

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 96-011

GENERAL WATER REUSE REQUIREMENTS FOR:

MUNICIPAL WASTEWATER AND WATER AGENCIES

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

PURPOSE and APPLICABILITY

1. Order serves as a *General Water Reuse Order* authorizing municipal wastewater reuse by producers, distributors and users of non-potable recycled wastewater throughout the region. The intent of this Order is to streamline the permitting process and delegate the responsibility of administering water reuse programs to local agencies to the fullest extent possible.
2. This Order is intended to serve as a region-wide general permit for publicly owned wastewater and water agencies that recycle treated municipal wastewater. It is intended to replace individual reuse Orders and applies to the following suppliers of recycled water:
 - a. Producers of secondary and tertiary recycled water that meets CCR Title 22 water reuse criteria and is reused for a direct beneficial use or a controlled use that would not otherwise occur.
 - b. A Distributor of recycled water - who receives wastewater from a municipal wastewater facility, may or may not give it additional treatment to meet CCR Title 22 water reuse criteria for its intended use(s) and distributes it to users. In some cases, a written agreement (e.g., Joint Powers Agreement or equivalent contractual agreement) between a Producer and a Distributor may be preferable to issuing this Order to the Distributor.
 - c. Although the statewide criteria specified in Title 22 apply only to use of recycled water and not to the *disposal* of wastewater to land (e.g., to meet NDES restrictions for receiving water discharge) those discharges to land may pose an identical degree of public exposure and risk.

Therefore, wastewater agencies that apply wastewater to land through irrigation for the primary purpose of disposal, but operate in accordance with these requirements, may also apply to be regulated under this Order.
 - d. It should be noted that a project that is very complex in nature (long-term, multi-phased projects, e.g., Zone 7/Livermore water reuse program) may best be served by an individual order.
3. A separate NPDES permit must be obtained from the Regional Board for projects involving the use of ephemeral or year-round streams or other waters of the State for recycled water conveyance or direct or indirect groundwater recharge.
4. Water reuse is an essential part of an overall program to manage local and regional water resources. Many local governing bodies have adopted resolutions establishing their intent to proceed with the planning, permitting, and implementation of water reuse projects. These projects would provide important multiple water quality, water supply, and wastewater disposal benefits for communities including:
 - augmentation and improved reliability of local water supplies.
 - reduction of the mass of pollutants discharged to State waters
 - reduction in size or deferral of the need for additional wastewater export facilities.

REUSE FACILITIES AND THEIR RESPONSIBILITIES

5. Most of the publicly owned wastewater treatment plants (POTWs) in the Region, hereinafter referred to as the Producers, produce treated wastewater of sufficient quality to allow its reuse for certain applications as prescribed in this Order. Water service agencies also have authority under the provisions set forth in this Order to distribute recycled water within their respective jurisdictions.
6. POTWs provide at least secondary treatment to Distributors or Users under written agreements with the participating Producers/Distributors respectively. The recycled water meets the quality criteria established by California Department of Health Services (DHS) and this Order. Additional treatment by the Producer, Distributor or User may be necessary to meet the intended use. The Producer or Distributor is responsible for insuring that water reuse is adequately monitored through an approved program.
7. Decisions regarding new treatment and distribution facility construction, operation, funding, cost-sharing and related aspects are the responsibility of the Producer, Distributor and affected Users.

STATE RECLAMATION POLICIES AND REGULATIONS

8. In July 1992 Section 13523.1 was added to the California Water Code, authorizing regional boards to issue master reclamation permits to a producer and/or distributor of recycled water in lieu of prescribing individual water reuse requirements for a user of recycled water. Section 13523.1 also removes the requirement, except upon written request of a regional board, that Users file a report with a regional board to use recycled water from a producer/distributor for whom a master reuse Order has been issued. Similarly, it exempts any such user of recycled water from the requirement to file a report with a regional board related to any material change in the character of the recycled water or its use.

For further discussion of State Policies and Regulations see Attachment G.

