8.8			No	MEC<C & B<C
Selenium	58.00	Y	N		0.6	0.6	Y	N		0.5			No	MEC<C & B<C
Silver	1.23	Y	Y	0.1		0.1	Y	N		0.02			No	MEC<C & B<C
Thallium	1.70	Y	Y	0.1		0.1	Y	N		0.1			No	MEC<C & B<C
Zinc	66.60	Y	N		76	76	Y	N		7			Yes	MEP>C
Cyanide	5.20	Y	N		2.4	2.4	Y	N		1.8			No	MEC<C & B<C
Asbestos	7.00	Y	Y	0.021		0.021	Y	Y	0.2		N		No	UL=MEC<C & B is ND
2,3,7,8-TCDD	0.000000013	Y	Y	0.00001			Y	Y	0.00001		Y		No	UD; effluent data and B are ND
Acrolein	320	Y	Y	5		5	Y	Y	5		N		No	UL=MEC<C & B is ND
Acrylonitrile	0.06	Y	Y	2			Y	Y	2		Y		No	UD; effluent data and B are ND
Benzene	1.00	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Bromoform	4.30	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Carbon Tetrachloride	0.25	Y	Y	0.5			Y	Y	0.5		Y		No	UD; effluent data and B are ND
Chlorobenzene	70.0	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Chlorodibromomethane	0.41	Y	N		29	29	Y	Y	0.5		Y		Yes	MEP>C
Chloroethane	No Criteria	Y	Y	0.5		No Criteria	Y	Y	0.5		N		No	No Criteria
2-Chloroethylvinyl ether	No Criteria	Y	Y	1		No Criteria	Y	Y	1		N		No	No Criteria
Chloroform	No Criteria	Y	N		44	No Criteria	Y	Y	0.5		N		No	No Criteria
Dichlorobromomethane	0.56	Y	N		13	13	Y	Y	0.5		N		Yes	MEP>C
1,1-Dichloroethane	5.00	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
1,2-Dichloroethane	0.38	Y	Y	0.5			Y	Y	0.5		Y		No	UD; effluent data and B are ND
1,1-Dichloroethylene	0.057	Y	Y	0.5			Y	Y	0.5		Y		No	UD; effluent data and B are ND
1,2-Dichloropropane	0.52	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
1,3-Dichloropropylene	0.50	Y	Y	0.5			Y	Y	0.5		N		No	UD; effluent data and B are ND
Ethylbenzene	300.0	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Methyl Bromide	48.0	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Methyl Chloride	No Criteria	Y	Y	0.5		No Criteria	Y	Y	0.5		N		No	No Criteria
Methylene Chloride	4.70	Y	Y	2		2	Y	Y	2		N		No	UL=MEC<C & B is ND
1,1,2,2-Tetrachloroethane	0.170	Y	Y	0.5			Y	Y	0.5		Y		No	UD; effluent data and B are ND
Tetrachloroethylene	0.800	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND
Toluene	150.0	Y	N		0.3	0.3	Y	Y	0.3		N		No	UL=MEC<C & B is ND
1,2-Trans-Dichloroethylene	10.0	Y	Y	0.5		0.5	Y	Y	0.5		N		No	UL=MEC<C & B is ND

Attachment F-1
Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility
Reasonable Potential Analysis
August 2006

