

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD AND SPECIFICATION**

**SINKHOLE TREATMENT**

(Acre)

CODE 725

**DEFINITION**

Treatment of sinkholes or areas of internal drainage (sinkhole watersheds) which deliver runoff waters to a groundwater system and/or pose a threat to public safety.

The role of sinkholes in providing recharge to the groundwater system shall be maintained. Do not seal sinkholes where such action will increase detrimental flooding within the area of internal drainage.

Provide for public safety in and around sinkholes.

**PURPOSES**

Practices may be applied to support one or more of the following:

- Improve quality of recharge waters entering the groundwater system.
- Improve the quality of the groundwater resource.
- Improve chemical and nutrient management within sinkhole watersheds.
- Reduce soil erosion within sinkhole watersheds.

Drains or backfill should only be utilized for active, unstable sinkholes which have the potential to void the land resource, cause a public nuisance, or endanger public safety. This procedure should not increase discharge to the sinkhole unless the underground solution channels are capable of removing the additional flow. No additional flooding should result. If additional discharge is deemed feasible, it should be of reasonable quality. Use criteria in the VERTICAL DRAIN (630) standard as a guide. Guidelines for rock backfill are available from the zoning codes of Greene County, Missouri, or NRCS engineering criteria.

Sinkholes may be sealed if they develop in pool areas or foundations of impoundments, or other areas where structural elements are endangered.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice is applicable in areas where karst features (sinkholes) are present which exhibit the potential to deliver surface water pollutants or contaminants to the groundwater system. The practice also applies where public safety is a concern.

Remove trash, debris, or other materials from sinkholes which may pollute or contaminate the groundwater system and interfere with normal discharge. Material removed from sinkholes shall be disposed of in a proper manner and in compliance with all relevant regulations.

This practice is only applicable in areas where it is not in violation of local, state, or federal zoning regulations or other laws.

**Additional Criteria To Improve Quality of Recharge Waters Entering the Groundwater System**

Provide vegetative buffers around sinkhole rims to act as filters for polluted or contaminated runoff. Vegetation selected may consist of grass, shrubs, and/or trees and shall be suited to the site conditions and capable of removing sediment and other pollutants from overland flow. Follow criteria

**CRITERIA**

**General Criteria Applicable to All Purposes**

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

**NRCS MOFOTG  
September 1997**

## 725 Interim - 2

in the FILTER STRIP (393) and RIPARIAN FOREST BUFFER (391) standards.

Livestock shall be excluded from the buffer and immediate sinkhole area.

### **Additional Criteria To Improve Chemical and Nutrient Management Within Sinkhole Watersheds**

Chemical, pesticide, nutrient, or waste management programs shall be adopted to improve the quality of surface waters flowing to sinkhole areas. Follow criteria in PEST MANAGEMENT (595), NUTRIENT MANAGEMENT (590), WASTE UTILIZATION (633), and INTEGRATED CROP MANAGEMENT SYSTEM (751) standards.

Utilize PRESCRIBED GRAZING (528A) to improve forage utilization, manure/nutrient distribution, and limit livestock access to sinkhole drainage areas.

### **Additional Criteria Reduce Soil Erosion within Sinkhole Watersheds**

Reduce the amounts of pollutants/contaminants delivered to the aquifer systems. Select practices that reduce sheet-and-rill and concentrated flow erosion (classic or ephemeral gullies).

Prevent formation of cattle trails and subsequent concentrated flow through the use of a management system that may include PRESCRIBED GRAZING (528A) and/or USE EXCLUSION (472) standards within the sinkhole area.

## **CONSIDERATIONS**

Caution should be taken when working around or operating equipment near the rims of active, unstable sinkholes.

Some cities and counties have enacted sinkhole zoning regulations which restrict the practices that can be implemented in karst areas. These regulations should be considered when planning or applying conservation practices in sinkhole areas.

## **PLANS AND SPECIFICATIONS**

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation. Species, site limitations, methods, equipment, season of year, and guides to pruning for the applicable purpose shall be considered.

## **OPERATION AND MAINTENANCE**

Provisions must be made for timely and necessary maintenance to insure that practices utilized by this standard function properly. Practices that may require maintenance include, but are not limited to, filter strips, forest buffers, vertical drains, rock backfill, and fencing.