State Health Regulations

9. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and upon receipt of recommendations from DHS, and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reuse requirements for water which is used or proposed to be used as recycled water.
10. This Order's requirements conform with and implement the Department of Health Services's water reuse criteria as set forth in Title 22, Division 4, Sections 60301 through 60355 of the California Code of Regulations (herein referred to as the DHS reuse criteria). Revisions to Title 22 shall become part of this Order automatically upon final adoption of those revisions by DHS.

REGIONAL BOARD BASIN PLAN

11. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986 prescribing water quality objectives for ground and surface waters throughout the region. The Board amended its Basin Plan on June 21, 1995, and the State Water Resources Control Board (State Board) approved it on July 20, 1995, with approval from the State Office of Administrative Law on November 13, 1995. The Basin Plan supports water reclamation and further states that the disposal of wastewater to inland, estuarine, or coastal waters is not considered a permanent wastewater disposal solution

where the potential exists for conservation and reclamation. The water quality goals to be used in regulating water quality factors as set forth in the Basin Plan include maximum feasible reuse of municipal, industrial, and agricultural wastewaters.

Beneficial Uses

The Basin Plan identifies existing and potential beneficial uses of the region's underlying groundwaters as:

- Industrial service and Process supply
- Municipal and domestic supply
- Agricultural supply

The Basin Plan identifies beneficial uses of all surface waters of San Francisco Bay Region, including San Francisco Bay system and its tributaries, Tomales Bay and its tributaries, coastal waters and tributaries and all inland waters. The Basin Plan identifies beneficial uses of specified surface waters as:

- Municipal and Domestic Water Supply
- Water Contact Recreation
- Non-Contact Water Recreation
- Warm Fresh Water Habitat
- Cold Fresh Water Habitat
- Wildlife Habitat
- Fish Migration
- Fish Spawning

REGIONAL BOARD'S LIMITED RECYCLING ORDER

12. Board Order No. 91-042 provides "blanket" authorization for tanker-truck distribution of recycled water and the expansion of existing fixed irrigation system projects already subject to water reuse requirements. Order 91-042 will be superseded by this Order for those agencies being regulated by this Order.

CEQA AND PUBLIC NOTICE

13. The proposed uses of reclaimed water will maintain and enhance natural resources, and thus this Order is categorically exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Administrative Code, Chapter 3, Section 15307.
14. The Board has notified the Producers, Distributors and interested agencies and persons of its intent to prescribe water reuse requirements and has provided them the opportunity for a public hearing and to submit their written views and recommendations.
15. The Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED, that all agencies that file a **Notice of Intent (NOI)** indicating their intention to be regulated under the provisions of this general order and receive program authorization from this Board shall comply with the following:

A. PROHIBITIONS

1. The treatment, storage, distribution, or reuse of recycled water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. No recycled water shall be applied to irrigation areas during periods when soils are saturated.
3. Recycled water shall not be allowed to escape from the designated use area(s) as surface flow that would either pond and/or enter waters of the state. Recycled secondary treated water as described under Section B shall not be allowed to escape from the designated use area(s) as an airborne spray that would visibly wet vegetation or any other surface.
4. Spray or runoff shall not enter a dwelling or food handling facility, and shall not contact any drinking water fountain, unless specifically protected with a shielding device. If the recycled water is of restricted quality as described under Section B, then spray or runoff shall not enter any place where the public may be present during irrigation.
5. Secondary recycled water shall not be applied so as to cause runoff or degradation of any water body or wetland.
6. Recycled water shall not be applied in groundwater recharge and wellhead protection areas (so designated by local agencies).
7. The use of recycled water shall not cause rising groundwater discharging to surface waters to impair surface water quality objectives or beneficial uses.
8. The incidental discharge of recycled water to waters of the State shall not unreasonably affect present and anticipated beneficial uses of water, and not result in water quality less than that prescribed in water quality control plans or policies.
9. No recycled water shall be discharged from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted reuse in accordance with this Order, other Board issued Waste Discharge Requirements or NPDES permits, contingency plan in an approved Water Reuse Program (NOI report), or for discharge to a municipal sewage treatment system.
10. Recycled water shall not be used as a domestic or animal water supply.
11. There shall be no cross-connection between potable water supply and piping containing recycled water. All users of recycled water shall provide for appropriate backflow protection for potable water supplies as specified in Title 17, Section 7604 of the California Code of Regulations or as specified by DHS.