Beginning			Step 2	Step 3				Step 5					inal Result	
	Constituent name	C (µg/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	Maximum Pollutant Concentration from the effluent (MEC) (ug/L) (MEC= detected max value; if all ND & MDL<C then MEC = MDL)	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL> C?	RPA Result	Reason
41	1,1,1-Trichloroethane	200.0	Y	Y	0.5		0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
42	1,1,2-Trichloroethane	0.60	Y	Y	0.5		0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
43	Trichloroethylene	2.70	Y	Y	0.5		0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
44	Vinyl Chloride	0.50	Y	Y	0.5			Y	Y	0.5		N	No	UD; effluent data and B are ND
45	2-Chlorophenol	120.0	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
46	2,4-Dichlorophenol	93.0	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
47	2,4-Dimethylphenol	540.0	Y	Y	2		2	Y	Y	2		N	No	Ud;MEC<C & B is ND
48	2-Methyl- 4,6-Dinitrophenol	13.4	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
49	2,4-Dinitrophenol	70.0	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
50	2-Nitrophenol	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	Y	Y	1		No Criteria	Y	Y	1		N	Uo	No Criteria
53	Pentachlorophenol	0.280	Y	Y	1			Y	Y	1		Y	No	UD; effluent data and B are ND
54	Phenol	21,000	Y	Y	1		1	Y	Y	1		N	No	Ud;MEC<C & B is ND
55	2,4,6-Trichlorophenol	2.10	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
56	Acenaphthene	1,200	Y	Y	0.3		0.3	Y	Y	0.3		N	No	Ud;MEC<C & B is ND
57	Acenaphthylene	No Criteria	Y	Y	0.2		No Criteria	Y	Y	0.2		N	Uo	No Criteria
58	Anthracene	9,600	Y	Y	0.3		0.3	Y	Y	0.3		N	No	Ud;MEC<C & B is ND
59	Benzidine	0.00012	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
60	Benzo(a)Anthracene	0.0044	Y	Y	0.3			Y	Y	0.3		Y	No	UD; effluent data and B are ND
61	Benzo(a)Pyrene	0.0044	Y	Y	0.3			Y	Y	0.3		Y	No	UD; effluent data and B are ND
62	Benzo(b)Fluoranthene	0.0044	Y	Y	0.3			Y	Y	0.3		Y	No	UD; effluent data and B are ND
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.1		No Criteria	Y	Y	0.1		N	Uo	No Criteria
64	Benzo(k)Fluoranthene	0.0044	Y	Y	0.3			Y	Y	0.3		Y	No	UD; effluent data and B are ND
65	Bis(2-Chloroethoxy)Methane	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
66	Bis(2-Chloroethyl)Ether	0.031	Y	Y	1			Y	Y	1		Y	No	UD; effluent data and B are ND
67	Bis(2-Chloroisopropyl)Ether	1,400	Y	Y	2		2	Y	Y	2		N	No	Ud;MEC<C & B is ND
68	Bis(2-Ethylhexyl)Phthalate	1.80	Y	N		0.4	0.4	Y	Y	5		Y	No	Ud;MEC<C & B is ND
69	4-Bromophenyl Phenyl Ether	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
70	Butylbenzyl Phthalate	3,000	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
71	2-Chloronaphthalene	1,700	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
72	4-Chlorophenyl Phenyl Ether	No Criteria	Y	Y	5		No Criteria	Y	Y	0.3		N	Uo	No Criteria
73	Chrysene	0.0044	Y	Y	0.3			Y	Y	0.1		Y	No	UD; effluent data and B are ND
74	Dibenzo(a,h)Anthracene	0.0044	Y	Y	0.1			Y	Y	0.5		Y	No	UD; effluent data and B are ND
75	1,2-Dichlorobenzene	600.0	Y	Y	0.5		0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
76	1,3-Dichlorobenzene	400.0	Y	Y	0.5		0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
77	1,4-Dichlorobenzene	5.0	Y	N		0.5	0.5	Y	Y	0.5		N	No	Ud;MEC<C & B is ND
78	3,3 Dichlorobenzidine	0.040	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
79	Diethyl Phthalate	23,000	Y	Y	2		2	Y	Y	2		N	No	Ud;MEC<C & B is ND
80	Dimethyl Phthalate	313,000	Y	Y	2		2	Y	Y	2		N	No	Ud;MEC<C & B is ND

Attachment F-1
Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility
Reasonable Potential Analysis
August 2006

