CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2013-0001

WATER RECYCLING REQUIREMENTS for:

RUSSELL CITY ENERGY COMPANY, LLC
RUSSELL CITY ENERGY CENTER RECYCLED WATER FACILITY
HAYWARD, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. Discharger and Facility
   The Russell City Energy Company, LLC, owns and operates the Russell City Energy Center, an electrical generation power plant project located at 3862 Depot Road in Hayward, Alameda County. The Russell City Energy Center will produce disinfected tertiary recycled water at the Russell City Energy Center Recycled Water Facility (Recycled Water Facility) and use the water at the Russell City Energy Center.

   The Discharger is Russell City Energy Company, LLC, a project-specific limited liability corporation that is 75 percent owned indirectly by Calpine Corporation and 25 percent owned by Aircraft Services Corporation, which is an indirect subsidiary of General Electric Capital Corporation.

   The Facility, as referred to herein, consists of the Recycled Water Facility, the Russell City Energy Center, and all water distribution and use areas. The Facility property is 18.8 acres in total area and consists of four adjacent tax parcels, either owned or leased by the Discharger. The Discharger is responsible for the entire Facility property.

2. Reason for Action
   The Discharger has proposed to construct and operate the Recycled Water Facility to produce disinfected tertiary recycled water and to use this water for power plant cooling tower water and for drip irrigation of landscape plants. The recycled water production, distribution and use will be at the Facility under the Discharger's control. The production and use of recycled water is anticipated to begin in 2013.

   This production and use of recycled water is subject to regulation under water reclamation (recycling) requirements prescribed by the Water Board in accordance with Water Code section 13523.

3. History
   This is a new facility. The Water Board has not previously considered or permitted this facility.

4. Report of Waste Discharge
   Calpine Corporation, on behalf of the Discharger, filed a Report of Waste Discharge for this recycled water project on January 17, 2012, and additional information on July 20, 2012. The

complete Report of Waste Discharge includes:

a. The Discharger's letter to the Water Board dated January 12, 2012;
b. The Discharger's completed application form, State Form 200, signature-dated January 12, 2012;
c. The Discharger's engineering report dated November 11, 2011 (Engineering Report);
d. The California Energy Commission decision authorizing the Russell City Energy Center project dated October 2007, CEC-800-2007-003-CMF (01-AFC-7C); and
e. The California Department of Public Health's (CDPH) letter to the Water Board dated July 20, 2012, commenting on and approving the Engineering Report.

5. Facility and Discharge Location
The Facility is located at 3862 Depot Road, Hayward. All discharges subject to this Order occur at the Facility. The Facility property is located south of Depot Road and north and northwest of the adjacent Hayward Water Pollution Control Facility property. The area is zoned for industrial use. Adjacent land uses are industrial and commercial. A location map is Attachment 1 of this Order.

Regulation of Recycled Water

6. California Code of Regulations Title 22 Water Recycling Criteria, California Department of Public Health, and Water Board
Criteria for recycled water production and use have been established and codified as California Code of Regulations, title 22, sections 60301 et seq. (Title 22 Water Recycling Criteria). The current Title 22 Water Recycling Criteria were adopted on December 2, 2000, and became effective March 20, 2001. The Title 22 Water Recycling Criteria are implemented through engineering report review and approval by CDPH and through water recycling requirements by the Water Board.

This Order implements applicable Title 22 Water Recycling Criteria.

7. Water Recycling Requirements
The Water Board has the authority and responsibility to prescribe water recycling requirements for water that is used as recycled water, after consultation with and receipt of recommendations from CDPH, pursuant to Water Code section 13523. These water recycling requirements comply with Water Code section 13523 and the current Title 22 Water Recycling Criteria. The Water Board has consulted with CDPH and received written comments. This Order includes requirements that address and implement all CDPH comments and recommendations.

For purposes of this Order, "recycled water" as defined in Water Code section 13050 and "reclaimed water" as used in Water Code section 13523 are synonymous and refer to treated wastewater suitable for reuse. Similarly, the terms "recycling" and "reclamation" are used interchangeably to refer to production, distribution and use of recycled water.

8. Engineering Report
An engineering report is required to be prepared and submitted to CDPH for review, comment and approval for any proposed production or use of recycled water. (Cal. Code Regs., title 22, §60323.)

