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Operating and Maintaining Underground Outlet Terrace Systems

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The proper operation of underground outlet terrace systems depends on good farming practices, frequent inspections and prompt correction of problems. Inspect your systems soon after each significant rainfall. This is the best time to see existing or potential problems. Plainly marked inlets and outlets make this chore easy. Timely repairs or replacements normally lower maintenance costs, increase the life of the system and prevent serious problems.

The systems are designed so that runoff is temporarily stored in the terrace basin and removed through the underground conduit. If the inlet of a terrace ever becomes blocked, the chances of water running over the top of the terrace increase. Terrace systems are designed to handle the largest storm that normally occurs once in 10 years, so water may overflow even a properly maintained terrace occasionally.

To limit this damage, make sure the terrace ridge has a low spot located away from the outlet at a place where the land is as flat as possible. Keep the terrace ridge built up slightly higher over the conduit.

To ensure proper operation of a terrace system, maintain the capacity of the terrace basin. Management practices such as conservation tillage and contour farming help reduce erosion between the terraces and reduce the amount of sediment filling up the terrace basin. Avoid fall tillage and farming over the terrace ridge.

Topsoil is often removed during terrace construction. Areas of exposed subsoil reduce crop production. Applying fertilizer, lime or manure helps return the productivity of these areas.

Maintaining inlets

Install wire trash racks and caps to prevent trash from entering the conduit. Keep them in good repair and free of crop residue and other trash that reduce the flow. Control weeds with spot herbicide treatments. Weeds around inlets can restrict the flow and catch silt; this causes wet areas in the terrace channel.

Repair or replace broken or bent inlets promptly. Setting up a flag or painting inlets a bright color makes them visible to machinery operators. Temporary fencing protects inlets from livestock damage.

Maintaining terraces

The water storage volume is reduced when the terrace ridge height is lowered by farming operations or when

sediment deposits accumulate in the terrace channel.

Normally terraces are maintained by these two methods:

- Plow up terrace ridges routinely with a moldboard plow or terracing plow to move sediment from the channel to the ridge.
- Severe damage may require the use of a bulldozer or scraper.

Your construction drawings indicate the necessary height of the terrace ridge and inlet details. These drawings are useful for references when repairs or sediment removal are needed.

Maintain the height of the terrace ridge by plowing with farm equipment or rebuilding it with construction equipment.

Maintaining outlets

Inspect the outlet often to ensure proper operation. Use a steel post to identify the location of the outlet.

Excessive sedimentation or ponding of water at the outlet may restrict the water flow or cause a complete blockage if the water freezes. A blocked outlet increases the chance that the entire system will fail.

Follow the suggestions in this guide sheet to help ensure the proper operation of the terraces and underground outlets. Some damage is normally expected when rapid runoff or large amounts of rainfall occur.

For more assistance, contact your local Natural Resources Conservation Service office, Soil and Water conservation district office or the MU Extension center.

This guide sheet was written and produced in cooperation with the Natural Resources Conservation Service.

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Related MU Extension publications

- G1500, Choosing Terrace Systems
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G1500
- G1503, Operating and Maintaining Grassed Outlet Terrace Systems
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G1503
- G1504, Maintaining Grassed Waterways
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G1504

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