Chapter 9

LAWS AND REGULATIONS

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I. Introduction

An Integrated On-Farm Drainage Management system strives to provide an economically feasible and environmentally sound program for managing salts on irrigated farmland. Farmers who wish to develop an IFDM system must be aware of the myriad rules and regulations that govern water quality, wildlife protections and hazardous material.

Although the list of questions and considerations may seem daunting and overwhelming, there are technical and regulatory experts who can consult and work with growers to achieve a successful IFDM system. The key to this success is to develop a cooperative working relationship with the regulatory agencies and a willingness to maintain open dialogue and communications throughout the regulatory review and necessary environmental permitting process.

The assistance of a qualified biologist and/or planner is essential to navigating the environmental permit process. Consideration of the following questions and being prepared to provide a thorough and accurate description of all project activities should make the environmental compliance process easier and assist in successfully navigating any regulatory hurdles.

Please note, this chapter is merely a guideline to the complex process of environmental law and permitting. A more detailed account of the laws and regulations will appear in the technical manual for developing an IFDM system.

II. Questions That Should be Answered Before Proceeding with a Project

The following questions are intended to highlight features of the project that are often concerns for regulatory agencies.

Has an Initial Study (IS) or Environmental Assessment (EA) been completed or is one being done by a local or state permitting agency in accordance with the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA)?

Will the project require certification, authorization or issuance of a permit by any local, state or federal agency?

Have all adjacent landowners been contacted and notified before conducting any activity?

Will the project require the issuance of a variance or conditional use permit by a city or county?

Is the project currently operating under an existing use permit issued by a local agency?

What types of vegetation are currently present at the project site, including trees, brush, grass, etc.?

What types of wildlife or fish may use the project site or adjoining areas for habitat (food source, nesting, migration, water, etc.)?

Has the California Department of Fish and Game (CDFG) or the U.S. Fish and Wildlife Service (USFWS) been consulted relative to the existence of, or impacts to, threatened or endangered species on or near the project site?

Will the project result in changes to scenic views from existing residential areas, public lands, and public roads or present a visual distraction?

Will the project impact existing recreational opportunities?

Will the project result in changes or effects upon historical, or archeological and cultural resources?

Will the project result in changes or effects upon geological or paleontological resources?

Will the project include excavation?

Will the project change existing features of any hills or result in substantial alteration of ground contours?

Will the project occur on filled land or on a slope of 10 percent or more?

Will the project discharge silt or other material into a designated body of water for California or the U.S.?

Will the project involve the application, use, or disposal of hazardous material?

Will activities or the completed project result in significant amounts of noise or vibration levels?

Will activities or the completed project result in significant amounts of dust, ash, smoke, fumes or odors?

Will the project involve the burning of brush, grass, trees or materials?

Will the project substantially increase fossil fuel or energy resource consumption?

Have any other similar projects been planned or completed in the same general area?

Will the project have the potential to encourage, facilitate or allow additional new growth or development or impact local services?

Will the project result in a change to the pattern, scale or character of the general project area?

Will the project affect existing agricultural uses or result in the loss of existing agricultural lands?

Will the project be funded by private or public funds?

III. Regulatory Requirements

Both state and federal agencies have the regulatory authority over projects like IFDM. The affected regulations that could impact an IFDM project include:

California Environmental Quality Act (CEQA): CEQA was passed by the California Legislature in 1970. Generally, CEQA requires state and local agencies to identify the significant and potentially significant environmental impacts of their actions and to implement measures to avoid or mitigate for those impacts. If a significant effect is anticipated, an Environmental Impact Report (EIR) is written; otherwise; a Negative Declaration is prepared.

National Environmental Policy Act (NEPA): NEPA requires incorporating environmental considerations into the planning process for all federal projects and for projects requiring federal funding or permits. If a significant effect is anticipated, an Environmental Impact Statement (EIS) is written; otherwise, a Finding of No Significant Impact (FONSI) is prepared.

Note: Projects that are developed by state or federal agencies, and/or funded or permitted by state or federal agencies must address CEQA and NEPA. Projects that involve state participation must conform with CEQA, while projects with federal participation must conform to NEPA guidelines. Projects with both state and federal interests are subject to environmental analyses under both acts.

