



Linda S. Adams
Secretary for
Environmental
Protection

California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>



Arnold
Schwarzenegger
Governor

FREQUENTLY ASKED QUESTIONS REGARDING WASTE MANAGEMENT PLANS

2 June 2010

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies (General Order) on 3 May 2007. The General Order requires that a Waste Management Plan which addresses flooding, wastewater storage, production area conditions, operation and maintenance plans, and backflow be submitted to the Central Valley Water Board. The elements of the Waste Management Plan are due to the Board according to the schedule in Table 1 of the General Order. The due date for items that were originally due on 1 July 2009 was extended to 1 July 2010 by Order No. R5-2009-0029, adopted by the Central Valley Water Board on 23 April 2009.

A separate FAQ on Backflow Prevention is posted on the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/general_order_guidance/dairy/.

If you have additional questions, you may contact Central Valley Water Board staff. The FAQs will be periodically updated to include answers to new questions that are asked. Please check the Central Valley Water Board website at the above URL for these updates.

Flood Protection Questions:

1. What part of the dairy needs to be protected from flooding?

The production area needs to be protected from flood events according to the requirements in the General Order. The General Order does not have a requirement to protect the cropland from flooding. However, flooding may make it impossible to apply wastewater to the land application area in a manner that is consistent with the Nutrient Management Plan (NMP). Therefore, if the cropland is expected to be flooded for extended periods of time, so that wastewater can't be land applied, the WMP storage calculations must reflect an extended storage period.

2. What are the 20-year and 100-year flood levels and how do I find out which applies to my facility?

Two kinds of flood events, the 20-year and the 100-year "peak stream flow", are referenced in the General Order. Under the Title 27 regulations, retention ponds or manured areas in operation on or before 27 November 1984 must be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. This event can

California Environmental Protection Agency

also be referred to as the 20-year ARI (annual recurrence interval) design flood. Similarly, under the Title 27 regulations, facilities or portions thereof which began operation after 27 November 1984 must be protected from inundation or washout during 100-year peak stream flows. Additional language regarding flood protection requirements is contained in the Tulare Lake Basin Plan and in the General Order; please see page 12, General Specifications No. 2 and 3, of the General Order for more information.

Unfortunately, there are few sources for a determination as to whether a facility is in a 20-year ARI design flood area, as the Federal Emergency Management Agency (FEMA) flood maps are drawn for the 100-year ARI design flood. In the absence of a 20-year ARI flood map, first determine if the production area is outside the boundaries (outside the shaded areas) of the 100-year ARI design flood. If an area is outside the 100-year ARI, it will be outside the 20-year ARI. Zones B, C, and X are outside the 100-year ARI. This link describes all the FEMA flood zone classifications:

<http://www.msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=floodZones&title=FEMA%20Flood%20Zone%20Designations> .

At this point, determination of the elevation of a specific flood is typically performed by modeling of a natural river or other channel by an engineer. The model most commonly used was developed by the Hydrologic Engineering Center called the River Analysis System. These modeling runs are commonly referred to as HEC-RAS studies. However, these analyses are frequently expensive to run. An alternative to modeling the 20-year ARI could be to have an engineer determine the depth of flooding on the property should the 100-year ARI flood occur. Based on discussions with engineers, it appears that in most cases there will be little difference in height between the 20-year ARI and the 100-year ARI flood.

3. What if there is no depth of flooding defined for my production area, such as areas labeled “Zone A” and “Zone D” on the FEMA maps?

Sometimes areas that are actually above the 100-year flood level are inadvertently shown as within the boundaries of the 100-year ARI design flood because of limits of scale or topographic definition of the source maps used to prepare inundation maps. Sometimes no depth of flooding is shown on the map. To resolve either of these issues, you can request a Letter of Map Addendum (LOMA) from FEMA. To request a LOMA, go to the FEMA website at http://www.fema.gov/plan/prevent/fhm/dl_mt-1.shtm .

Complete the MT-1 form and mail it, following the instructions at the link above. FEMA staff will review the site information and render a determination in 4 to 6 weeks.

