

Slippery Rock Watershed Coalition
SR 87/88 FERRIS EAST VERTICAL FLOW SYSTEM FACT SHEET

PA Game Lands No. 95, Venango Township, Butler County, PA

FUNDING SOURCE:

EPA 104(b)(3) Grant

PROJECT PARTICIPANTS:

Puryear Excavating and Trucking	PA Bureau of District Mining Operations (Knox)
Bureau of Mining and Reclamation	PA DEP Northwest Regional Office
PA Game Commission	Butler County Conservation District
NRCS	WPCAMR
PA Fish and Boat Commission	Slippery Rock Watershed Coalition
Slippery Rock University	

COMPLETION DATE:

Major construction completed August 1997

Water Quality Monitoring ongoing: PA DEP, Knox DMO

MATERIALS USED FOR TREATMENT:

183 yd³ of compost mixed with 60 tons of #9 limestone

900 tons of AASHTO No. 1 limestone

WATER COLLECTION AND DISTRIBUTION:

Collection: By check dam and two rock lined channels

Inlet: From the collection system, flow is distributed vertically down through the 2 foot layer of compost/limestone mixture to the under drain system consisting of 3 rows of 6" perforated Schedule 40 PVC connected to a 6" Schedule 40 PVC manifold which is embedded in a 1.25 foot layer of river gravel of the first cell. Flow from the underdrain system rises vertically through 6" Schedule 40 PVC pipe and is discharged to the second cell. The flow moves vertically down through the AASHTO No. 1 limestone of the second cell to an underdrain system similar to that of the first cell.

Outlet: Flow from the second cell is discharged to the retention area through an Inline Water Level Control Structure. This device can be vertically adjusted to control the pool elevation in the second cell by the use of stop logs. The current elevation of the stop logs creates a 5 foot depth of water above the top of the AASHTO No. 1 limestone.

SYSTEM DIMENSIONS (FEET):

	<u>Length</u>	<u>Width</u>	<u>Depth</u>
<u>Cell 1</u>	232	50	12
<u>Cell 2</u>	192	66	12

SOIL AMENDMENTS AND SEED MIXTURE:

Birdsfoot trefoil @ 10 lbs/ac; White Dutch clover @ 4 lbs/ac; Reed Canary Grass @ 10 lbs/ac; Winter Wheat cover, Aglime @ 4 tons/ac; 10-20-20 fertilizer; straw @ 100 bales/ac

WATER QUALITY (representative):

	Flow (gpm)	pH	Alk(mg/l)	Acd(mg/l)	Fe(mg/l)	Al(mg/l)
Pre-construction: SR87 Raw	11.0	3.4	0	77	2.4	5.0
Pre-construction: SR88 Raw	11.0	3.4	0	95	3.4	7.4
Post-Construction: Cell 2	23.0	7.1	103	0	0.7	0.6