The Discharger submitted the Engineering Report to CDPH as required. CDPH found the report acceptable and provided written comments to the Water Board by letter dated July 20, 2012. The Engineering Report and CDPH comment letter are part of the complete Report of Waste Discharge for the project.

Recycled Water

9. Recycled Water Uses
The recycled water uses are industrial cooling in a cooling tower at the Russell City Energy Center power plant and irrigation of landscape plants by drip irrigation within the Facility property. These uses require recycled water that meets the quality standards for disinfected tertiary recycled water established in Title 22 Water Recycling Criteria sections 60301.230 and 60301.320 and associated criteria for use of disinfected tertiary recycled water established in Title 22 Water Recycling Criteria section 60310.

10. Recycled Water Quality - Disinfected Tertiary Recycled Water
The Discharger will produce and use disinfected tertiary recycled water as defined in Title 22 Water Recycling Criteria section 60301.230. The Recycled Water Facility source water is disinfected secondary treated effluent from the City of Hayward Water Pollution Control Facility. The Recycled Water Facility treatment process includes oxidation, clarification, filtration and disinfection. The treatment process complies with the criteria for disinfected tertiary recycled water given in Title 22 Water Recycling Criteria sections 60301.230 and 60301.320.

11. Recycled Water Quality - Design Water Quality Characteristics
The design quality of the recycled water is presented in Tables 1 and 2:

Table 1 - Recycled Water Quality - Title 22 Water Recycling Criteria Requirements

Parameter	Measure	Design Quality	
Turbidity	Average	2	NTU, average over a 24 hour period
Turbidity	Maximum	5	NTU, no more than 72 minutes in 24 hours
Turbidity	Maximum	10	NTU, at any time
Disinfection CT	Minimum	450	mg-min/L
Modal Contact Time	Minimum	90	minutes
Total Coliform	Median-7	2.2	MPN/100 ml, or less
Total Coliform	Maximum	23	MPN/100 ml, one sample in 30 days
Total Coliform	Maximum	240	MPN/100 ml, any sample

Table 2 - Recycled Water Quality - Conventional Water Quality Parameters

Parameter	Measure	Design Quality	
Dissolved Oxygen	Minimum	1.0	mg/L
Biochemical Oxygen Demand	Maximum	10	mg/L
Total Suspended Solids	Maximum	10	mg/L

Total Dissolved Solid	Maximum	700	mg/L
Total Nitrogen	Average	30	mg/L

Abbreviations for Tables 1 and 2:

NTU	Nephelometric Turbidity Units
CT	A parameter whose value is the mathematical product of total chlorine residual concentration in mg/L and modal contact time in minutes
mg-min/L	Milligram-minutes per Liter, the units for CT values
mg/L	Milligrams per Liter
MPN/100 ml	Most Probable Number per 100 milliliters
Median-7	Median value of test results from 7 consecutive most recent samples

12. Recycled Water Use Quantity
The planned recycled water use at the Facility is an average daily flow of 1.56 million gallons per day (mgd) and a total of 569.4 million gallons per year. Of this, the quantity planned for landscape irrigation is 1,090 gallons per day as an average daily flow, or 397,850 gallons per year, or 0.07 percent of projected total annual flow.

The Recycled Water Facility peak flow has a design peak production rate of 3,500 gallons per minute (equivalent to 5.04 mgd). The maximum daily water demand is approximately 2,413 gallons per minute (equivalent to 3.47 mgd). The Recycled Water Facility provides a capacity margin of about 45 percent relative to projected peak demand.

13. Recycled Water Use Areas
The recycled water use areas are the Russell City Energy Center power plant cooling water system and the Facility landscape irrigation system and areas irrigated with recycled water.

14. Recycled Water Producer, Distributor and User
The Discharger is the producer, distributor and user of recycled water for this project.