Beginning			Step 2	Step 3				Step 5					Final Result	
	Constituent name	C (µg/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	Maximum Pollutant Concentration from the effluent (MEC) (ug/L) (MEC= detected max value; if all ND & MDL<C then MEC = MDL)	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL> C?	RPA Result	Reason
81	Di-n-Butyl Phthalate	2,700	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
82	2,4-Dinitrotoluene	0.110	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
83	2,6-Dinitrotoluene	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	5		No Criteria	Y	Y	5		N	Uo	No Criteria
85	1,2-Diphenylhydrazine	0.040	Y	Y	1			Y	Y	1		Y	No	UD; effluent data and B are ND
86	Fluoranthene	300	Y	Y	0.5		0.5	Y	Y	0.05		N	No	Ud;MEC<C & B is ND
87	Fluorene	1,300	Y	Y	1		1	Y	Y	0.1		N	No	Ud;MEC<C & B is ND
88	Hexachlorobenzene	0.00075	Y	Y	1			Y	Y	1		Y	No	UD; effluent data and B are ND
89	Hexachlorobutadiene	0.440	Y	Y	1			Y	Y	1		Y	No	UD; effluent data and B are ND
90	Hexachlorocyclopentadiene	50.0	Y	Y	5		5	Y	Y	5		N	No	Ud;MEC<C & B is ND
91	Hexachloroethane	1.900	Y	Y	1		1	Y	Y	1		N	No	Ud;MEC<C & B is ND
92	Indeno(1,2,3-cd)Pyrene	0.0044	Y	Y	0.05			Y	Y	0.05		Y	No	UD; effluent data and B are ND
93	Isophorone	8.40	Y	Y	1		1	Y	Y	1		N	No	Ud;MEC<C & B is ND
94	Naphthalene	No Criteria	Y	Y	2		No Criteria	Y	Y	0.2		N	Uo	No Criteria
95	Nitrobenzene	17.0	Y	Y	1		1	Y	Y	1		N	No	Ud;MEC<C & B is ND
96	N-Nitrosodimethylamine	0.00069	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
97	N-Nitrosodi-n-Propylamine	0.0050	Y	Y	5			Y	Y	5		Y	No	UD; effluent data and B are ND
98	N-Nitrosodiphenylamine	5.0	Y	Y	1		1	Y	Y	1		N	No	Ud;MEC<C & B is ND
99	Phenanthrene	No Criteria	Y	Y	0.05		No Criteria	Y	Y	0.05		N	Uo	No Criteria
100	Pyrene	960.0	Y	Y	0.05		0.05	Y	Y	0.05		N	No	Ud;MEC<C & B is ND
101	1,2,4-Trichlorobenzene	5.0	Y	Y	5			Y	Y	0.005		N	No	UD; effluent data and B are ND
102	Aldrin	0.00013	Y	Y	0.005			Y	Y	0.01		Y	No	UD; effluent data and B are ND
103	alpha-BHC	0.0039	Y	Y	0.01			Y	Y	0.005		Y	No	UD; effluent data and B are ND
104	beta-BHC	0.0140	Y	Y	0.005		0.005	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
105	gamma-BHC	0.0190	Y	Y	0.01		0.01	Y	Y	0.005		N	No	Ud;MEC<C & B is ND
106	delta-BHC	No Criteria	Y	Y	0.005		No Criteria	Y	Y	0.005		N	Uo	No Criteria
107	Chlordane	0.00057	Y	Y	0.02			Y	Y	0.02		Y	No	UD; effluent data and B are ND
108	4,4'-DDT	0.00059	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
109	4,4'-DDE	0.00059	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
110	4,4'-DDD	0.00083	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
111	Dieldrin	0.00014	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
112	alpha-Endosulfan	0.0560	Y	Y	0.01		0.01	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
113	beta-Endolsulfan	0.0560	Y	Y	0.01		0.01	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
114	Endosulfan Sulfate	110	Y	Y	0.01		0.01	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
115	Endrin	0.0360	Y	Y	0.01		0.01	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
116	Endrin Aldehyde	0.760	Y	Y	0.01		0.01	Y	Y	0.01		N	No	Ud;MEC<C & B is ND
117	Heptachlor	0.00021	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
118	Heptachlor Epoxide	0.00010	Y	Y	0.01			Y	Y	0.01		Y	No	UD; effluent data and B are ND
9-125	PCBs sum	0.00017	Y	Y	0.01			Y	Y	0.1		Y	No	UD; effluent data and B are ND
126	Toxaphene	0.00020	Y	Y	0.5			Y	Y	0.5		Y	No	UD; effluent data and B are ND

Red constituents indicate the need to develop a limit
Yellow highlighting indicates constituents evaluated in the permit Fact Sheet

Attachment F-1
Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility
Effluent and Receiving Water Monitoring Data Used for RPA