If you need to request a LOMA determination, submit the balance of your WMP according to the schedule in the General Order, and include a copy of the MT-1 form that you submitted. When you receive the information from FEMA and the engineering review of the flood information has been completed, submit the flood information to the appropriate Regional Water Board office.

4. What if the flood level for my production area is extremely high, like 10 feet deep?

The requirement to provide protection from the 20-year ARI flood applies only to certain dairies which started operations prior to 1984. All dairies which began operations after 27 November 1984 (and some which began operations prior to that date, see provisions B.3 and B.4 of the General Order) have been required by the Title 27 regulations of the State Water Resources Control Board, which became effective in 1984, to be protected against 100-year peak stream flow. It is anticipated that only the oldest facilities would have difficulty complying with the 20-year ARI flood requirement. If a facility which began operations after 27 November 1984 is now unable to comply with the requirement for protection against the 100-year peak stream flow, an explanation will need to be provided in the WMP describing why the facility began operations in violation of this Title 27 requirement.

Several steps should be taken in the event that the FEMA maps indicate that the production area cannot be protected from the appropriate peak stream flow. First, verify that the flood depth projected by FEMA appear to be realistic. The MT-1 form described under item #3 above can also be used to request a LOMR (Letter of Map Revision) if fill was used prior to dairy construction to raise the height of the production area. The LOMR would recalculate flood risk based on the site-specific conditions of the production area. There may be a fee and special documentation required for this service; contact FEMA for more information.

If the flood depth appears to be realistic, and preventing flooding of the production area would require unrealistic actions, contact your Central Valley Water Board office for instructions. Remember that elevated lagoons may result in protection of the lagoon contents from most flood events, as long as the sides of the lagoon are protected from erosion by floodwaters. The areas that need to be protected from flooding are typically, in order of importance: lagoons, settling basins, manure storage areas, corrals, and silage storage areas.

Please note – any berming of the production area to provide flood protection can't modify the flood zone such that it increases flooding in some other part of the drainage system. Such a change creates liability for the dairy by increasing flooding of other properties.

5. My dairy was originally put in operation prior to 27 November 1984. However, I have expanded one or more of my existing lagoons/added a new lagoon. Can I still just comply with the requirement for protection of the production area from the 20-year peak stream flow or did changes to my lagoon make me now subject to the 100-year peak stream flow requirement?

Existing milk cow dairies built or expanded after the 27 November 1984 date must be protected from the 100-year peak stream flow. In the General Order, "expansion" is defined as, but not limited to, any increase in the existing herd size (i.e., by more than 15 percent of the maximum number of mature dairy cows in the herd on 17 October 2005) or an increase in the storage capacity of the retention ponds in order to accommodate an expansion of the existing herd. Therefore, expanding an existing lagoon, or increasing storage capacity by adding a new lagoon in order to accommodate an expansion of the existing herd would

make you subject to the 100-year peak stream flow requirement. (Note: Increasing the storage capacity of your retention pond(s) after 27 November 1984 for the express purpose of achieving compliance with the requirements of the General Order would not subject you to the 100-year peak stream flow requirement, provided said modification was made to accommodate only the existing herd size.)

Storage Calculations

1. What herd size should be used to calculate storage needs? Should the storage calculations be based on current herd size or maximum herd size allowed under the General Order?

In general, the storage calculations should be based on maximum herd size of mature dairy cows allowed under the General Order plus the maximum number of support stock expected to be kept at the dairy. If a smaller herd size is used, the number of animals cannot be increased above that number until a revised WMP for the larger number of animals (up to the maximum allowed under the GO) is submitted to the Central Valley Water Board proving that storage is adequate.

2. What is the herd size that is used to calculate storage needs in the online program and where did it come from?

The online Waste Management Plan can import the herd size from the Preliminary Dairy Facility Assessment (PDFFA) or the most recent annual report. However, this is frequently not the most appropriate herd size to use for the calculations (see answer to #1, above). If the imported herd size numbers are not appropriate, the numbers will need to be overwritten with the correct herd size numbers.

3. If my Waste Management Plan indicates that I need more storage, can I reduce my herd size, thus reducing my storage needs, instead of retrofitting/enlarging my ponds?