B. REUSE WATER QUALITY REQUIREMENTS AND LIMITATIONS:

1. Reuse Water Quality Requirements and Limitations of this Order shall meet the most current CCR Title 22 regulations.
2. The Producer/Distributor shall discontinue delivery of recycled water for intended reuse projects

during any period in which it has reason to believe that the limits for that use as specified below or the requirements of the DHS reuse criteria insofar as they relate to the quality of the recycled water, are not being met. The delivery of recycled water intended uses shall not be resumed until all conditions which caused the violations have been corrected.

3. Minimum Recycled Water Quality

Water to be recycled for reuse shall at a minimum be adequately oxidized and disinfected water that receives at least secondary level treatment and meets, at a minimum, the following limits:

- a. Dissolved Oxygen 1.0 mg/l minimum
- b. Dissolved Sulfide 0.1 mg/l maximum
- c. Total Coliform

All water recycled for reuse authorized under this permit must meet the total coliform limits specified below (at either the Producer's wastewater treatment plant or, if necessary, after additional treatment at a Distributor's plant).

4. Secondary - 23 Recycled Water (Restricted Use)

Secondary-23 recycled water shall meet the following total coliform limit prior to delivery for reuse purposes:

a. Total coliform

After adequate contact with disinfectant the number of total coliform organisms shall not exceed: (a) a median value of 23 MPN/100ml as determined from the bacteriological results of the last seven days for which sample analyses have been completed, and (b) a maximum value of 240 MPN/100ml in more than one sample in any 30 day period.

b. Reuse Applications:

Secondary recycled water may be used where the public has restricted access or exposure. See Attachment A for a list of reuse applications.

5. Secondary-2.2 Recycled Water

Secondary-2.2 recycled water shall meet the following total coliform limit prior to delivery for reuse purposes:

a. Total coliform

After adequate contact with disinfectant the number of total coliform organisms shall not exceed (a) a median value of 2.2 MPN/100ml as determined from the bacteriological results of the last seven days for which sample analyses have been completed, and (b) a maximum value of 23 MPN/100ml in more than one sample in any 30 day period.

b. Reuse Applications:

See Attachment A for reuse applications.

6. Tertiary Recycled Water

Tertiary recycled water shall be coagulated (except as identified in Part C below), and filtered, and meet the following total coliform, disinfection process and turbidity limits prior to delivery for reuse purposes:

a. Total coliform

After adequate contact with disinfectant the number of total coliform organisms shall not exceed: (1) a median value of 2.2 MPN/100ml as determined from the bacteriological results of the last seven days for which sample analyses have been completed, and (2) a maximum value of 23MPN/100ml in more than one sample in any 30 day period. No sample shall exceed a total coliform value of 240 MPN/100 ml.

b. Disinfection Process

1) A chlorine disinfection process that provides a CT (chlorine concentration times modal contact time) value of not less than 300 milligram-minutes per liter at all times with a *modal contact time* of at least 90 minutes, based on peak daily design flow (or an equivalent combination of chlorine concentration and contact time subject to Executive Officer approval); or

2) A disinfection process that, when combined with the filtration process, has been demonstrated to reduce the concentration of plaque-forming units of F-specific bacteriophage MS-2, or polio virus, per unit volume of water in the wastewater to one hundred thousandths (1/100,000) of the initial concentration in the filter influent throughout the range of qualities of wastewater that will occur during the recycled water treatment process. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration. The above demonstration must be approved by the DHS and the Executive Officer.

c. Turbidity

The turbidity of filtered recycled water shall not exceed any of the following:

1) 2 NTU daily average, 5 NTU more than 5 percent of the time, or 10 NTU at any time.