Receiving Water: pH →		7.7			8.3			7.2									
Mark West Creek Hardness→		190 mg/L			250 mg/l			110 mg/L					150 mg/l				
Used RDL for NDs and J = DNQ		02/25/02	02/25/02		10/09/02	10/09/02		11/13/02	11/13/02		2/12/2003	11/12/2003		9/9/2004	9/19/2005		9/19/2001
# in CTR	CONSTITUENT	Receiving Water	Effluent		Receiving Water	Effluent		Receiving Water	Effluent		UV Effluent	UV Effluent		UV Effluent	UV Effluent		CCT Effluent
	Aluminum											82	<	50	59		75
1	Antimony	< 0.5	< 0.5	<	0.5	0.6	J	0.4	J 0.496			< 6	<	6	< 6	<	6
2	Arsenic	1.4	0.80		1.70	2.20		2.8	1.7			< 2	<	2	< 2	<	2
3	Beryllium	< 0.2	< 0.2	<	0.1	< 0.1	<	0.1	< 0.1			< 1	<	1	< 1	<	1
4	Cadmium	< 0.1	< 0.1		0.3	J 0.1	J	0.04	J 0.06			< 1	<	1	< 1	<	1
5a	Chromium III	3	1		1	J 0.5		0.5	< 0.5			< 50	<	1	< 1	<	1
5b	Chromium (VI)	< 10	10	<	10	< 10	<	10	< 10								
6	Copper	3.4	11		2	14	<	4.3	< 9.8			< 100	<	50	< 50	<	50
7	Lead	0.86	0.3		0.5	0.3		0.63	0.29			< 5	<	5	< 5	<	5
8	Mercury	0.015	0.1500		0.0034	0.0021		0.008	0.0014			< 1	<	1	< 1	<	1
9	Nickel	8.1	3.6		5.5	5.1		8.8	4.5			< 10	<	10	< 10	<	10
10	Selenium	< 2	< 2	J	0.5	J 0.8	<	1	J 0.7			< 5	<	5	< 5	<	5
11	Silver	< 0.1	< 0.1	J	0.02	< 0.1	<	0.1	< 0.1			< 10	<	10	< 10	<	10
12	Thallium	0.1	< 0.1	<	0.1	J 0.08	<	0.1	< 0.1			< 1	<	1	< 1	<	1
13	Zinc	< 10	40		5	50		7	76			< 50		55	70	<	50
14	Cyanide	J 1.1	2	<	3	< 3	J	1.8	J 2.4			< 5					
15	Asbestos (units = MFL)	< 0.56	< 0.56	<	0.2	< 0.2	<	5.12	< 0.2	<	0.021	< 0.021	<	0.2	< 0.2		
16	2,3,7,8-TCDD (Dioxin)																
17	Acrolein	< 5	< 5	<	5	< 5	<	50	< 5								
18	Acrylonitrile	< 2	< 2	<	2	< 2	<	20	< 2								
19	Benzene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	10	< 1	<	1	< 1	<	1
20	Bromoform	< 0.5	< 0.5	<	0.5	J 0.2	<	5	< 0.5			< 1	<	1	< 5	<	1
21	Carbon Tetrachloride	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 0.5	<	0.5	< 0.5	<	1
22	Chlorobenzene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 5	<	5	< 5	<	1
23	Chlordibromomethane	< 0.5	< 0.5	<	0.5	3.2	<	5	< 0.5	<	1	< 1	<	1	< 5		29
24	Chloroethane	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<		< 1	<	1	< 5	<	1
25	2-Chloroethylvinyl Ether	< 1	< 1	<	1	< 1	<	1	< 1	<	10	< 1	<	1	< 5	<	1
26	Chloroform	< 0.5	16.0	<	0.5	18.0	<	5	< 4.1	<	1	< 1	<	1	< 5		44
27	Dichlorobromomethane	< 0.5	13.00	<	0.5	9.70	<	5	< 0.5	<	1	< 1	<	1	< 5		9
28	1,1-Dichloroethane	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
29	1,2-Dichloroethane	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
30	1,1-Dichloroethylene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
31	1,2-Dichloropropane	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
32	1,3-Dichloropropylene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
33	Ethylbenzene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
34	Methyl Bromide	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<					< 5	<	1
35	Methyl Chloride	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<					< 5	<	1
36	Methylene Chloride	< 2	< 2	<	2	< 2	<	20	< 2	<	1	< 1	<	1	< 25	<	1
37	1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
38	Tetrachloroethylene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1
39	Toluene	< 0.3	0.3	<	0.3	< 0.3	<	5	< 0.3	<	1	< 1	<	1	< 5	<	1
40	1,2-Trans-Dichloroethylene	< 0.5	< 0.5	<	0.5	< 0.5	<	5	< 0.5	<	1	< 1	<	1	< 5	<	1

Attachment F-1
Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility
Effluent and Receiving Water Monitoring Data Used for RPA