Yes. However, before you can increase your herd size in the future (up to the maximum allowed under the General Order) you will need to submit a revised Waste Management Plan to the Central Valley Water Board demonstrating that you have adequate storage for the increased herd size.

4. Where do the Report of Waste Discharge (ROWD) herd size and maximum herd size numbers come from in the online Waste Management Plan?

These figures were submitted to the Central Valley Water Board as part of the 2005 ROWD and were mailed to each dairy in 2007 as part of the letter placing the dairy under the General Order. If you do not know the ROWD herd size and maximum herd size for your dairy, please contact the Central Valley Water Board and we will look up that information for you. These figures will need to be hand-entered into the online Waste Management Plan.

5. I have a completed Waste Management Plan. Although I have less than the number of mature cows allowed under the General Order, the Plan says that I don't have enough storage. Am I in violation of the General Order?

Yes. You are only allowed to have as many animals at your dairy as you have storage capacity for the waste they generate, but in no case may you have more mature cows than allowed under the General Order. In the situation described here, you would need to either increase your storage capacity or reduce your herd size to the number of animals that the Waste Management Plans says that your facility can accommodate.

6. How can I increase my storage capacity?

The General Order contains a series of steps to help dairy owners and operators identify ways to increase their storage capacity. The PDFAs submitted in December 2007 included an initial evaluation of storage capacity, and indicated if storage capacity appeared inadequate. Next, as part of the 1 July 2008 submittal to the Central Valley Water Board, dairy owners and operators were required to propose interim facility modifications that would improve storage capacity, if the PDFAs indicated that storage capacity was inadequate, together with a revised PDFAs indicating the expected improvement from the modification. Then, as part of the 1 July 2009 submittal to the Central Valley Water Board, dairy owners and operators were required to document that the proposed interim facility modifications were indeed implemented, and provide a revised PDFAs demonstrating the actual effect of the modifications.

The entire process described in the preceding paragraph was designed to identify the less expensive and simpler steps that could be taken to improve storage capacity. If those steps did not increase storage capacity sufficiently, the remaining steps are to either reduce the amount of storage capacity needed, through herd size reductions or changes in operation (such as increased solids removal), or increase the storage capacity by construction of additional lagoons, settling basins, or both.

Before expanding an existing lagoon or settling basin, or constructing a new lagoon or settling basin, you will need to provide design information to the Central Valley Water Board, and receive a letter from the Executive Officer notifying you that the proposed design is acceptable. Please see page 13 and 14 of the General Order (General Specifications #6 – 9) for more information.

7. I'd like to propose a contingency plan instead of using the higher precipitation figure of 1.5 times annual precipitation for my storage calculations. What kind of contingency plan is acceptable? Does an engineer need to prepare the contingency plan?

It is important to remember that a contingency plan will be needed when it is most difficult to make changes in the facility, because it is extremely wet and there is little time to act. If an area naturally receives only limited rainfall, even in a rainy year, an additional irrigation event that is incorporated into the Nutrient Management Plan could be an acceptable contingency plan. Similarly, a wastewater agreement that is only invoked during a rainy year could be another option in an area that receives only limited rainfall. However, if the

contingency plan involves application of wastewater to cropland to lower the lagoon, as opposed to an agronomic application, the application will trigger a requirement that a Monitoring Well Installation and Sampling Plan be submitted to the Central Valley Water Board (see page B-5 of Attachment B to the General Order, item II.C.).

If the contingency plan involves an engineered structure, it must be prepared by an appropriately registered professional.

Production Area Assessment

1. What do I turn in to comply with Requirement IV.A. in Attachment B to the General Order: “a report assessing if the animal confinement areas, animal housing, and manure and feed storage areas are designed and constructed properly.”?

Accurately completing and submitting the Operation and Maintenance Plan that is part of the online Waste Management Plan on the Merced County website will comply with this requirement. If some other Operation and Maintenance Plan form was used, a separate report containing the information required in parts A1, A2, and A3 of this requirement will have to be completed and submitted to the Central Valley Water Board with the Waste Management Plan.