
Concentrated Animal Feeding Operation (CAFO) Impoundment Management Guidance December 2011

Purpose: To clarify the State of Colorado's expectations for maintaining CAFO impoundments in compliance with state Regulations No. 61 and 81.

Introduction

The Colorado Department of Public Health and Environment's Environmental Agriculture Program (Ag Program) developed this guidance document to clarify regulatory interpretation and address compliance questions related to the proper level of liquids/wastewater in impoundments at Colorado's concentrated animal feeding operations (CAFOs). This document is guidance only and should be used together with the regulatory requirements included in Colorado Water Quality Control Commission Discharge Permit System Regulation, 5 CCR 1002-61, (Regulation No. 61), and Colorado Water Quality Control Commission Animal Feeding Operations Control Regulation, 5 CCR 1002-81, (Regulation No. 81).

Background

Regulation No. 61 requires that permitted CAFOs have storage (i.e. tanks or impoundments) capable of storing, at minimum, the volume of all liquid manure and process wastewater, including the runoff resulting from a 25-year, 24-hour storm, or the runoff volume resulting from a Chronic storm, whichever is larger. A similar requirement is found in Regulation No. 81 for non-permitted CAFOs.

Depth markers must be installed in all impoundments that are designed to contain the design storm. Depth markers must be clearly marked, at a minimum, in one-foot increments and must clearly distinguish the level at which draw-down pumping should begin and the two-foot (or other approved) freeboard level. At all times, both the freeboard mark and the draw-down pumping mark must be visible, except as discussed below.

State Inspection Expectations

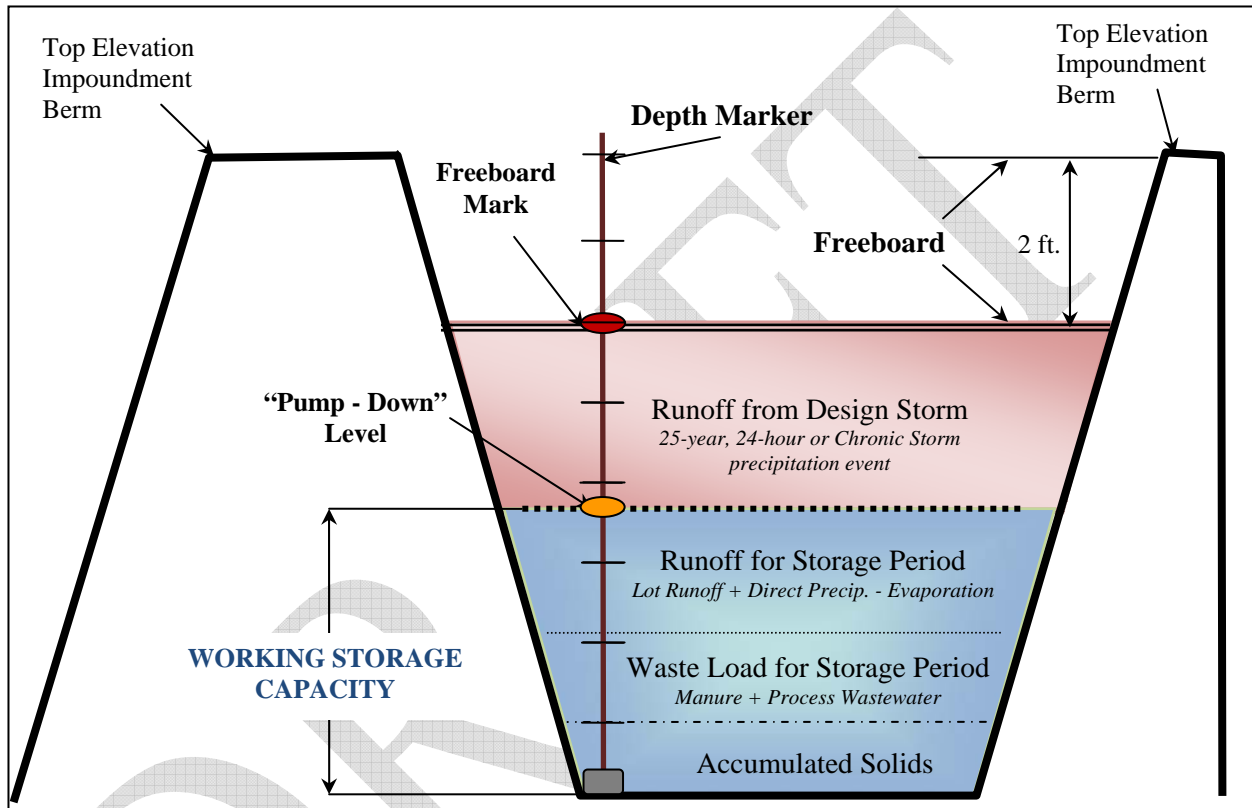
Regardless of the design of an impoundment or the location of the impoundment's spillway(s), the liquid level of impoundments must be drawn down, or otherwise maintained at appropriate operating levels. Depending on the design and construction of an impoundment, diligent and routine management may be required to ensure regulatory compliance and to avoid unpermitted discharges.