Receiving Water: pH →		7.7		8.3		7.2							
Mark West Creek Hardness→		190 mg/L		250 mg/l		110 mg/L			150 mg/l				
Used RDL for NDs and J = DNQ		02/25/02	02/25/02	10/09/02	10/09/02	11/13/02	11/13/02	2/12/2003	11/12/2003	9/9/2004	9/19/2005	9/19/2001	
# In CTR	CONSTITUENT	Receiving Water	Effluent	Receiving Water	Effluent	Receiving Water	Effluent	UV Effluent	UV Effluent	UV Effluent	UV Effluent	CCT Effluent	
41	1,1,1-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 1	< 1	< 1	< 5	< 1	
42	1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 1	< 1	< 1	< 5	< 1	
43	Trichloroethylene	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 1	< 1	< 1	< 5	< 1	
44	Vinyl Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 1	< 0.5	< 0.5	< 5	< 1	
45	2-Chlorophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
46	2,4-Dichlorophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 48	< 48	< 5	< 1	
47	2,4-Dimethylphenol	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 9.5	< 9.5	< 5	< 1	
48	2-Methyl-4,6-Dinitrophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 9.5	< 9.5	< 5	< 1	
49	2,4-Dinitrophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 48	< 48	< 5	< 1	
50	2-Nitrophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
51	4-Nitrophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 48	< 48	< 5	< 1	
52	3-Methyl-4-Chlorophenol	< 1	< 1	< 1	< 1	< 1	< 1	<					
53	Pentachlorophenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 48	< 48	< 0.2	< 1	
54	Phenol	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 9.5	< 9.5	< 5	< 1	
55	2,4,6-Trichlorophenol	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
56	Acenaphthene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
57	Acenaphthylene	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 10	< 9.5	< 9.5	< 5	< 1	
58	Anthracene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 9.5	< 9.5	< 5	< 1	
59	Benzidine	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 48	< 48	< 5	< 1	
60	Benzo(a)Anthracene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
61	Benzo(a)Pyrene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
62	Benzo(b)Fluoranthene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
63	Benzo(ghi)Perylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<	< 10	< 10	< 5	< 1	
64	Benzo(k)Fluoranthene	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
65	Bis(2-Chloroethoxy)Methane	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
66	Bis(2-Chloroethyl)Ether	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 9.5	< 9.5	< 25	< 1	
67	Bis(2-Chloroisopropyl)Ether	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 9.5	< 9.5	< 50	< 1	
68	Bis(2-Ethylhexyl)Phthalate	< 5	< 0.4	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 43	< 1	
69	4-Bromophenyl Phenyl Ether	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
70	Butylbenzyl Phthalate	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
71	2-Chloronaphthalene	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
72	4-Chlorophenyl Phenyl Ether	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 9.5	< 9.5	< 5	< 1	
73	Chrysene	< 0.3	< 0.3	< 0.3	< 0.3	< 3.1	< 0.3	< 10	< 9.5	< 9.5	< 5	< 1	
74	Dibenzo(a,h)Anthracene	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 10	< 9.5	< 9.5	< 5	< 1	
75	1,2 Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 10	< 9.5	< 9.5	< 5	< 1	
76	1,3 Dichlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 10	< 9.5	< 9.5	< 5	< 1	
77	1,4 Dichlorobenzene	< 0.5	< 0.50	< 0.5	< 0.5	< 5	< 0.5	< 10	< 9.5	< 9.5	< 5	< 1	
78	3,3'-Dichlorobenzidine	< 5	< 5	< 5	< 5	< 5	< 5	< 20	< 9.5	< 9.5	< 5	< 1	
79	Diethyl Phthalate	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 9.5	< 9.5	< 5	< 1	
80	Dimethyl Phthalate	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 9.5	< 9.5	< 5	< 1	

Attachment F-1
Town of Windsor Wastewater Treatment, Reclamation and Disposal Facility
Effluent and Receiving Water Monitoring Data Used for RPA

