

STATE WATER RESOURCES CONTROL BOARD

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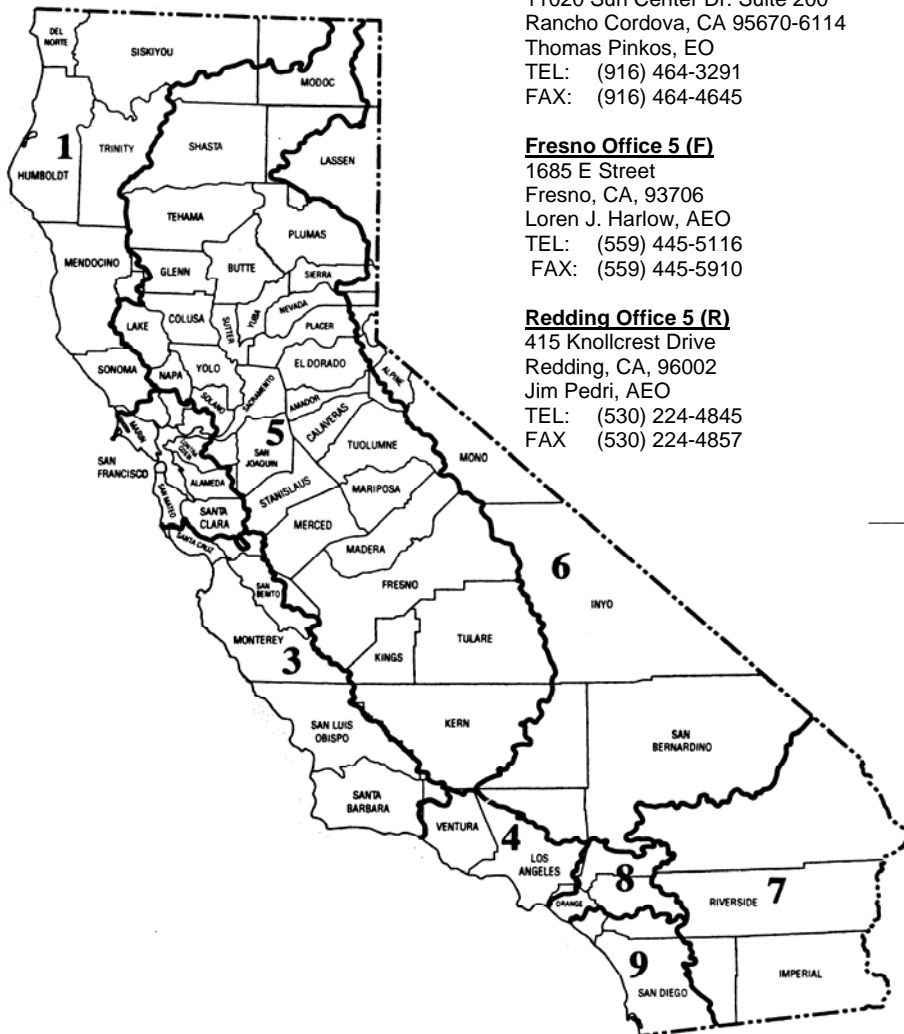
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State of California

Arnold Schwarzenegger, *Governor*

California Environmental Protection Agency

Lynda S. Adams, *Secretary*

State Water Resources Control Board

Tam M. Dudoc, *Chair*

April 18-20, 2007 Workshop in Napa, California
“CALIFORNIA BIOENERGY - THE PATH TO MARKET TRANSFORMATION”

Biogas Regulatory Roundtable:

“Regulatory Barriers to Biogas in California: A Vision for the Future”

Presenter: John Menke, State Water Board, Division of Water Quality

Focus: State Water Resources Control Board (State Board) and regional water boards regulations, policies, incentives, and issues affecting recycling of organic residuals for products and energy.

Background Information on the Water Boards

The State Board and nine regional water boards (see map) protect water quality by regulating the disposal of wastes from industrial, municipal, residential, and agricultural sources. Such wastes may be generated in the production, harvesting, or processing of organic materials and by the operation of facilities that utilize organic residuals.

The State Board serves as liaison with other state and federal agencies on water quality issues and coordinates with the regional water boards to achieve consistency in regulatory programs. The State Board reviews proposed regulations and comments on them and may participate in the development of regulations. The State Board has a Division of Water Rights that addresses water supply issues. Water supply issues may be associated with operation of industrial facilities including those that utilize organic residuals.

Regulatory programs that can affect bio-energy projects

Regulatory programs administered by the State Board or regional water boards may apply to one or more parts of a biomass to energy project. These programs are discussed below.