Federal Clean Water Act: The Federal Clean Water Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The act sets water quality standards for all toxic and nontoxic contaminants in surface waters, implements wetland protection programs, and charges the states to adopt standards and to establish treatments and controls to protect water quality within its borders.

Section 404, Clean Water Act: Section 404 of the Clean Water Act regulates the location of a structure, excavation and discharge into "waters of the United States," which can include wetlands, perennial or ephemeral streams and lakes. The U.S. Environmental Protection Agency and U.S. Army Corps of Engineers have primary jurisdiction and issue permits under Section 404.

section 402, Clean Water Act: Section 402 requires that all point sources discharging pollutants into waters of the United States obtain a National Pollutant Discharge Elimination System Program (NPDES) permit. Point source pollutants are defined as those that come from a concentrated point of origin such as a pipe, factory, feedlot or those coming from a readily determined source, as opposed to non-point pollutants, which come from diffuse sources. The Regional Water Quality Control Board regulates the Section 402 permits.

Resource Conservation and Recovery Act (RCRA): RCRA is the federal statute governing management and disposal of waste. In the case of salt residue from an IFDM system, the material is not a listed hazardous waste. However, it could be a characteristic hazardous waste if the leachable selenium concentration in the solid residue (or the dissolved selenium in disposed liquid) exceeds the allowable level of 1.0 milligrams per liter (mg/L) using the Toxicity Characteristic Leaching Procedure (TCLP).

Note: The California State Water Resources Control Board is currently developing a resolution under SB 1372 (Title 27 Draft Regulations) that would simplify some of the regulatory requirements for management of salt residue from an IFDM system. The proposed resolution would allow for on-site storage of salt residue for periods of up to one year under certain conditions. It is not clear whether the resolution would exempt the salt residue from RCRA storage and management requirements for this duration if selenium levels in the residue exceed hazardous levels.

Hazardous Waste Control Law (HWCL): HWCL is the California statute governing management and disposal of hazardous waste. California requirements are generally similar to requirements under RCRA, except that additional requirements may apply to salt waste from an IFDM system.

Land Disposal Restrictions (LDR): Certain hazardous wastes are banned from land disposal unless they are treated to meet certain standards. This treatment is generally performed by the disposal facility. Selenium waste waters must be treated to a standard of 1.0 mg/L prior to disposal and non-wastewater wastes must be treated to a leachable concentration of 5.7 mg/L as determined by TCLP.

Toxic Pits Cleanup Act (TPCA): TPCA was enacted in 1984 to regulate the cleanup of pits historically used for the disposal of liquid hazardous waste in California. Because drainage discharged to solar evaporators sometimes contains naturally occurring se-

lenium in excess of hazardous waste levels, certain requirements of TPCA were automatically triggered. This issue has been addressed by SB 1372 (Title 27 Draft Regulations), which recognizes that TPCA was not intended to address the unique circumstances and conditions pertinent to solar evaporators, and therefore exempts IFDM systems from this regulation.

Porter-Cologne Water Quality Control Act:

The Porter-Cologne Water Quality Control Act of California requires that nine Regional Water Quality Control Boards (RWQCBs) be created to regulate water quality through the establishment and enforcement of Basin Plans that define beneficial use quality objectives for water resources in their respective areas. Any waste disposal activities or releases that impact or threaten to impact the quality of "waters of the state" (either surface water or groundwater) may be regulated. Waste disposal is regulated by issuing Waste Discharge Requirements (WDRs) that specify measures that must be taken and monitoring requirements that must be followed to assure that water quality is not impacted.

NOTE: Under SB 1372 (Title 27 Draft Regulations), the State Water Resources Control Board (SWRCB) will adopt a resolution that waives WDRs for IFDM systems. The resolution will require that operators of IFDM systems follow a series of simplified requirements that are essentially generic WDRs for these operations and are intended, among other things, to prevent potential impacts to water quality. If these requirements are not followed and a discharge from an IFDM system impacts or threatens groundwater or surface water quality, a RWQCB could order that the release be investigated or could issue a cease and desist order requiring cleanup.