Recycled Water Treatment Process and Compliance with Applicable Criteria

15. Recycled Water Facility Treatment Process
The Recycled Water Facility treats undisinfected secondary-level treated wastewater from the Hayward Water Pollution Control Facility to produce disinfected tertiary recycled water. The Recycled Water Facility treatment process includes clarification by means of a Parkson Lamella Gravity Separator system, filtration by a Parkson-Dynasand Filtration system, and disinfection by chlorination and chlorine contact chambers.

a. Influent and Parallel Treatment Trains
Recycled Water Facility influent is undisinfected secondary-level treated wastewater from the Hayward Water Pollution Control Facility with an average turbidity of 17 NTU. This influent water is pumped by three pumps from a wet well to the Recycled Water Facility where the flow is divided into two parallel treatment trains for tertiary treatment. Each train includes one Parkson Lamella Gravity Separator followed by one Parkson-Dynasand Filtration and Disinfection system. The design flow capacity is 2.52 mgd for each train.

b. Clarification
The Lamella Gravity Separator treatment system provides required coagulation, flocculation, and clarification utilizing incline plates to settle solids. Sodium hypochlorite and ferric chloride (coagulants) are added and mixed by a variable speed mixer to form floc. The recycled water enters the clarifier and flows downward through the inlet chamber in the center of the unit and enters the plates through the side-entry plate slots. As the liquid flows upward, the solids settle on the inclined, parallel plates and slide into the sludge hopper at the bottom. The clarified effluent water leaves the plate assembly through the weirs at the top. Effluent turbidity is expected to be less than 5 NTU prior to filtration treatment.

c. Filtration
The effluent from the clarifier flows into the Parkson-Dynasand Filtration system for its respective treatment train. The proprietary Parkson-Dynasand Filtration system utilizes a continuous backwash process. Each filtration module at this facility has four filter cells. The influent enters each module and is distributed among the four filter cells with the flow entering each filter cell from the bottom and flowing upward through the sand bed and exiting at the top of the cell. The sand in these filter cells is continuously turned over as sand from the bottom of the bed is washed with compressed air and re-deposited back on top of the bed.

The Parkson-Dynasand Filtration system is an acceptable filtration treatment technology for meeting the filtration performance criteria required for tertiary treated recycled water in accordance with CDPH's *Treatment Technology Report for Recycled Water*, dated December 2009. The design filtration rate is 4.225 gallons per minute per square foot. The filters are designed to produce filtered water turbidities of less than 2 NTU. The design filtration rate and the expected finished water turbidities comply with the criteria for filtered wastewater given in Title 22 Water Recycling Criteria section 60301.320.

d. Disinfection
Disinfection is provided by chlorination and contact time. Following filtration, effluent from the two filtration trains is combined and this filtered water then flows to the disinfectant mixing units. The filtered water is mixed with sodium hypochlorite disinfectant in two mixers installed in series upstream of the contact basins. After mixing, the flow is again divided and then distributed to one of two chlorine contact basins.

The two chlorine contact basins are essentially identical but independent units, constructed side by side, but hydraulically separate and operated in parallel. Each basin has a serpentine flow path with extensive baffling in order to approach plug flow conditions. Each basin provides 90 minutes modal chlorine contact time and minimum design CT value of 450 mg-min/L. The disinfection process complies with the criteria for disinfection of tertiary recycled water given in Title 22 Water Recycling Criteria section 60301.230. Upstream of the chlorine contact basins, two mixers installed in series mix the disinfectant, sodium hypochlorite, with filtered water.

16. Cooling Tower Design Requirements
The cooling tower will have high efficiency drift eliminators designed to limit drift to 0.0005

percent of the circulations' water flow. Chlorine dioxide will be the primary biocide to minimize the growth of Legionella and other microorganisms in the cooling system recirculation water. This complies with the criteria for cooling tower design given in Title 22 Water Recycling Criteria section 60306(c).

17. Sampling and Analysis Requirements for Turbidity, CT and Total Coliform
An on-line turbidimeter and analyzer will continuously measure and record the filtered effluent of each train. A continuous sampler will take samples of the recycled water after disinfection to monitor and record CT continuously. Total Coliform will be monitored via daily grab samples. This complies with the criteria for Sampling and Analysis for disinfected tertiary recycled water given in Title 22 Water Recycling Criteria section 60321.

18. Operators and Employee Training
The Recycled Water Facility will be operated and maintained by State-certified Wastewater Treatment Operators (Operators) of appropriate grade as described here. The Recycled Water Facility is a privately owned and operated facility. The Operator certification program is not yet required for privately owned facilities, pending adoption of regulations by the State Water Resources Control Board (State Water Board). The Discharger intends complete participation in and compliance with the Operator certification program when the regulations are adopted and the program is available to this facility. Meanwhile, the Discharger will use certified Operators in accordance with the following plans:

Operation and maintenance will be under the direction of the current Grade III Chief Plant Operator. The Grade III Chief Plant Operator is expected to obtain Grade IV certification in 2013.