Coagulation need not be used as part of the treatment process provided the turbidity of the influent to the filters does not exceed 5 NTU more than 5 percent of the time.

d. Reuse Applications:

See Attachment A for reuse applications.

7. Recycled Water Storage Limitations

- a. Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor or nuisance conditions. Should such problems develop, a management plan shall be devised and implemented to monitor, correct, and control future occurrences.
- b. All wastewater storage ponds shall be adequately protected from erosion, washout and flooding from a 24-hour rainfall event having a predicted frequency of once in 100 years.

C. REUSE PROGRAM PROVISIONS

Producer Responsibilities

1. Producers wishing to be covered under this General Water Reuse Order shall submit a **Notice of Intent (NOI)** in accordance with Attachment B. Producers who are currently covered by an individual order, and do not submit an NOI, will continue to be covered by their individual orders and Order 91-042.

Producer responsibilities in this section may be required of or undertaken by the Distributor as appropriate. In such cases the Distributor shall submit the NOI or the Producer shall show evidence of an agreement with the Distributor to undertake the responsibilities. In any cases respective responsibilities shall be spelled out in the joint agreement.

2. This Order becomes effective upon written approval of the **NOI** report by the Executive Officer and supersedes any current Water Reuse Requirements. The Regional Board will coordinate with DHS to obtain their concurrence of NOI reports prior to approval by the Executive Officer.
3. Under this Order a Producer may authorize specific reuse projects on a case-by-case basis in accordance with a Producer designed permit-based program for Users of recycled water. The Producer shall develop administrative procedures specifying how the permit based system for regulating users will be implemented and how compliance with the DHS reuse criteria will be assured. Upon Board approval of the Producer's program, **which shall accompany the NOI**, the Producer may authorize specific reuse projects on a case-by-case basis once the administrative elements of the water reuse program are in place.
4. The Producer shall establish and enforce rules and regulations for recycled water uses governing the design and construction of reclaimed water use facilities and the use of recycled water in accordance with DHS reuse criteria.
5. The Producer or Distributor (as appropriate) shall submit to DHS for review and approval documentation of the proper installation of Title 22 mandated backflow prevention devices and the absence of cross connections prior to commencing use of recycled water at sites meeting any of the following criteria:
 - a. Where the proposed use is a new use that is not covered in the DHS reuse criteria.
 - b. Dual plumbed systems (per Title 22 definition - within building plumbing and residential irrigation).

- c. Large, high volume usage, or otherwise complex sites as defined in the Producer's Water Reuse Program (pursuant to Provision C.3.).
- 6. The Producer will be responsible for ensuring that recycled water meets the quality standards of this Order and for the operation and maintenance of major transport facilities and associated appurtenances. The Producer shall hold the Users responsible for the application and use of recycled water on their designated use areas and associated operations and maintenance in accordance with all applicable DHS reuse criteria requirements.
- 7. The Producer shall conduct periodic inspections of the User's facilities and operations to monitor and assure compliance with conditions of the Producer's permit and this Order. The Producer shall take whatever actions are necessary, including the termination of delivery of recycled water to the User, to correct any User violations.
- 8. The Producer shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements, or any amendments thereafter.
- 9. When additional site specific requirements and/or Provisions are applied to a reuse project as a condition of adoption of this Order, they shall be identified in the NOI and appended to this Order as Attachment E.