CCR Title 27 Landfill Regulations: The disposal of non-hazardous, non-inert waste is regulated under Title 27 of the California Code of Regulations. Under these regulations, non-hazardous waste that has the potential to degrade water quality is defined as "Designated Waste," and must be disposed of in properly designed and classified surface

impoundments with liners that are licensed to accept such waste.

RCRA Subtitle D Landfill Requirements: Design, monitoring and closure requirements for hazardous waste landfills are outlined in Subtitle D of RCRA and in Titles 22 and 23 of the California Code of Regulations. The requirements now being considered in the resolution drafted by the SWRCB pursuant to SB 1732 are not consistent with these requirements. It is not clear whether salt residue containing selenium above TCLP, STLC and/or TTLC concentrations will be permitted to be disposed in place without these requirements being triggered.

Section 401, Clean Water Act, Water Quality Certification: Under CWA Section 401, a landowner that applies for a federal permit or license for an activity that could result in a discharge to "waters of the United States" must also obtain a State Water Quality Certification that the discharge meets state water quality objectives. Most Water Quality Certifications are associated with CWA Section 404 permits.

Basin Plans or Water Quality Control Plans:

The development of basin plans was required by the state Porter-Cologne Water Quality Act (sections 13240-13247) and the federal Clean Water Act (section 303). The basin plans consist of designated beneficial uses to be protected, water quality objectives for groundwater and surface water and an implementation program for meeting the objectives. Basin plans are administered by the RWQCBs and are used by other agencies in permitting and resource management activities.

Federal Endangered Species Act (FESA): This act affords regulatory protection to plant and animal species federally listed as endangered, threatened, or proposed for listing. The act includes a provision (Section 9) that prohibits parties from the import, export, possession, transport, sale, or the unauthorized "take" of any listed species, which includes harassing, harming (which includes signifi-

cantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife or any attempt to engage in such conduct.

California Endangered Species Act (CESA):

This act establishes a state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that a state agency cannot approve a project that potentially jeopardizes the continued existence of a listed species when reasonable and prudent alternatives exist. A state lead agency must consult with CDFG during the CEQA process. CDFG will issue comments addressing their concerns and will offer reasonable and prudent alternatives for a project.

Stream Bed Alteration Agreement – Fish and Game Code, section 1600: CDFG requires notification from agencies and/or individuals prior to taking any action that would divert, obstruct, or change the material, flow, bed, channel, or bank of any river, stream, lake or any other waterway that may provide aquatic habitat. CDFG will propose reasonable project changes if the project has the potential to negatively affect resources. CDFG will seek to protect fish and wildlife resources and may stipulate conditions to protect these resources.

Fully Protected Animals: The state attempted to identify and provide protection to those animals that were rare or faced possible extinction prior to CESA under various legislative bills. This resulted in a list of 37 mammals, birds, reptiles and amphibians that were given Fully Protected status, (see Appendix). Under the more recent endangered species laws and regulations, most Fully Protected species also have been listed as threatened or endangered species. However, Fully Protected species may not be taken or possessed at any time and no licenses or permits (including a 2081) may be issued for their take except in rare circumstances.

Migratory Bird Treaty Act: This act is the result of a series of conventions with Canada, Japan, Mexico and Russia establishing a federal statute that prohibits the pursuit, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage or export at any time or in any manner, any migratory bird, unless permitted by regulations. This includes feathers, nests, eggs, other parts, or products of a migratory bird. Most birds are protected under this act.

Bald Eagle Protection Act: This law provides for the protection of the bald eagle (the national emblem) and was later amended to include the golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell or purchase or barter, transport, export or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest or egg of these eagles. By definition, take includes: pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing.

California Reclamation Board: The California Reclamation Board was established to control flooding along the Sacramento and San Joaquin rivers and their tributaries, to assist in establishing and maintaining flood control works and the integrity of the existing flood control systems, and is required to enforce standards that will best protect the public from floods. The Board's jurisdiction extends over the entire Central Valley and includes the Tulare and Buena Vista basins. An encroachment permit application must be submitted to the Board for review if a project falls within the Board's jurisdictional area.