Currently the Recycled Water Facility has two Grade II Operators who will be taking their Grade III examinations in 2013. The remaining five Recycled Water Facility operators and any new hires going forward will be enrolled in the State's Operator in Training Program with the goal of having all Recycled Water Facility operators qualified at the Grade III level.

The Grade III Chief Plant Operator and two other site employees have completed the State-required Recycled Water Site Supervisor Training to meet the certification requirements established by the American Water Works Association (AWWA) *Guidelines for On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water* and the AWWA *Guidelines for Distribution of Non-potable Water.* To date, Recycled Water Users training has been administered to all Russell City Energy Center site operators by the Grade III Chief Plant Operator.

The Grade III Chief Plant Operator currently possesses the necessary State documentation to allow him to inspect and certify backflow devices in potable and recycled water systems. In the future, the Grade III Chief Plant Operator will be enrolling in the State's Cross Connection Inspection Specialist course recommended by AWWA.

This arrangement complies with the criteria for personnel given in Title 22 Water Recycling Criteria section 60325.

19. Use Area Buffer Zone Requirements for Domestic Wells
There are no known domestic water supply wells within 1000 feet of the Facility site. An existing well south of the Facility's north fence line was abandoned and filled in accordance with a Well Abandonment Permit from the Alameda County Environmental Health Department. This complies with the criteria for a minimum setback distance of fifty feet between domestic wells and recycled water use areas given in Title 22 Water Recycling Criteria section 60310(a).

20. Supplemental Water Supply, Potable Water Supply and Cross-Connection Control
In the event that secondary effluent is not available from the Hayward Water Pollution Control Facility, or if the quality of that effluent cannot be treated to Title 22 Water Recycling Criteria disinfected tertiary recycled water quality standards, or if there is insufficient recycled water to meet demand, the City of Hayward's water supply system can supply potable water to supplement or replace the recycled water. The potable water will be fed to the cooling tower basin through a potable water supply line that is separate from the recycled water supply line and is protected by an air-gap separation. This complies with potable water protection requirements. (See Cal. Code Regs., title 17, §7603(a).)

A separate potable water distribution system will supply drinking water from the City of Hayward's water system for other potable uses at the Facility. A reduced-pressure backflow prevention device is provided on the City of Hayward's water supply line that enters the Facility on Depot Road to protect the City of Hayward's water supply from potential cross-connections and backflow from the Facility. There are no cross-connections between the potable water system and the recycled water system within the Facility.

21. Water Main Separation and Recycled Water Pipeline Construction Requirements
All water mains that supply the Facility comply with the following separation criteria: 10 feet horizontal and 1 foot vertical separations between water mains and sanitary sewer pipelines, and 4 feet horizontal and 1 foot vertical separations between water mains and disinfected tertiary recycled water pipelines. This satisfies the requirements for separation of water mains and non-potable pipelines given in California Code of Regulations Title 22 section 64572. (Cal. Code Regs., title 22, §64572.)

All recycled water mains will be constructed with CDPH-approved materials and will be either (a) colored purple or wrapped with purple tape, and labeled as Recycled Water - Do Not Drink, or (b) constructed in accordance with an established labeling or marking system for recycled water that clearly distinguishes recycled water from potable water to comply with Health and Safety Code section 116815. (Health & Saf. Code §116815.)

Specifically in compliance with the foregoing, all underground recycled water mains shall implement a marking system that is a combination of the following: (a) markers that identify the location of all underground recycled water pipe will be placed above the recycled water pipe to indicate changes in pipe direction and at intervals along straight runs of pipe and will be durable, in-ground, flush mounted markers; and (b) as-built piping composite drawings will be available at all times at the Facility that clearly provide pipe identification, plant coordinate location, and elevation of all recycled water pipe.

22. Reliability Features
The Recycled Water Facility has the following reliability features: emergency storage of 750,000 gallons, which can provide 5 to 15 hours of storage capacity; multiple treatment units; and standby units for treatment, chemical feed, and alarms. The Recycled Water Facility is designed to provide two-times-50 percent redundancy for each unit process such that the Facility can operate with one unit for each process. These reliability features comply with the criteria for full treatment reliability given in Title 22 Water Recycling Criteria sections 60341 through 60355.