During CAFO inspections, for example, Ag Program/State field inspectors routinely document impoundments levels that are above the "pump-down" level between rain events. By allowing ponds to remain above the "pump-down" level, a CAFO loses the ability to contain the design storm and is, therefore, out of compliance with state regulations. Based on the various designs for impoundments, the following sections provide guidance on how a CAFO can meet regulatory compliance throughout the year.

Impoundments Without Spillways

Impoundments without spillways must be operated so that the impoundment can contain the runoff from the design storm (i.e., 25-year, 24-hour or Chronic storm) at all times. This will also ensure that two feet of freeboard (or other approved freeboard) is maintained above the design storm level at all times (see Figure 1).

FIGURE 1: Impoundment Management (no spillway)



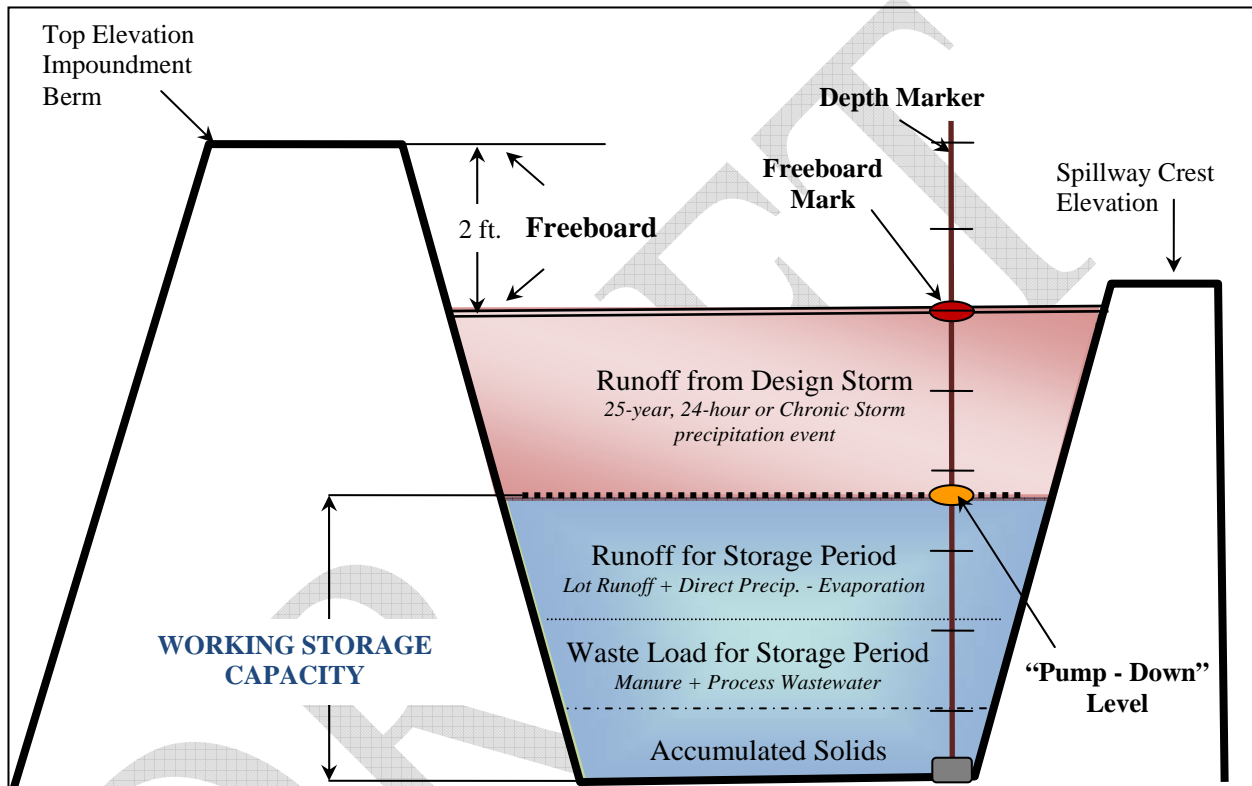
The liquid level in impoundments designed at grade or without a spillway must be maintained **within the working storage capacity**, except during or immediately after a storm event. Liquid levels that are above the working storage level (i.e., above the “pump-down” level) at any time other than during or immediately after a storm event will be subject to enforcement.

Enforcement discretion will be exercised during the period after a storm event when land application of wastewater is not possible due to frozen, saturated or snow-covered ground, or when runoff could occur as a result of application.

Impoundments With Spillways

The Colorado Department of Public Health and Environment has historically approved various impoundment freeboard designs and spillway placements. Regardless of freeboard and spillway design, impoundments must be operated so that the impoundment can contain the runoff from the design storm (i.e., 25-year, 24-hour or Chronic storm) at all times (see Figure 2).

FIGURE 2: Impoundment Management (with spillway)



For impoundments with spillways, the spillway crest elevation may vary from slightly above the freeboard mark to just below the top of the impoundment berm, depending on the pond design. Based on this design, the liquid level in these impoundments must remain **within the working storage capacity** of the impoundment, except during or immediately after a storm event.

Liquid levels found to be above the working storage level (i.e. the “pump-down” level) at any time other than during or immediately after a storm event will be subject to enforcement. Enforcement discretion will be exercised during the period after a storm event when land application of wastewater is not possible due to frozen, saturated or snow-covered ground, or when runoff could occur as a result of application.

For questions related to this guidance, please contact the Environmental Agriculture Program at 303-692-3520.