IV. Environmental Evaluation Resources

Many useful resources are available to make the environmental evaluation and permit process easier, but nothing can substitute for the assistance provided by qualified professionals. Below are just some of the resources available. Many are available online.

Note: An attempt has been made to provide the parent website for resources rather than the actual link as websites continually change and direct links often expire within a short period of time. You may be required to navigate and search a website to find the listed resource.

Biological Data

The Wildlife and Habitat Data and Analysis Branch of CDFG provides useful tools and resources to consultants and agency personnel to evaluate impacts to biological resources. Some of the information is available to the general public and some is provided through a subscription-based service.

Species Lists

The following species lists are available from CDFG:

Complete List of Amphibians, Reptiles, Birds and Mammals in California

State and Federally Listed Endangered and Threatened Animals of California

Special Animals

State and Federally Listed Endangered, Threatened, and Rare Plants of California

Special Vascular Plants, Bryophytes, and Lichens List

California Technology, Trade and Commerce Agency – California Permit Handbook

http://commerce.ca.gov

The California Technology, Trade and Commerce Agency provides an online guide (and

print version) to the state's environmental permit process. The Handbook contains useful summaries, tips and contacts to help you understand the permit process.

CERES - CEQA Website

www.ceres.ca.gov

The California Environmental Resources Evaluation System (CERES), under the California Resources Agency, maintains a CEQA website that provides the CEQA guidelines, forms, and numerous CEQA resources.

Governor's Office of Planning and Research www.opr.ca.gov

The State Clearinghouse, under the Governor's Office of Planning and Research, is the point of contact for the distribution of environmental documents prepared under CEQA. The State Clearinghouse Handbook provides information about CEQA and the environmental document review process.

California Department of Fish and Game www.dfg.cal.gov

Reclamation Board

www.recbd.water.ca.gov

State Water Resources Control Board www.swrcb.ca.gov

US Army Corps of Engineers, Regulatory Program

www.usace.army.mil/inet/functins/cw/cecwo/ reg

US Fish and Wildlife Service, Permits http://permits.fws.gov

V. Answers to the Most Common Questions Concerning the Solar Evaporator Regulations

Definition:

What is the regulatory definition of a solar evaporator?

Linked regulatory definitions have been established by the State Legislature for "solar evaporator, integrated on-farm drainage management system, and on-farm."

A solar evaporator is designed and operated to manage agricultural drainage water discharged from an integrated on-farm drainage management system. The integrated on-farm drainage management system (1) collects drainage water from irrigated fields and sequentially reuses that water to irrigate successive crops until the volume of residual agricultural water is substantially decreased and its salt content is significantly increased; (2) reduces the level of salt and selenium in the soil; (3) discharges the residual agricultural drainage water to an on-farm solar evaporator for evaporation and appropriate salt management; (4) eliminates discharge of agricultural drainage water outside the boundaries of the property that produces the agricultural drainage water managed by the system.

Finally, "on-farm" means within the boundaries of a geographically contiguous property, owned or under the control of a single owner or operator, that is used for the commercial production of agricultural commodities and that contains an IFDM system and a solar evaporator. These linked definitions constitute a permitable solar evaporator under the new regulations. For the complete text of the definitions, see the California Code of Regulations (CCR) §22910.

How can a solar evaporator be integrated into my existing farming operation?

An IFDM system, including a solar evaporator, can be established in the entirety or a portion of your contiguous property that is currently used or will be used for commercial agricultural production, depending on your need to manage saline shallow groundwater.

Application Process:

What is the procedure for applying for and obtaining a permit to construct and operate a solar evaporator?

At present, any person who intends to construct and operate a solar evaporator shall first file a Notice of Intent (NOI) with the Regional Water Quality Control Board (RWQCB). The NOI (see Appendix) consists of a one-page form, plus supporting documentation, including the design of the solar evaporator, calculation of the maximum rate of drainage discharge to the solar evaporator, baseline groundwater monitoring data, and a local water balance analysis (annual evapotranspiration, ET, and precipitation). The solar evaporator design must be certified by a registered professional who is a civil or agricultural engineer, or a geologist or engineering geologist.