The Recycled Water Facility will be operated as part of the overall Russell City Energy Center complex, providing operational supervision 24 hours a day, all days. Should an alarm from the Recycled Water Facility be activated, operators on duty will respond to the alarm. This complies with the criteria for personnel given in Title 22 Water Recycling Criteria section 60325.

Cross-connection control procedures include installation of devices at use areas and cross-connection test procedures for startup of use areas. These comply with the requirements for a cross-connection program to protect public water systems against cross-connection hazards. (Cal. Code Regs., title 17, §§7583 - 7605.)

23. California Department of Public Health Recommendations
The Discharger's Engineering Report and followup supporting documentation submitted to CDPH by the Discharger adequately addresses all CDPH requirements for the proposed production and use of recycled water. CDPH recommended, in its letter of July 20, 2012, that the Water Board:

a. Approve the use of the Recycled Water Facility's recycled water for the Russell City Energy Center's cooling tower and for minor landscape irrigation at the Facility, and
b. Issue a water recycling requirements permit to the Discharger to operate the Recycled Water Facility.

California Environmental Quality Act

24. California Environmental Quality Act
The California Energy Commission (CEC) is the lead agency under the California Environmental Quality Act (CEQA) for the Russell City Energy Center project. The CEC's power plant certification process is a certified regulatory program under CEQA (Cal. Code Regs., title 14, §§ 15250, 15251(k); see also California Energy Commission, Final Commission Decision, Russell City Energy Center, Amendment No. 1 (01-AFC-7C), October 2007, p. 3). The written documents of the CEC's siting process are collectively the functional equivalent of a CEQA environmental impact report ("EIR") and must comply with the substantive provisions of CEQA and the CEQA Guidelines. (Pub. Res. Code §21080.5.)

The CEC examines whether the proposed project will comply with all laws, ordinances, regulations, and standards, and whether the proposed project will cause any significant, immitigable, adverse environmental impacts. (Pub. Res. Code §§25519, 25523; Cal. Code Regs., title 14, §§15250, 15252.) The CEC may not approve a project that does not comply

with applicable laws, ordinances, regulations, and standards, or that has a significant, immitigable, adverse environmental impact, unless the CEC also determines that the proposed project has overriding benefits. (Pub. Res. Code §§21081, 25525.)

Any other public agency that must make a decision that is subject to CEQA for a site or related facility certified by the CEC must use the document prepared by the CEC in the same manner as it would use an EIR prepared by a lead agency. (Pub. Res. Code §25519(c).) The Water Board, acting as a CEQA Responsible Agency pursuant to California Code of Regulations, title 14, section 15096, subdivision (g)(2), evaluated the potential impacts to water quality addressed in the environmental documents and finds the recycled water project will not have a significant adverse impact on the water quality of surface waters or groundwaters.

Water Board Plans and Policies

25. Basin Plan
The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation plans to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. This Order implements the Basin Plan.

26. Receiving Waters
The majority of the recycled water used in this project is for power plant cooling water. After use, the water either evaporates to the atmosphere or is condensed for capture and reuse. A small amount of the recycled water is used for drip irrigation of onsite landscape plants. After discharge to land, this water may evaporate to the atmosphere, transpire through plants to the atmosphere, remain captured in plants or soil, or percolate through the soil to groundwater. The irrigation discharges are intended to match the irrigation demand of the vegetation and thus minimize discharges to groundwater.

The receiving water is the groundwater beneath the Facility. The groundwater basin in this area is identified in the Basin Plan as the Santa Clara Valley groundwater basin, East Bay Plain sub-basin, basin ID number 2-9.04.

27. Beneficial Uses
The beneficial uses of the groundwater of the Santa Clara Valley basin, East Bay Plain sub-basin as set forth and defined in the Basin Plan are:

a. Municipal and domestic water supply;
b. Industrial process water supply;
c. Industrial service water supply; and
d. Agricultural water supply.

28. Notification of Interested Parties
The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe water recycling requirements for the recycled water project and has provided them with an opportunity for a public hearing and an opportunity to submit written comments and

recommendations.

29. Hearing and Consideration of Comments
The Water Board, in a properly noticed public meeting, heard and considered all comments pertaining to the recycled water project.