Waste Discharge Requirements

Regional water boards regulate waste discharge activities in their region. When an activity involves the discharge of wastes with the potential to affect water quality, the discharger must submit a Report of Waste Discharge (**ROWD**) to the appropriate regional water board along with a fee based on the proposed discharge. The regional water board will review the ROWD and revise, issue, or waive Waste Discharge Requirements (**WDRs**) for the discharge. If WDRs are the first discretionary permit issued for a discharge, the regional water board may become lead agency for the California Environmental Quality Act (**CEQA**).

When WDRs are not required

Waste discharges to a permitted landfill or municipal wastewater treatment plant (MWTP) do not require a ROWD to be filed since landfills and MWTPs have been issued WDRs. However, for some organic residuals management there is a question of whether or not the process includes a waste discharge activity. This situation can occur when there is a proposal to apply organic residuals to land as a “soil amendment” or “fertilizer.” Since, any such application has the potential to result in some material moving to underlying groundwater, a ROWD is usually required and WDRs may be issued. Additional information on management of organics residuals is in the attached outline.

Stormwater Discharge Permits

The State Board and Regional Water Boards have permitting programs for routine stormwater discharges from municipal and industrial sites and for stormwater discharges resulting from construction activities. Information on construction stormwater permits is presented below. Additional information is available at: <http://www.waterboards.ca.gov/stormwtr/construction.html>

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under General Permit 99-08-DWQ for Discharges of Storm Water Associated with Construction Activity. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling or excavation.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. The SWPPP must list Best Management Practices (BMPs) the discharger will use and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the State’s 303(d) list for sediment.

Small Linear Underground/Overhead Projects disturbing at least one acre but less than five acres (including trenching and staging areas) must be covered by the Statewide General Permit for Storm Water Discharges Associated with Construction Activity from Small Linear Underground/Overhead Projects (Small LUP General Permit). The Small LUP General Permit has varying application and permitting requirements based on the type and complexity of the project. Linear projects disturbing five or more acres of land must obtain coverage under the Construction General Permit.

If a single project traverses more than one Regional Board jurisdiction, a complete Notice of Intent package (Notice of Intent, site map, and fee) and Notice of Termination (upon completion of each section), must be filed for each Regional Board.

Regional Stormwater Permits

One regional water board has adopted their own permit to cover discharges from construction activity greater than one acre in specific watersheds. The permit is applicable to construction projects in the Lake Tahoe hydrologic unit (Lahontan Regional Water Board). Owners of construction projects in this watershed must apply for a Regional Board permit rather than the statewide Construction General Permit.

Examples of Organics Residuals Management

- I. Organic residuals from a food processing facility:
 - A. Residuals may be disposed at a landfill:
 1. Disposal activity - the residuals are a waste
 2. Landfill operator decides what wastes to accept
 3. The landfill is regulated, not the food processor (same situation with a discharge of wastewater to a municipal wastewater treatment plant)
 - B. Residuals may be applied to land at the food processing facility:
 1. May be considered a waste disposal activity - waste discharged to land
 2. May be reuse of a by-product – nutrients in the residuals fertilize crops
 3. Either way, WDRs may be issued for the activity
 - C. Residuals may be used for energy production at an off-site facility:
 1. Residuals are a by-product
 2. On-site storage piles are subject to regulation if there is stormwater runoff
 3. The off-site facility is regulated (must comply with CEQA and obtain WDRs)
 - D. Residuals may be used for energy production at the food processing facility:
 1. If this is a new on-site activity:
 - a) File a ROWD
 - b) Obtain new WDRs
 - c) Will need to comply with CEQA
 2. Wastes from the energy production unit (e.g., stormwater runoff and ash) are subject to regulation.
- II. Manure from a dairy:
 - A. Manure is collected and applied to land for crop fertilization:
 1. Reuse activity - manure is a by-product (from dairy operation)
 2. Application to land is regulated because a waste may be generated:
 - a) Amount of nutrients in applied manure may exceed crop needs
 - b) Excess nutrients may percolate to groundwater
 - c) Salts in manure may also move to groundwater
 - B. Manure is collected hydraulically and stored in an impoundment prior to cropland application:
 1. Common practice that is allowed by current WDRs
 2. Reuse activity - liquid manure is a by-product (fertilizer material)
 3. Storage activity may produce a waste (seepage from the impoundment)
 - C. Storage impoundment is covered to capture methane for power production (i.e., impoundment is a methane digester):
 1. Reuse activity for liquid manure
 2. Digester produces organic soil amendment (a by-product)
 3. Digester also produces an effluent:
 - a) May be disposed as a wastes as is done in Southern California
 - b) May be used as a liquid fertilizer (a by-product)
 - (1) A Nutrient Management Plan may be required
 - (2) Potential for residuals to impact groundwater must be addressed
 - D. Municipal or industrial wastes proposed to be added to the digester to increase methane production:
 1. Not allowed by current WDRs
 2. Requires that a new ROWD be filed
 3. May affect the by-products and wastes that are produced.

Regional Water Board Involvement in Utilization of Organic Residuals

Examples of waste management issues that the Regional Water Boards may need to address relative to new or expanding plants that utilize organic residuals are:

- Current waste discharges stop
- Current waste discharge practices are altered
- New wastes are produced and discharged to land or waters of the state.

Any of the situations listed above require that a ROWD be submitted to the appropriate Regional Water Board.

The State Board and Regional Water Boards are not directly involved in the promotion of projects to increase the utilization of organic residuals for energy production or other purposes. Nor are the Boards involved in the development or procurement of energy resources. However, as appropriate and within resource constraints, Board staff will take the following actions relative to development and utilization of organic residuals resources:

- Participate in efforts to establish standards, regulations, and permitting programs that promote the increased use of organic residuals consistent with our mandate to protect water quality
- Participate in identification of stakeholders, development of implementation strategies and action plans, and preparation of related recommendations related to organic residuals utilization
- Participate in workshops to identify and address barriers to increased use of manure, food processing wastes, and other organic residuals for power generation and bio-fuel production
- Support research centers for expanding utilization of organic residuals, evaluate funding opportunities for technology demonstrations, and assist in evaluating bio-energy and bio-product research and demonstration projects
- Participate in efforts to consolidate permitting, develop policies, improve industry-regulator communications, and structure fees to encourage increased recycling, recovery, and conversion of organic residuals
- Review action plans developed by state or federal agencies to convert organic residuals to energy in order to identify activities that may require ROWDs or WDRs
- Review proposals for the utilization of green wastes from agriculture, forest, and urban areas
- Review proposals for the use of organic residuals in the reclamation of impaired or contaminated lands.

Environmental benefits of using organic residuals for products or energy production

1. Recycling waste materials reduces impacts from waste disposal by diverting material from:
 - A. Municipal wastewater treatment
 - B. Landfills
 - C. Discharge to land for disposal or treatment
2. Bio-energy production may be combined with additional waste treatment:
 - A. May be viable even if no excess energy for sale because disposal costs are reduced or eliminated
 - B. Additional level of treatment may reduce potential water quality impacts:
 - 1.) Quantities of wastes decrease
 - 2.) More environmentally-protective disposal practices become viable.

Summary of Water Board regulations affecting the use of organic residuals

The State Board and Regional Water Boards have existing programs to regulate waste discharge activities including those involving organic residuals. No new state or federal regulations are expected to affect the existing programs. However, new information on the effectiveness of existing regulatory programs may result in more stringent regulation under current regulations. In particular, waste discharge to land will likely be subjected to increased monitoring and more restrictions (see below). Alternative uses of organic residuals to produce products or energy can have many benefits including increased environmental protection. The Water Boards support efforts to evaluate and promote alternative uses that provide additional protection for water quality.

Example of more restrictive regulation of impoundments at dairies

Excerpt from the Central Valley Regional Water Board's draft waste discharge requirements order for discharges of waste from existing milk cow dairies:

7. *Pond design must be reviewed and approved by the Executive Officer prior to construction. This Order provides a tiered approach to pond design requirements to provide an option that will significantly reduce the time required for approval by the Executive Officer as defined below:*
 - a. *Tier 1: A pond designed to consist of a double liner constructed with 60-mil high density polyethylene or material of equivalent durability with a leachate collection and removal system (constructed in accordance with Section 20340 of Title 27) between the two liners will be considered to be consistent with Resolution 68-16. Review for ponds designed to this standard will be conducted in less than 30 days of receipt of a complete design plan package submitted to the Board.*
 - b. *Tier 2: A pond designed in accordance with California Natural Resource Conservation Service (NRCS) Conservation Practice Standard 313 (as described in the Information Sheet) or equivalent and which the Discharger must demonstrate through submittal of technical reports that the alternative design is protective of groundwater quality as required in General Specification B. 8 below.*

8. *Prior to the enlargement of an existing settling, storage, or retention pond or the construction of any such new pond not associated with an expansion, the Discharger shall submit to the Executive Officer:*
 - a. *For Tier 1 and 2 pond design, a design report prepared by, or under the direct supervision of, and certified by, a Civil Engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work. The design report shall include the following, as specified in Section II.B of Attachment B to this Order...*
 - b. *For Tier 2 pond design, the design report shall also include a technical report and groundwater model that demonstrates the proposed pond is in compliance with the groundwater limitations in this Order, including calculations that demonstrate the amount and quality of seepage from the proposed pond and its effect on groundwater quality, and include proposed groundwater monitoring to evaluate the impact of pond seepage on groundwater quality.*

Enlargement of any existing pond or construction of any new pond shall not begin until the Executive Officer notifies the Discharger in writing that the design report is acceptable.