Receiving Water:	pH →	7.7			8.3		7.2											
Mark West Creek	Hardness→	100 mg/L			250 mg/L		110 mg/L					150 mg/L						
Used RDL for NDs and J = DNQ		02/25/02	02/25/02		10/09/02		10/09/02	11/13/02		2/12/2003		11/12/2003		9/8/2004		9/19/2005		9/19/2001
# In CTR	CONSTITUENT	Receiving Water	Effluent		Receiving Water		Effluent	Receiving Water		Effluent		UV Effluent		UV Effluent		UV Effluent		CCT Effluent
81	Di-n-Butyl Phthalate	< 5	5	<	5	<	5	< 5	<	5	<	10	<	8.5	<	9.5	<	5	<	1
82	2,4-Dinitrotoluene	< 5	5	<	5	<	5	< 5	<	5	<	10	<	8.5	<	9.5	<	5	<	1
83	2,6-Dinitrotoluene	< 5	5	<	5	<	5	< 5	<	5	<	10	<	8.5	<	9.5	<	5	<	1
84	Di-n-Octyl Phthalate	< 5	5	<	5	<	5	< 5	<	5	<	10	<	9.5	<	9.5	<	5	<	1
85	1,2-Diphenylhydrazine	< 1	1	<	1	<	1	< 1	<	1	<									
86	Fluoranthene	< 0.05	0.05	<	0.05	<	0.05	< 0.05	<	0.05	<	10	<	9.5	<	9.5	<	5	<	1
87	Fluorene	< 0.1	0.1	<	0.1	<	0.1	< 0.1	<	0.1	<	10	<	9.5	<	9.5	<	5	<	1
88	Hexachlorobenzene	< 1	1	<	1	<	1	< 1	<	1	<	10	<	8.5	<	8.5	<	5	<	1
89	Hexachlorobutadiene	< 1	1	<	1	<	1	< 1	<	1	<	10	<	9.5	<	9.5	<	5	<	1
90	Hexachlorocyclopentadiene	< 5	5	<	5	<	5	< 5	<	5	<	10	<	9.5	<	9.5	<	5	<	1
91	Hexachloroethane	< 1	1	<	1	<	1	< 1	<	1	<	10	<	8.5	<	8.5	<	5	<	1
92	Indeno(1,2,3-cd) Pyrene	< 0.05	0.05	<	0.05	<	0.05	< 0.05	<	0.05	<	10	<	8.5	<	8.5	<	5	<	1
93	Isophorone	< 1	1	<	1	<	1	< 1	<	1	<	10	<	8.5	<	8.5	<	5	<	1
94	Naphthalene	< 0.2	0.2	<	0.2	<	0.2	< 0.2	<	0.2	<	10	<	9.5	<	9.5	<	5	<	1
95	Nitrobenzene	< 1	1	<	1	<	1	< 1	<	1	<	10	<	9.5	<	8.5	<	5	<	1
96	N-Nitrosodimethylamine	< 5	5	<	5	<	5	< 5	<	5	<	20	<	9.5	<	8.5	<	5	<	1
97	N-Nitrosodi-n-Propylamine	< 5	5	<	5	<	5	< 5	<	5	<	10	<	9.5	<	9.5	<	5	<	1
98	N-Nitrosodiphenylamine	< 1	1	<	1	<	1	< 1	<	1	<	10	<	9.5	<	9.5	<	5	<	1
99	Phenanthrene	< 0.05	0.05	<	0.05	<	0.05	< 0.05	<	0.05	<	10	<	9.5	<	9.5	<	5	<	1
100	Pyrene	< 0.05	0.05	<	0.05	<	0.05	< 0.05	<	0.05	<	10	<	9.5	<	9.5	<	5	<	1
101	1,2,4-Trichlorobenzene	< 5	5	<	5	<	5	< 5	<	5	<	10	<	9.5	<	9.5	<	5	<	1
102	Aldrin	< 0.005	0.005	<	0.005	<	0.005	< 0.005	<	0.005	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
103	alpha-BHC	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
104	beta-BHC	< 0.005	0.005	<	0.005	<	0.005	< 0.005	<	0.005	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
105	gamma-BHC (lindane)	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
106	delta-BHC	< 0.005	0.005	<	0.005	<	0.005	< 0.005	<	0.005	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
107	Chlordane	< 0.02	0.02	<	0.02	<	0.02	< 0.02	<	0.02	<	1	<	0.95	<	0.95	<	2	<	1
108	4,4-DDT	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
109	4,4-DDE	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
110	4,4-DDD	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
111	Dieldrin	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
112	alpha-Endosulfan	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
113	beta-Endosulfan	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
114	Endosulfan Sulfate	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
115	Endrin	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
116	Endrin Aldehyde	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.1	<	0.95	<	0.95	<	0.1	<	0.05
117	Heptachlor	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
118	Heptachlor Epoxide	< 0.01	0.01	<	0.01	<	0.01	< 0.01	<	0.01	<	0.05	<	0.048	<	0.048	<	0.1	<	0.05
119-125	PCBs	< 0.1	0.1	<	0.1	<	0.1	< 0.1	<	0.1	<	1	<	0.95	<	0.95	<	0.1	<	1
126	Toxaphene	< 0.5	0.5	<	0.6	<	0.5	< 0.5	<	0.5	<	1	<	0.95	<	0.95	<	2	<	1

ATTACHMENT G – WATER RECLAMATION REQUIREMENTS AND PROVISIONS

A. Water Reclamation Findings

1. The California Department of Health Services (DHS) has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, CCR, Sections 60301 through 60355 (hereinafter Title 22) for the use of recycled water for irrigation, impoundments, cooling water, and other purposes. The DHS has also established Guidelines for Use of Reclaimed Water. This Order (Order No. R1-2007-0013, including Attachment G) implements the Title 22 recycled water criteria.

2. In 1996, the State Water Board and DHS set forth principles, procedures, and agreements to which the agencies committed themselves, relative to the use of recycled water in California, in a document titled Memorandum of Agreement Between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water (MOA). This Order is consistent with the MOA.

3. This Order implements Section 13523.1 of the California Water Code (CWC) which authorizes issuance of a Master Reclamation Permit to suppliers or distributors, or both, of recycled water in lieu of issuing individual water reclamation requirements to each recycled water user.

4. The Discharger is required to develop and keep updated, an Engineering Report for the use of recycled water as required by Sections 60313(d), 60314, and 60323 of Title 22. This Title 22 Engineering Report must be approved by DHS and the Regional Water Board prior to delivery of disinfected, advanced treated effluent to any recycled water use site requiring tertiary effluent as required by Title 22. The Title 22 Engineering Report shall describe how the Discharger will operate the treatment facilities and reclamation system to comply with all applicable rules and regulations, including Title 22 and this Order. The Title 22 Engineering Report shall also discuss the possibility of incidental runoff from recycled water use areas and describe measures the Discharger will take to minimize this possibility.