30. State Water Board Recycled Water Policy
State Water Board Resolution No. 2009-0011, "Adoption of a Policy for Water Quality Control for Recycled Water," references and adopts the "State Water Resources Control Board Recycled Water Policy" (Recycled Water Policy). The Recycled Water Policy provides direction to the State and Regional Water Boards regarding the appropriate criteria to be used in issuing permits for some recycled water projects. The Recycled Water Policy describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects.

This Order implements the Recycled Water Policy through CDPH review of the Discharger's Engineering Report and written comments and recommendation to the Water Board consistent with section 5.b. of the Recycled Water Policy, and through Water Board issuance of water recycling requirements consistent with section 5.c. of the Recycled Water Policy.

IT IS HEREBY ORDERED pursuant to Water Code sections 13523, 13263 and 13267 that the Discharger shall comply with the following:

A. Prohibitions

1. The production, distribution or use of recycled water other than as described in the Report of Waste Discharge for this project or described in this Order is prohibited.

2. The discharge of inadequately treated water from the Facility to waters of the State is prohibited.

3. The production, storage, distribution, or use of recycled water shall not create a nuisance or pollution as defined in Water Code section 13050.

4. The use of recycled water as a domestic water supply is prohibited.

B. Recycled Water Quality Specifications

1. The Discharger shall assure that the recycled water distributed for use is adequately oxidized, disinfected tertiary treated water that meets the following quality limits:

   a. The final treated recycled water must not exceed the following limits:

	Constituent	Unit	Daily Maximum
1)	BOD_5	mg/L	10.0
2)	TSS	mg/L	10.0
3)	Total Nitrogen	mg/L as N	30.0

b. Turbidity
The recycled water turbidity must not exceed:

1) An average of 2.0 NTU within any 24 hour period,
2) 5.0 NTU more than 5 percent of the time within a 24-hour period, and
3) 10.0 NTU at any time.

c. Disinfection
The chlorine disinfection process following filtration must provide a CT value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes based on peak dry weather flow design flow. The CT value is the mathematical product of total chlorine residual concentration in mg/L and modal contact time in minutes.

d. Total Coliform Bacteria
The recycled water shall meet the following limits of bacteriological quality, using the results of daily sampling and analyses for total coliform:

The numeration of total coliform bacteria in terms of Most Probable Number per 100 milliliters (MPN/100 ml) shall not exceed:

1) 2.2 MPN/100 ml in the median value using the results of the last seven days for which analyses have been completed,
2) 23 MPN/100 ml in more than one sample in any 30 day period, and
3) 240 MPN/100 ml in any one sample.

2. The Discharger shall discontinue the distribution and use of recycled water during any period when there is reason to believe that compliance with the limits specified in B.1. above is not achieved. The distribution and use of recycled water shall not resume until all conditions that caused the noncompliance or suspected noncompliance have been appropriately investigated and corrected.

3. The Discharger shall provide documentation, acceptable to the Executive Officer, that the Recycled Water Facility is operated and maintained by qualified and adequately trained personnel as described in the Report of Waste Discharge.

C. Recycled Water Use Specifications

1. The Discharger shall operate and manage the recycled water irrigation practices to minimize loss of recycled water from the designated uses or use areas. Recycled water shall not escape from the use areas by airborne spray, surface, or subsurface flow, except in minor amounts associated with sound irrigation practices.

2. Spray, mist or runoff of recycled water will not enter dwellings or impact designated outdoor eating areas, drinking fountains or food handling facilities.

3. The Discharger shall adequately post signs informing the public, workers or other persons present at the Facility about the presence and use of recycled water. Signs will be posted in

areas where recycled water is accessible to such persons and at points of access to the Facility. The signs will be at least four inches high by eight inches wide and include the following wording at a minimum: "RECYCLED WATER – DO NOT DRINK". Each sign shall also display an international "Do Not Drink" symbol.

4. The landscape irrigation shall be managed to prevent surface ponding of water or other conditions that would facilitate propagation or breeding of mosquitoes or other vectors of health significance.

D. Provisions

1. The Discharger shall comply with all sections of this Order as of the effective date of the Order.

2. The Discharger shall maintain a copy of this Order at the Facility so that it will be available at all times to personnel operating and maintaining treatment and use facilities.

3. The Discharger shall maintain in good working order and operate as efficiently as possible any treatment, disposal, and monitoring facility or control system installed to achieve compliance with these requirements.

4. The Discharger shall comply with the attached monitoring and reporting program, as adopted by the Water Board and as may be amended by the Executive Officer, pursuant to Water Code section 13267.