Joint Responsibilities

- 10. Each User shall demonstrate to the Producer the means by which all applicable use area requirements, as specified in DHS reuse criteria, will be complied with.
- 11. If someone other than the User (User's Agent) is responsible for applying the recycled water, e.g. a truck hauler, then the User shall inform them of these requirements in a written permit or other suitable manner. A User's Agent shall fill out a Recycled Water Release Form or equivalent tracking documentation when receiving recycled water from the Producer.
- 12. A copy of the Water Use Permit must be provided to the Users by the Producer. The Users must have these available at all times for inspection by Regional Board staff, the Producer, or State/County Health Officers.
- 13. The Producer shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer. The Producer is responsible for collecting reports from Users. Users are responsible for submitting on-site observation reports and use data to the Producer, who will compile and file an annual report with the Regional Board. The Producer, at its discretion, may assume the User's responsibility for on-site observation reports and use data.
- 14. The Producer shall assure that cross-connections between potable water and nonpotable water systems have not been created and that backflow prevention devices are in proper working order by conducting or requiring User testing, in accordance with DHS reuse criteria and CCR Title 22 Section 7605. Reports of testing and maintenance shall be maintained by the Producer.
- 15. The Producer and Users shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the Producer or Users, respectively, to achieve compliance with the water reuse requirements.

16. The Producer, Distributor and Users should receive appropriate employee training to assure proper operation of recycling facilities, worker protection, and compliance with this Order. In accordance with CCR Title 17, Section 7586, each Producer, Distributor and User shall designate a Recycled Water Supervisor responsible for compliance with a Producer's permit conditions.

17. The Producer and Users shall assure that all above ground equipment, including pumps, piping, storage reservoir, and valves, etc. which may at any time contain recycled water shall be adequately and clearly identified with appropriate warning signs. The Producer and Users shall make all necessary provisions to inform the public that the liquid being distributed is recycled water and is unfit for human consumption.

D. GENERAL PROVISIONS

1. The Producer will document compliance with all conditions of this Order and of water reuse criteria in Title 17 and Title 22 of the California Code of Regulations.

2. Current Water Reclamation Reuse Requirements that are superseded by this Order pursuant to Provisions C. 1 and 2, will be rescinded under a separate Order(s).

3. This Order provides authorization for tanker-truck distribution of recycled water, and supercedes Order No. 91-042 for those Producers pursuant to C.2. Order 91-042 stays in effect for those not under the General Order.

4. Each Producer should strive to investigate, as resources permit, all possible potential reuse strategies such as groundwater recharge, surface water augmentation, and dual water supply for new construction, in order to move towards achieving a goal of reusing the maximum possible amount of recycled water.

5. When directed by the Regional Board, in groundwater basins that are a significant source of drinking water where there is a likely potential for groundwater degradation from salt buildup from extensive water recycling irrigation, a Producer shall prepare and submit a Salt Management Program, acceptable to the Executive Officer, to insure that the overall impact of permitted water recycling projects does not degrade groundwater resources.

6. If any condition or criteria set forth in this Order conflicts or is inconsistent with any requirement set forth in any State regulation, the more stringent condition or criterion shall apply.

7. Regional Board staff will conduct an annual inspection/audit of each Producer's water reuse program and conduct periodic spot field inspections on reuse projects.

8. The Producer, User/Distributor shall permit the Board or its authorized representatives, in accordance with Section 13267(c) of the California Water Code:
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 that must be kept under the 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; and
 - d. To sample or monitor, at reasonable times, for the purpose of assuring compliance with this Order.
9. 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;
 - d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.
10. The Executive Officer may add additional Producers at any time, pursuant to conditions specified in Provisions C. 1 and C. 2.
11. The Executive Officer upon a finding of non-compliance with this Order, may revoke a Producer's authority to issue Water Reuse Permits.
12. The Board will review this Order periodically and may revise the requirements as deemed necessary.

I, Loretta K. Barsamian, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 17, 1996.

Loretta K. Barsamian
Executive Office

Attachments:

- A. Summary Chart of Recycled Water Use
- B. Notice of Intent (NOI) - General Instructions
- C. Self-Monitoring Program
- D. Standard Provisions & Reporting Requirements for Water Reuse Orders
- E. Additional Site Specific Requirements
- F. Definition of Terms
- G. Summary State Water Reuse Policies & Regs

H. Regulatory Agency Contacts

[Originator/RJC] [Reviewers BDA/RHW/TCW]
File No.: 2107.00