

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

**CLOSURE OF WASTE IMPOUNDMENTS
(No.)**

CODE 360

DEFINITION

The closure of waste impoundments (treatment lagoons and liquid storage facilities), that are no longer used for their intended purpose, in an environmentally safe manner.

<http://www.waterboards.ca.gov/cwphome/land/docs/t2797m.pdf>.

All structures used to convey waste to waste impoundments and/or to provide drainage from the impoundment area shall be removed and replaced with compacted earth material or otherwise rendered unable to convey waste.

PURPOSE

- Protect the quality of surface water and groundwater resources.
- Eliminate a safety hazard for humans and livestock
- Safeguard the public health.

Liquid and slurry wastes shall be agitated and pumped to the extent conventional pumping will allow. Clean water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized properly and in accordance with applicable regulations. The sludge remaining on the bottom and sides of the waste treatment lagoons or waste storage ponds may remain in place if it will not pose a threat to the environment. If leaving the sludge in place would pose a threat, it shall be removed to the fullest extent practical and utilized properly and in accordance with applicable regulations and NRCS criteria.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to NRCS standards, this practice will only apply where the investigation, as required in National Engineering Manual (NEM) 501.23, shows structural integrity.

Embankment Impoundments. Waste impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three feet or more above natural ground.

Impoundments with embankments may be breached so that they will no longer impound water.

CRITERIA

General Criteria Applicable to All Purposes

In California, Closure Standards for Units other than Landfills (including surface impoundments, waste piles, and Land Treatment Units) are set forth in the Title 27 of the California Code of Regulations (Division 2, Subdivision 1, Chapter 3, Subchapter 5, Article 3:

Waste shall be removed from the site before the embankment is breached. The slopes and bottom of the breach shall be stable for the soil material involved, however the side slopes shall be no steeper than three horizontal to one vertical (3:1).

Excavated Impoundments. Excavated impoundments may be backfilled so that these areas may be reclaimed for other uses.

The backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The top one foot of the backfill shall be constructed of the most clayey material available and mounded to shed rainfall runoff. Incorporate available topsoil where feasible to aid establishment of vegetation.

Closed Waste Storage Structures. Closed waste storage structures shall be demolished or disassembled or otherwise altered to such an extent that no water can be impounded. Disassembled materials such as pieces of metal shall be temporarily stored until their final disposition in such a manner that they do not pose a hazard to animals or humans.

Demolished materials shall be buried on-site or moved off-site to locations designated by state or local officials. If buried on-site, the materials are to be covered with soil to a settled depth of one foot, and the backfill sufficiently mounded such that runoff will be diverted from the site after the backfill settles.

Conversion to Fresh Water Storage. The converted impoundment shall meet the requirements as set forth in the NRCS practice standard for the intended purpose.

Safety. When sludge is not removed from a waste impoundment that is converted to fresh water storage, it shall not be used for fish production, swimming, or livestock watering until water quality is adequate for these purposes. Precautions (fencing and warning signs) shall be used to ensure that the pond is not used for purposes incompatible with the current quality of water.

Personnel shall not enter an enclosed waste impoundment without breathing apparatus or taking other appropriate measures.

Protection - All disturbed areas shall be shaped and revegetated, or other suitable measures used to control erosion, properly manage runoff and drainage, and restore the aesthetic value of the site.

Measures shall be taken during construction to minimize site erosion and pollution of

downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

CONSIDERATIONS

Reduce pumping effort to empty waste impoundments where the surface is covered by a dense mat of floating vegetation by first applying herbicide to the vegetation and properly disposing of the residue.

Alternative methods of sludge removal may be required where the impoundments contain large amounts of oyster shells, soil, or other debris.

Minimize the impact of odors associated with emptying and land applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

Soil to fill excavated ponds should not come from important farmlands (prime, statewide, local, and/or unique).

Breached embankments may detract from the overall aesthetics of the operation. To the degree practicable, embankments should be removed and the site returned to its original grade.

Keep sludge left in place covered with water to prevent its aerobic decomposition with the potential release of nutrients to surface and ground water.

Disassembled structural facilities may be suitable for assembly at another site. Care should be taken during closure to minimize damage to the pieces of the facility, particularly coatings that prevent corrosion of metal pieces

Cultural Resources

NRCS policy is to avoid any effect to cultural resources and protect them in their original location. Determine if installation of this practice or associated practices in the plan could have an effect on cultural resources. The National Historic Preservation Act may

require consultation with the California State Historic Preservation Officer.

<http://www.nrcs.usda.gov/technical/cultural.html> is the primary website for cultural resources information. The California Environmental Handbook and the California Environmental Assessment Worksheet also provide guidance on how the NRCS must account for cultural resources. The e-Field Office Technical Guide, Section II contains general information, with Web sites for additional information.

Document any specific considerations for cultural resources in the design docket and the Practice Requirements worksheet.

Endangered Species

If during the Environmental Assessment NRCS determines that installation of this practice, along with any others proposed, will have an effect on any federal or state listed Rare, Threatened or Endangered species or their habitat, NRCS will advise the client of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the client selects one of the alternative conservation treatments for installation; or with concurrence of the client, NRCS initiates consultations concerning the listed species with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game.

PLANS AND SPECIFICATIONS

Plans and specifications for closure of abandoned waste treatment lagoons and waste storage facilities shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall also be consistent with the requirements of that standard.

OPERATION AND MAINTENANCE

The proper closure of a waste treatment lagoon or waste storage pond should require little or no operation and maintenance; however, if it is converted to another use, such as a fresh water facility, operation and maintenance shall be in accordance with the

needs as set forth in NRCS conservation practice standard for the intended purpose.

REFERENCES

USDA-NRCS, 1992, Agricultural Waste Management Field Handbook: 210-VI-NEH Part 651, 17 chapters (incl. rev dated 1992-1999). <http://www.info.usda.gov/CED/>

COMBINED SWRCB/CIWMB REGULATIONS DIVISION 2, TITLE 27

Article 3. SWRCB - Closure Standards for Units Other Than Landfills

<http://www.waterboards.ca.gov/cwphome/land/docs/t2797m.pdf>