   Incidental runoff is defined as runoff that is unintentional (e.g., accidental breakage of a sprinkler head) and not associated with negligence on the part of the Discharger or the recycled water user. These incidents are typically infrequent, low volume, accidental, not due to a pattern of neglect or lack of oversight, and are promptly addressed. The Regional Water Board recognizes that such minor violations are unavoidable and present a low risk to water quality. Incidental runoff incidents shall be summarized in the Discharger's quarterly recycled water monitoring report. Enforcement action shall be considered for inadequate response by the Discharger to incidental runoff incidents, repeated runoff incidents that were within the Discharger's control, where incidental runoff directly causes violations of water quality objectives, incidents that create a condition of pollution or nuisance, and discharges that reach surface water in violation

of Discharge Prohibitions in section III of the Order and/or Water Reclamation Requirements in Attachment G, Section B.4 or B.6 of the Order.

5. This Order authorizes the Discharger to reuse treated municipal wastewater that complies with effluent limitations contained in section IV of the Order for uses that have been addressed in an approved Title 22 Engineering Report and for which recycled water user agreements have been negotiated.

6. Effluent Limitations included in Order No. R1-2007-0013 will assure compliance with requirements contained in Title 22 and the DHS/State Water Board MOA.

7. The use of recycled water is exempt from the requirements of Title 23, CCR, Section 2510, et. seq., (hereinafter Chapter 15) and Title 27, CCR, pursuant to Section 2511(b) based on the following:

   a. The Board is issuing a Master Reclamation Permit, and

   b. The reclamation complies with the Basin Plan, and

   c. The recycled water does not need to be managed according to 22 CCR, Division 4.5, Chapter 11, as a hazardous waste.

8. The Regional Water Board consulted with DHS, the Sonoma County Health Department, and the local Mosquito Abatement District and considered any recommendations regarding public health aspects for this use of recycled water.

B. Water Reclamation Requirements

1. The use of recycled water shall not result in unreasonable waste of water.

2. The use of recycled water shall not create a condition of pollution or nuisance as defined in CWC Section 13050(m).

3. The Discharger shall be responsible to ensure that all users of recycled water comply with the terms and conditions of this Order and with any rules, ordinances, or regulations adopted by the Discharger.

4. Recycled water shall not be applied to irrigation areas during periods when uncontrolled runoff may occur.

5. Recycled water shall be applied in such a manner so as not to exceed vegetative demand or field capacity.

6. Recycled water shall not be allowed to escape the recycled use area(s) in the form of surface runoff. [CCR Title 22, Section 60310(e)]

7. Direct or windblown spray, mist, or runoff from irrigation areas shall not enter dwellings, designated outdoor eating areas, or food handling facilities. [CCR Title 22, Section 60310(e)(2)]

8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff. [CCR Title 22, Section 60310(e)(3)]

9. There shall be no bypassing of untreated or partially treated wastewater from the recycled water plant or any intermediate processes to the point of use. [CCR Title 22, Section 60331]

10. All recycled water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities.

11. The Discharger shall implement the requirements of the California Health and Safety Code (CHSC), section 116815 regarding the installation of purple pipe. CHSC section 116815, requires that "all pipes installed above or below the ground, on or after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape." Section 116815 also contains exemptions that apply to municipal facilities that have established a labeling or marking system for recycled water used on their premises and for water delivered for agricultural use. On March 1, 2003, the Discharger submitted a report documenting compliance with this requirement. The Discharger shall continue to implement the requirements of CHSC section 116815 during the term of this Order.

12. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access. [CCR Title 22, 60310(l)]

13. Cross-connections shall not occur between any recycled water system and any separate system conveying potable water. [22 CCR, Section 60310(h)] Supplementing recycled water with potable water shall not be allowed except through air gap separation [CCR Title 22, Section 30615].

14. All reservoirs and ponds storing wastewater or recycled water shall be adequately protected from erosion, washout, or flooding from a rainfall event having a predicted frequency of once in 100 years.

15. Disinfected tertiary recycled water shall not be irrigated within 50 feet of any domestic water supply well or domestic water supply surface intake, unless the technical requirements specified in CCR Title 22, Section 60310(a) have been met and approved by DHS.

16. The use of recycled water shall not cause degradation of any water supply.

17. Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.

18. All areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide that include the following wording: 'RECYCLED WATER – DO NOT DRINK'. [CCR Title 22, Section 60310(g)] Each sign shall display an international symbol similar to that shown in CCR Title 22, Figure 60310-A. These warning signs shall be posted at least every 500 feet with a minimum of a sign at each corner and access road.