5. The Discharger shall provide adequate supervision and training of employees to assure proper operation and maintenance of the Recycled Water Facility and distribution and use systems. A complete record of training and related licenses or certifications of qualifications shall be maintained by the Discharger.

6. <u>Notification of Proposed Changes</u>
   The Discharger shall notify the Water Board and CDPH of any proposed material changes in the recycled water production, distribution or use.
   a. The Discharger shall submit to CDPH, at least 90 days prior to the anticipated material changes, a supplemental Engineering Report for CDPH technical review, comment and approval.
   b. The Discharger shall submit a copy of the supplemental Engineering Report and related CDPH correspondence to the Water Board.

7. <u>Operation and Maintenance Manual</u>
   The Discharger shall develop and maintain an Operation and Maintenance (O&M) Manual for the entire recycled water treatment, distribution and use equipment and facilities.
   a. The Discharger shall assure that the O&M Manual is available to and followed appropriately by all personnel responsible for operation or maintenance of the recycled water production, distribution and use facilities.
   b. The Discharger shall submit to the Water Board documentation of O&M Manual

completion as follows:

1) No later than 30 days after initial startup of the Recycled Water Facility, and
2) No later than 60 days after any subsequent material changes to the recycled water production, distribution or use facilities.

8. Adverse Condition Reporting
The Discharger shall notify the Water Board immediately whenever an adverse condition occurs in the production, distribution or use of the recycled water. An adverse condition includes but is not limited to a release of recycled water other than as allowed by the Order or other non-compliance event. The initial notification shall be completed within 24 hours of discovery by telephone, email, fax transmittal, or in person.

A followup report shall be submitted, in print or electronically, within two weeks after the initial notice or as directed otherwise by Water Board staff in writing. The report must include, but shall not be limited to, the following information:

a. The reasons for the non-compliance,
b. Actions taken to correct the problem and the dates thereof, and
c. Actions that have been or will be taken to prevent the problem from recurring.

9. Title 22 Water Recycling Criteria Compliance
The Discharger shall construct, operate and maintain the Recycled Water Facility in compliance with the Title 22 Water Recycling Criteria.

10. Recycled Water Facility Monitoring
The Recycled Water Facility shall include the following monitoring and reporting:

a. The filter-train effluent turbidity shall be monitored and recorded continuously by an on-line turbidimeter and analyzer;
b. The disinfection CT shall be monitored and recorded continuously; and
c. The disinfected combined filtered effluent bacteriological quality shall be monitored and recorded by daily sample and analysis for total coliform bacteria.

11. Cross Connection Control Testing Requirements
a. Prior to the initial operation of the recycled water system and annually thereafter, the Facility shall be surveyed for potential cross-connections or other cross-hazards to the potable water supply system that have not been identified and abated by cross-connection control devices.
b. All cross-connection control devices shall be tested on an annual basis by a certified Backflow Assembly Tester.

12. The Discharger shall permit the Water Board or its authorized representative in accordance with Water Code section 13267(c):

a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
b. Access to and copy of, at reasonable times, any records required to be kept under the terms and conditions of this Order;

c. Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; or
d. To photograph, sample or monitor, at reasonable times, for the purpose of assuring compliance with this Order.

13. The Discharger shall notify the Water Board, in writing, of any change in contact information or change in control or ownership of the land or water recycling facilities presently owned or controlled by the Discharger. The Discharger shall include in the notice the name and contact information of the new owner or new responsible party, and the effective date of the changes.

14. The Water Board will review this Order periodically and may revise the requirements as necessary to comply with changing State or federal laws, regulations, policies, or guidelines; changes in the Water Board's Basin Plan; or changes in the discharge characteristics.

15. After notice and opportunity for a hearing, this Order may be terminated or modified for cause including, but not limited to:

    a. Violation of any term or condition contained in this Order;
    b. Obtaining this Order by misrepresentation, or failure to disclose fully all-relevant facts;
    c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse; or
    d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modifications or termination.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 9, 2013.

Digitally signed by Bruce H. Wolfe
Date: 2013.01.17 10:12:46 -08'00'

Bruce H. Wolfe
Executive Officer

Attachments:

1. Figure 1, Location Map
2. Figure 2, Flow Diagram
3. Self-Monitoring Program

CIWQS Place No. 785242