

ATTACHMENT E

**Waste Management Plan
For
Dairies with Manure Anaerobic Digester
or Co-Digester Facilities**

A Waste Management Plan (WMP) for the dairy and digester/co-digester production areas is required by Waste Discharge Requirements General Order No. R5-2010-XXXX. The WMP must be submitted with the Notice of Intent (NOI) and Facility Information Report (FIR) and it shall address all of the items below. The portions of the WMP that are related to facility and design specifications (items II and III) must be prepared by, or under the responsible charge 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 purpose of the WMP is to ensure that the production area of the dairy and digester facilities are designed, constructed, operated and maintained so that wastes generated by the facilities are managed in compliance with Waste Discharge Requirements General Order No. R5-2010-XXXX in order to prevent adverse impacts to groundwater and surface water quality.

- I. A description of the facility that includes:
 - A. The name of the facility and the county in which it is located;
 - B. The address, Assessor's Parcel Number, and Township, Range, Section(s), and Baseline Meridian of the property;
 - C. The name(s), address(es), and telephone number(s) of the property owner(s), facility operator(s), and the contact person for the facility;
 - D. Present and maximum animal population as indicated below;

Type of Animals	Present Number of Animals	Maximum Number of Animals in Past 12 months	Breed of Animals
Milking Cows			
Dry Cows			
Heifers: 15 – 24 months			

Type of Animals	Present Number of Animals	Maximum Number of Animals in Past 12 months	Breed of Animals
Heifers: 7 to 14 months			
Heifers: 4 to 6 months			
Calves: up to 3 months			
Other types of commercial animals			

- E. Total volume (gallons) of process wastewater (e.g., digester/co-digester liquid waste, milk barn washwater, fresh (not recycled) corral flush water, etc.) to be generated daily and how this volume was determined; and
- II. An engineering report demonstrating that the existing facilities have adequate containment capacity. The report shall include calculations documenting that the containment structures are able to retain all facilities (both dairy and digester) process wastewater generated, together with all precipitation on and drainage through manured or waste/feedstock storage areas, up to and including during a 25-year, 24-hour storm.
- A. The determination of the necessary storage volume shall reflect:
 1. The maximum period of time, as defined in the Nutrient Management Plan (item III.B of Attachment D), anticipated between land application events (storage period), which shall consider application of process wastewater, manure, or digestate/soil amendment to the land application area as allowed by Waste Discharge Requirements Order No. R5-2010-XXXX using proper timing and rate of applications;
 2. Manure, digestate/soil amendment, process wastewater, and other wastes accumulated during the storage period;
 3. Normal precipitation, or normal precipitation times a factor of one and a half, less evaporation on the surface area during the entire storage period. If normal precipitation is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in II.C below;

4. Normal runoff (runoff from normal precipitation), or runoff due to normal precipitation times a factor of one and a half, from the production area during the storage period. If normal runoff is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in II.C below;
 5. The average pan evaporation during the months of minimum and maximum evaporation. Pan evaporation shall be determined from the nearest weather station to the facility. Provide the name, location (latitude and longitude) of the weather station used.
 6. 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility;
 7. 25-year, 24-hour runoff from the facility's drainage area;
 8. Residual solids after liquids have been removed; and
 9. Necessary freeboard (one foot of freeboard for belowground retention ponds and two feet of freeboard for aboveground retention ponds).
- B. If the facility's storage capacities are inadequate, the WMP shall include proposed modifications or improvements in accordance with General Specification B.8, B.9, and B.10. Any proposed modifications or improvements must be: prepared by, or under the responsible charge 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; and include:
1. Design calculations demonstrating that adequate containment will be achieved;
 2. Details on the liner and leachate collection and removal system (if appropriate) materials;
 3. A schedule for construction and certification of completion to comply with the General Specification B. 9 and B.10. of Waste Discharge Requirements General Order No. R5-2010-XXXX;
 4. A construction quality assurance plan describing testing and observations need to document construction of the pond in accordance with the design and Sections 20323 and 20324 of Title 27; and
 5. An operation and maintenance plan for the pond.

- C. Contingency Plan: If the necessary storage volume calculated in II.A or II.B above is based on normal precipitation and/or runoff rather than precipitation or runoff from normal precipitation times a factor of one and a half (see II.A.3 and II.A.4 above), then the engineering report shall include a Contingency Plan that includes a plan on how the excess precipitation and/or runoff that is generated during higher than normal precipitation will be managed.
- III. An engineering report demonstrating that the facilities have adequate flood protection. If the Discharger can provide to the Executive Officer an appropriate published flood zone map that shows the facilities are outside the relevant flood zone, an engineering report showing adequate flood protection is not required for that facility. The engineering report shall include a map and cross-sections to scale, calculations, and specifications as necessary. The engineering report shall also describe the size, elevation, and location of all facilities present to protect the facility from inundation or washout from the 100-year peak stream flows.
- IV. A report assessing the design and construction of the animal confinement areas, animal housing, manure, digestate, soil amendment, feedstock storage, and feed storage areas.
- A. The report shall assess whether the following design and construction criteria are met:
1. Corrals and/or pens are designed and constructed to collect and divert all process wastewater to the retention pond;
 2. The animal housing area (i.e., barn, shed, milk parlor, etc.) is designed and constructed to divert all water that has contacted animal wastes to the retention pond; and
 3. Manure, digestate, soil amendment, feedstock storage, and feed storage areas are designed and constructed to collect and divert runoff and leachate from these areas to the retention pond.
- B. If the facility does not meet the above design and construction criteria, the WMP shall include proposed modifications or improvements to achieve the criteria and a schedule for construction and certification of completion.
- V. An operation and maintenance plan to ensure that:

- A. All precipitation and surface drainage from outside manured areas, including that collected from roofed areas, is diverted away from manured areas, unless such drainage is fully contained and is included in the storage requirement calculations required in item II, above;
- B. All ponds are managed to maintain the required freeboard and to prevent odors, breeding of mosquitoes, damage from burrowing animals, damage from equipment during removal of solids, embankment settlement, erosion, seepage, excess weeds, algae, and vegetation;
- C. Holding ponds provide necessary storage volume prior to winter storms (by November 1st at the latest), maintain capacity considering buildup of solids, and comply with the minimum freeboard required in Waste Discharge Requirements General Order No. R5-2010-XXXX;
- D. There is no discharge of waste or storm water to surface waters from the production area or the waste application area(s);
- E. Procedures have been established for removal of solids from any lined pond/digester to prevent damage to the pond liner;
- F. Corrals and/or pens are maintained to collect and divert all process wastewater to the retention pond and to prevent ponding of water and to minimize infiltration of water into the underlying soils;
- G. The animal housing area (e.g., barn, shed, milk parlor, etc.) and digester/co-digester area (feedstock storage, digestate/soil amendment drying and storage area) are maintained to collect and divert all water that has contacted animal wastes, feedstocks, or digestate/soil amendment to the retention pond and to minimize the infiltration of water into the underlying soils;
- H. Manure and feed storage areas are maintained to ensure that runoff and leachate from these areas are collected and diverted to the retention pond and to minimize infiltration of leachate from these areas to the underlying soils;
- I. All dead animals are disposed of properly;
- J. Chemicals and other contaminants handled at the facilities (dairy and digester/co-digester) are not disposed of in any manure or process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants;
- K. All animals are prevented from entering any surface water within the confined area; and

- L. Salt in animal rations is limited to the amount required to maintain animal health and optimum production.
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- VI. Documentation from a trained professional (i.e., a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training) that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or nearby surface waters.