19. DHS Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines provides guidance for the separation of new potable water mains and recycled water pipelines which shall be implemented as follows:

    a. There shall be at least a four-foot horizontal separation between all pipelines transporting recycled water and those transporting disinfected tertiary recycled water and new potable water mains.

    b. There shall be at least a one-foot vertical separation at crossings between all pipelines transporting recycled water and potable water mains, with the potable water main above the recycled water pipeline, unless approved by the DHS.

    c. All portions of the recycled water pipeline that cross under a potable water main shall be enclosed in a continuous sleeve.

    d. Recycled water pipelines shall not be installed in the same trench as new water mains.

    e. Where site conditions make it impossible to comply with the above conditions, any variation shall be approved by DHS and comply with alternative construction criteria for separation between sanitary sewers and potable water mains as described in the DHS document titled "Criteria for Separation of Water Mains and Sanitary Sewers", treating the recycled water line as if a sanitary sewer.

20. A minimum freeboard, consistent with pond design, but not less than two feet, shall be maintained under normal operating conditions in any reservoir or pond containing recycled water. When extraordinary operating conditions necessitate a freeboard of less than two feet, the Discharger will document the variance in the monthly self-monitoring report. The report will include an explanation of the circumstances under

which the variance is required, the estimated minimum freeboard during the extraordinary period, and any permit violations occurring as a result of the variance.

21. The use of recycled water for dust suppression shall only occur during periods of dry weather and shall be limited to periods of short duration.

C. Water Reclamation Provisions

The Discharger shall manage recycled water, and shall develop, establish and enforce administrative procedures, engineering standards, rules, ordinances and/or regulations governing the design and construction of recycled water systems and use facilities and the use of recycled water in accordance with the criteria established in CCR Title 22 and this Order. The Discharger shall develop user agreements requiring user compliance with CCR Title 22 and this Order. Water reclamation engineering standards, rules, ordinances and/or regulations shall be approved by the Regional Water Board Executive Officer and DHS.

Upon approval of the Discharger's procedures, engineering standards, rules, ordinances, and/or regulations, the Discharger may authorize specific additional water reclamation projects, on a case-by-case basis, in accordance with the approved program and agreements.

The Discharger shall submit revised and/or additional engineering report(s) for Regional Water Board and DHS approval, prior to initiating any recycled water use (e.g., new industrial use, recreational surface impoundments, water cooling, new dual-plumbed system, etc.) not addressed in any previously approved CCR Title 22 engineering report(s). Engineering report(s) shall be prepared by a properly qualified engineer registered in California and experienced in the field of wastewater treatment, and shall contain (1) a description of the design of the reclamation system; (2) a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use areas; and (3) a cross-connection control program (Title 17 of the California Code of Regulations). Engineering reports shall clearly indicate the means for compliance with CCR Title 22 regulations and this Order.

The Discharger shall conduct periodic inspections of the recycled water use areas, facilities, and operations to monitor and assure compliance with the conditions of this Order The Discharger shall take whatever actions are necessary, including termination of delivery of recycled water, to correct any user violations. The Discharger shall, upon prior notification to the user, conduct regular inspections to assure cross-connections are not made with potable water systems and DHS approved backflow prevention devices are installed and operable.

The Discharger shall be responsible for ensuring that recycled water meets the quality standards of this Order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the recycled water users responsible for the application and use of recycled water on their designated areas and associated operations and maintenance in accordance with all applicable CCR Title 22 requirements and this Order.

The Discharger shall notify the Regional Water Board Executive Officer in anticipation of reclaiming water at a new location, prior to commencement of reclamation activities at the new location. The notice shall include the following: site location, acreage involved, County Assessor Parcel number(s), name of property owner and/or user, and a User Reclamation Plan. The User Reclamation Plan shall estimate the anticipated volume of recycled water to be used; describe the recycled water management facilities and operations plan, identify who is responsible for site management, reflect consultation with state and local health departments, and explain in detail how compliance with the User Reclamation Plan, CCR Title 22 Criteria, and the requirements of the Master Reclamation Permit will be achieved.

If, in the opinion of the Regional Water Board Executive Officer, recycled water use at proposed new locations cannot be adequately regulated under the Master Reclamation Permit, a Report of Waste Discharge may be requested and individual Water Reclamation Requirements may be adopted.

Prior to the initial operation of any dual-plumbed recycled water system, and annually thereafter, the Discharger shall ensure that the dual-plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the Engineering Report. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year shall be submitted to DHS and the Regional Water Board by February 1 of each year. [CCR Title 22, Section 60316]

The Discharger shall notify DHS and the Regional Water Board of any incidents of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of the discovery of the incident.

Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, CCR.

Any discharge of untreated or partially treated wastewater to the use area, and the cessation of the same, shall be reported immediately with an oral report [1] by telephone to the Regional Water Board Executive Officer, DHS, and the local health officer.

[1] Oral reporting means obtaining direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the State Office of Emergency Services or the Regional Water Board spill officer.