

NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA CONSERVATION PRACTICE STANDARD
IRRIGATION PIT OR REGULATING RESERVOIR

(No.)

CODE 552

DEFINITION

A small storage reservoir constructed to regulate or store a supply of water for irrigation.

SCOPE

This standard applies to open pits excavated below the ground surface to intercept and store either surface water or unconfined groundwater for irrigation. It applies to pits if part of the water is impounded above natural ground, provided that the depth of water above the ground surface, as measured at the spillway crest elevation, does not exceed 3 feet.

PURPOSE

To collect and store water until it can be used beneficially to satisfy crop irrigation requirements.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies only to sites meeting all the following criteria and conditions:

1. The existing water supply available to the irrigated area is insufficient to meet conservation irrigation requirements during part or all of the irrigation season.
2. Construction of an irrigation pit is the most practical means of obtaining a needed additional supply of water.

3. An adequate supply of good quality water is available for storage from surface runoff, streamflow, or from a subsurface source.
4. Topographic, geologic, water table, and soils conditions at the site are satisfactory for the feasible development of the irrigation pit.
5. If surface runoff enters the pit, the contributing drainage area is or can be protected against erosion to the normal sedimentation does not materially shorten the planned life of the pit.

CRITERIA

CAPACITY

Irrigation regulating reservoirs shall be designed to have a usable capacity sufficient to satisfy irrigation requirements in the design area throughout the growing season of the crop or crops being irrigated. In computing capacity requirements, due consideration shall be given, where applicable, to groundwater inflow, surface runoff, precipitation, evaporation, and seepage. Additional capacity shall be provided as necessary for sediment storage. The usable capacity of a pit that depends wholly on groundwater as a source of supply shall be that part of the pit that is below the static water level.

PIT DESIGN

Irrigation regulating reservoirs shall be designed according to the criteria for excavated ponds in the Virginia Conservation Practice Standard, *Ponds (Code 378)*.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

OUTLET WORKS

Suitable outlet works shall be provided for the controlled release of irrigation water. The capacity of the outlet works shall be no less than that required to provide the outflow rate needed to meet peak period irrigation system demands.

CONSIDERATIONS

- Consider the effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and groundwater recharge.
- Effects on downstream flows or aquifers that would affect other water uses or users should be assessed.
- Potential for irrigation water management should be considered.
- Effects on erosion and the movement of sediment, pathogens, and the soluble and sediment-attached substance carried by runoff should be assessed.
- Consider the effects on the movement of dissolved substances to groundwater.
- Short-term and construction-related effects on the quality of downstream water courses should be assessed.
- Potential of uncovering or redistributing toxic material should be considered.
- Consider the effects on wetlands or water-related wildlife habitats. Wetland investigations and documentation should be performed according to existing policy.
- Effects on the visual quality of water resources should be assessed.

PLANS AND SPECIFICATIONS

Plans and specifications for irrigation regulating reservoirs shall be in keeping with this standard and shall describe the requirements for properly

installing the practice to achieve its intended purpose.

Irrigation regulating reservoirs shall be constructed according to the specifications in accordance with Virginia Conservation Practice Standard, *Pond (Code 378)*.

OPERATION AND MAINTENANCE

Periodic inspection and maintenance of irrigation regulating pits will be required. Damage from rodents, vehicles, vandalism, or other causes shall be repaired promptly.

REFERENCES

1. NRCS National Engineering Handbook, Sections 5, 11, 17.
2. NRCS Engineering Field Manual, Chapters 2, 4, 11, 15, and 17.
3. Wetlands Local-State-National Joint Permit Application.
4. "USGS, Dept. of Interior, Average Annual Runoff in the United States, 1951-80".

NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA CONSERVATION PRACTICE STANDARD
IRRIGATION PIT OR REGULATING RESERVOIR
Approved Practice Narrative

(No.)

CODE 552

552 D1 Irrigation Pit or Regulating Reservoir: An irrigation regulating reservoir shall be installed to collect and store water until it can be used beneficially to satisfy crop irrigation requirements.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD.)

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC, 20250-9410 or call (202) 720-5964 (voice and TDD.) USDA is an equal opportunity provider and employer.