

# Water & Sediment Control Basin

## PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 638



### DEFINITION

A water and sediment control basin is an earth embankment or combination ridge and channel constructed across the slope and minor water courses to form a sediment trap and water detention basin.

### PRACTICE INFORMATION

The purpose of this practice is to improve farmability of sloping land, reduce erosion, trap sediment, reduce and manage runoff, and improve water quality.

This practice applies to sites where:

1. The topography is generally irregular or undulating.
2. Water concentrates and causes gullies to form.
3. Sheet and rill erosion can be controlled by other conservation practices.
4. Runoff and sediment are causing damage to land, crops, water and farm facilities.
5. Soil and site conditions are suitable.
6. Adequate outlets can be provided for disposal of runoff water.

Water and sediment control basins are generally installed on land that is relatively steep and undulating and past erosion has caused channels to form that permanently alter the terrain. Therefore, contour farming, stripcropping, terraces and other practices based on contouring may not be acceptable on fields where this practice is used.

Sheet and rill erosion may continue to be a problem following installation of water and sediment control basins. For this reason, additional practices are needed to protect the sloping upland areas of the fields. Crop rotations and residue management that leave the crop residue on the soil surface are commonly used to reduce sheet and rill erosion. On fields where contouring is not practical, fields are often farmed across the slope to help reduce the velocity of runoff water.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages contain the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, soil, etc. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

## CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: recorded in Microsoft word 6.0 - use tabs to change cells/fields

STATE	ANY	FIELD OFFICE	ANY	DATE	12/5/96
<b>PRACTICE:</b> 638 Water & Sediment Control Basin				NOTES:	
<b>RESOURCE: SOIL</b>				<b>Help Message: Click on form field for choice lists. Tab key to move around. "N/A" is the default.</b>	
<b>RESOURCE CONCERN: EROSION</b>					
<b>RESOURCE INDICATORS</b>				<b>PHYSICAL EFFECTS</b>	
SHEET AND RILL				insignificant	
WIND				N/A	
EPHEMERAL GULLY				significant reduction in ephemeral gully erosion	
CLASSIC GULLY				significant reduction in classic gully erosion	
STREAMBANK				slight reduction in streambank erosion	
IRRIGATION INDUCED				N/A	
SOIL MASS MOVEMENT				N/A	
ROADBANK/CONSTRUCTION				N/A	
OTHER					
<b>RESOURCE CONCERN: SOIL CONDITION</b>					
SOIL TILTH				insignificant	
SOIL COMPACTION				insignificant	
SOIL CONTAMINATION					
• SALTS				N/A	
• ORGANICS				N/A	
• FERTILIZERS				N/A	
• PESTICIDES				N/A	
• OTHER					
DEPOSITION/DAMAGE					
• ONSITE				significant reduction/onsite deposition damage	
• OFFSITE				significant decrease/offsite deposition damage	
DEPOSITION/SAFETY					
• ONSITE				significantly improve onsite safety/deposition	
• OFFSITE				sign. improve offsite safety hazard/deposition	
OTHER					
<b>RESOURCE: WATER</b>					
<b>RESOURCE CONCERN: WATER QUANTITY</b>					
SEEPS				slight increase in seepage hazard	
RUNOFF/FLOODING				moder. decrease in runoff/flooding	
EXCESS SUBSURFACE WATER				slight increase in excess subsurface water	
INADEQUATE OUTLETS				moderate improvement in H2O outlet concern	
WATER MGT. IRRIGATION					
• SURFACE				N/A	
• SPRINKLER				N/A	
WATER MGT. NON-IRRIGATED				N/A	
RESTRICTED FLOW CAPACITY (H2O convey.)					
• ONSITE				significant improvement in onsite drainage	
• OFFSITE				significant improvement in offsite drainage	
RESTRICTED STORAGE				sign. reduction in sedimentation of H2O storage	
OTHER					

<b>RESOURCE: WATER</b>	
<b>RESOURCE CONCERN: WATER QUALITY</b>	
<b>RESOURCE INDICATORS</b>	<b>PHYSICAL EFFECTS</b>
<b>GROUNDWATER CONTAMINANTS</b>	
• PESTICIDES	slight potential increase/GWater contam./pesticide
• NUTRIENTS AND ORGANICS	slight poten. increase in GWater contam./nutr,org.
• SALINITY	insignificant
• HEAVY METALS	N/A
• PATHOGENS	slight poten. increase/GWater contam./pathegens
• OTHER	
<b>SURFACE WATER CONTAMINANTS</b>	
• PESTICIDES	slight reduction in SWater contam./pesticides
• NUTRIENTS AND ORGANICS	slight reduction in SWater contam./nutr.,organics
• SUSPENDED SEDIMENTS	sign. reduction in SWater contam./susp. sedi.
• LOW DISSOLVED OXYGEN	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• WATER TEMPERATURE	insignificant
• PATHOGENS	slight decrease in SWater contam./pathegens
<b>AQUATIC HABITAT SUITABILITY</b>	significant improvement in Aqua. Hab. Suit.
<b>OTHER</b>	
<b>RESOURCE: AIR</b>	
<b>RESOURCE CONCERN: AIR QUALITY</b>	
<b>AIRBORNE SEDIMENT AND SMOKE PARTICLES</b>	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
<b>AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS</b>	N/A
<b>AIRBORNE CHEMICAL DRIFT</b>	N/A
<b>AIRBORNE ODORS</b>	N/A
<b>FUNGI, MOLDS, AND POLLEN</b>	N/A
<b>OTHER</b>	
<b>RESOURCE CONCERN: AIR CONDITION</b>	
<b>AIR TEMPERATURE</b>	N/A
<b>AIR MOVEMENT (windbreak effect)</b>	N/A
<b>HUMIDITY</b>	N/A
<b>OTHER</b>	



<b>RESOURCE: HUMAN</b>	
<b>RESOURCE CONCERN: SOCIAL CONSIDERATIONS</b>	
<b>RESOURCE INDICATORS</b>	<b>PHYSICAL EFFECTS</b>
PUBLIC HEALTH AND SAFETY	mod. improvement in public health & safety
PRIVATE/PUBLIC VALUES	mod. improvement in private/public values
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
<b>RESOURCE CONCERN: CULTURAL CONSIDERATIONS</b>	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	