The RWQCB shall, within 30 days of receiving the NOI, review the NOI and inspect the proposed location, and if the NOI is found to be in compliance with the regulations, issue a written Notice of Plan Compliance (NPC). If the NOI is found to not be in compliance, the RWQCB shall issue a written response to the applicant identifying the reasons for non-compliance. The applicant can then take steps to revise the NOI in order to bring it into compliance.

After receiving an NPC, an applicant may proceed with construction of the solar evaporator in conjunction with an IFDM system. Before operating the solar evaporator, the applicant must request the RWQCB to conduct a compliance inspection. The RWQCB will conduct the inspection within 30 days of receiving the request, and if the solar evaporator is in compliance with the NOI and NPC, will issue a Notice of Authority to Operate (NAO). If upon inspection, the solar evaporator is found to not be in compliance, the RWQCB will issue a written response identifying the reasons for non-compliance. The applicant can then take steps to modify the solar evaporator in order to bring it into compliance with the NOI and NPC.

For the actual text of the procedures, see the Health and Safety Code (HSC) §25209.13.

Please note that these regulations may be subject to change.

Who can submit an application?

The permitable applicant of a solar evaporator facility has been defined by the State Legislature as a single owner or operator of a geographically contiguous property that is used for the commercial production of agricultural commodities with an IFDM system.

When can an application be submitted?

An application can be submitted at any time, but an NAO cannot be issued on or after January 1, 2008.

Will an Environmental Impact Report be required?

A CEQA checklist and initial study need to be completed to determine any additional environmental regulations that might apply.

Solar Evaporator Design Requirements:

What are the requirements for choosing a site for a solar evaporator?

The solar evaporator may be located anywhere on your agricultural property within the boundary of and contiguous with your IFDM system. The solar evaporator should NOT be located on the low point of the farm, and should be placed above the 100-year floodplain, and where the criteria for groundwater protection may be met.

The criteria include a one-meter depth of soil with permeability of 1 x 10-6 cm/sec or less, and a distance of five-feet or more between the bottom surface of the solar evaporator and the highest anticipated level of underlying shallow groundwater. Sites not meeting these conditions may be engineered to achieve the same level of flood and groundwater quality protection.

What types of solar evaporator designs will be permitted?

Any solar evaporator design can be permitted if it meets the basic design requirements of the new regulations. In addition to flood and groundwater quality protection, the design must include no discharge of agricultural drainage outside of the solar evaporator; discharge to the solar evaporator must be by sprinklers or another adjustable mechanism that will prevent the occurrence of

standing water; wind drift of sprinkler spray shall be prevented; and avian wildlife shall be adequately protected.

A water catchment basin may be constructed as part of the solar evaporator in order to contain standing water that might otherwise occur in the solar evaporator. The maximum size of the solar evaporator cannot exceed 2 percent of the total area of the complete IFDM system.

What is a water catchment basin?

A water catchment basin is an area within the boundaries of a solar evaporator designed to receive and hold any water that might otherwise become standing water within the solar evaporator under reasonably foreseeable operating conditions. The entire area of the water catchment basin needs to be permanently covered with netting or otherwise constructed to ensure protection of avian wildlife.

What is meant by "reasonably foreseeable operating conditions?"

"Reasonably foreseeable operating conditions" were stated by the State Legislature as defining the regulatory limits for the design of a solar evaporator, but were not quantified. The SWRCB has quantified these conditions as follows:

- the local 25-year, 24-hour maximum precipitation event,
- floods with a 100-year return period.

This means that the solar evaporator must be designed to not have standing water in the event of a 25-year, 24-hour precipitation amount, or that the water catchment basin must have sufficient volume to hold that amount of water accumulating in the solar evaporator. If a storm event occurs exceeding that amount, any associated occurrence of standing water within the solar evaporator will not be considered a violation of the regulations. In an analogous manner, inundation of the solar evaporator by a flood event exceeding the 100-year return period will also not be considered a violation of the regulations.

Is the use of a liner required?

Use of a liner is not required. Although, a liner may be used to meet the requirements for ground-water quality protection if existing soil conditions are unfavorable, and other engineered solutions

are infeasible. In this case, the liner must meet the stated specifications, including a thickness of 40-millimeters.

If the groundwater quality protection requirement is met without use of a liner, an owner/operator may use a liner at his discretion, as a functional component of the solar evaporator design. In this latter case, the 40-millimeter thickness specification does not apply.

Is the installation of a subsurface drainage system required?

Subsurface drainage systems under or adjacent to a solar evaporator are not required. Subsurface drainage systems may be installed where it is deemed necessary to provide adequate insurance that groundwater quality will be protected.

Solar Evaporator Operation Requirements:

What are the operational requirements for solar evaporators?

The solar evaporator must be operated so that:

- There is no standing water within the evaporator, except for the water catchment basin.
 Application of drainage water with a timed sprinkler system should be used to set the application at rate that will not result in standing water.
- A nuisance condition such as wind-blown salt spray is not created.
- There is no discharge of drainage water outside the boundaries of the solar evaporator.
- Avian wildlife is adequately protected.

What steps are necessary to ensure the adequate protection of avian wildlife?

In addition to no standing water, the following Best Management Practices are required to ensure adequate protection of avian wildlife:

- Keep the solar evaporator free of all vegetation.
- Do not use grit-size gravel as a surface substrate in the solar evaporator.
- Prevent access to standing water in a water catchment basin with netting and do not allow the netting to sag into standing water in the catchment basin.

 Prevent the growth of insects in the solar evaporator, the growth and dispersal of insects from the water catchment basin, and use of the netting as a site for insect pupation.

What are the monitoring requirements?

Monitoring requirements will be established by the Regional Board at the time of the issuance of a Notice of Plan Compliance within 30 days of the submittal of a Notice of Intent to construct a solar evaporator. Groundwater and avian wildlife protection monitoring shall be required, as well as any information necessary to ensure compliance with the requirements of the regulations. Monitoring reports shall be submitted annually.

What options are available for the storage of salt accumulated in the solar evaporator?

Salt may continue to accumulate in an authorized solar evaporator as long as the accumulation does not interfere with the required operation of the evaporator. Salt may be harvested at any appropriate time and utilized or sold for beneficial of commercial purposes. Otherwise, salt can be temporarily stored in an enclosed storage unit inaccessible to wind, water and wildlife, and subject to annual inspection.

Are inspections separate from monitoring?

Yes. Monitoring and other recordkeeping is the responsibility of the operator.

Inspections are the responsibility of the Regional Board and shall be conducted at least once annually during the month of May. Inspection shall be made for observations indicating a threat to avian wildlife including:

- presence of vegetation within the perimeter of the solar evaporator;
- standing water and the growth of insects;
- presence of birds or nests with eggs within the perimeter of the solar evaporator;
- an avian die-off or disabling event associated with the solar evaporator.

Solar Evaporator Closure Requirements:

How long can I continue to operate a solar evaporator?

The Notice of Authority to Operate must be renewed every five years. Renewal can be achieved as long as the solar evaporator continues to meet the State and Regional Board requirements. As long as the Notice of Authority is renewed and is in effect, closure is not required.

If closure is necessary or desired, what requirements have to be met?

Three options are available for closure: (1) harvest of salt followed by clean closure; (2) closure in place; (3) removal of salt and disposal in an authorized waste facility. The operator will select the closure option, and submit a plan to the regional board for approval.

- Clean closure: The salt from the solar evaporator may be harvested and utilized following the guidelines under salt management. After the removal of the salt, the solar evaporator and surrounding area need to be restored to a condition that does not threaten wildlife, does not threaten to pollute water, and does not cause a nuisance condition.
- Closure in place: A cover can be constructed over the solar evaporator retaining salt inplace and making use of the existing foundation.
- Waste Facility Disposal: Salt may be removed and disposed permanently in an authorized waste facility. After salt removal, the solar evaporator site is clean closed as above.

For complete requirements, see CCR §22950.

Notes: