

ANOTHER

# SLAG

## SUCCESS STORY

THE  
ALL-PURPOSE  
CONSTRUCTION  
AGGREGATE

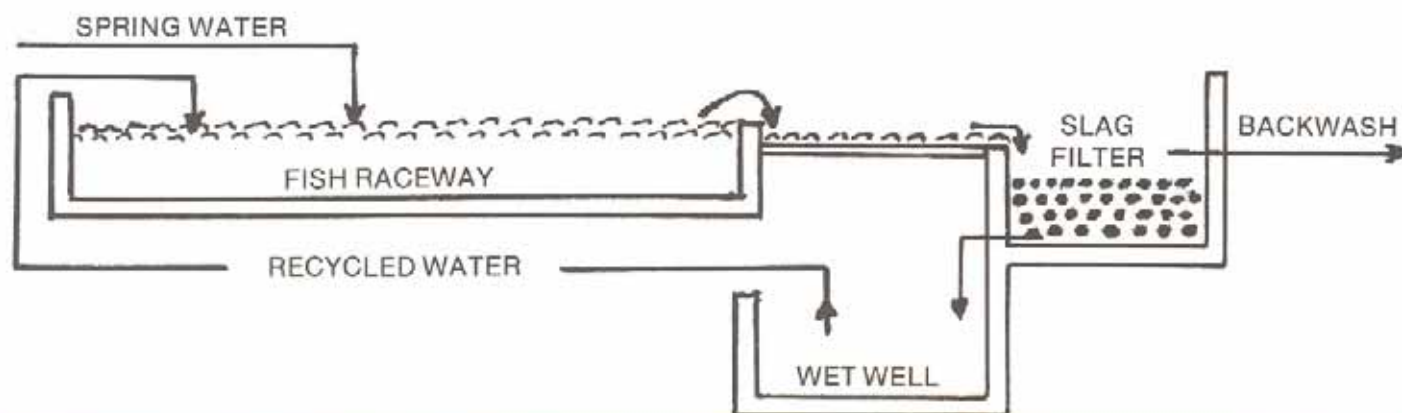
### *SLAG PURIFIES TROUT FARM WATER*

The West Virginia Department of Natural Resources, Division of Wildlife Resources, has used air-cooled blast-furnace slag as an ideal filter medium in the treatment and subsequent recycling of water from raceways containing 300,000 trout fingerlings.

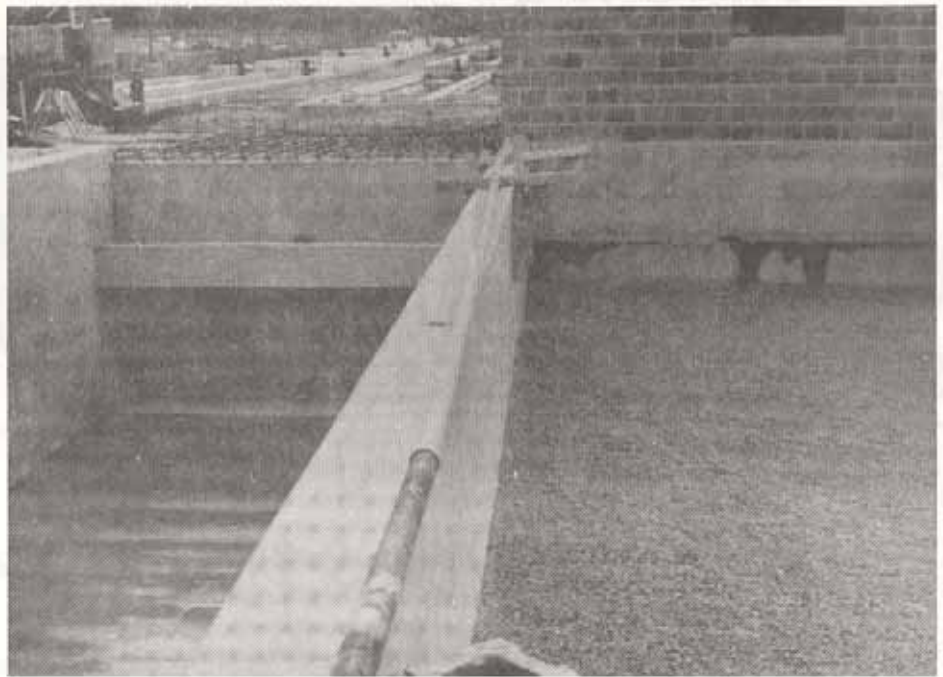
Before specifying slag, the Wildlife Division had to prove the slag would not interfere with the successful raising of various species for its all-year-round trout fishing season. After performing laboratory leaching tests, the slag was chosen over limestone, oyster shells, and expanded shale for technological reasons.

The performance of the slag filters has surpassed the expectations of the design engineers and fish biologists, particularly as to the back-flushing process and the control of ammonia in the recycled water.

The Reed's Creek Hatchery, shown at right, is located in the Potomac Highlands east of Elkins, W. Va., and is the site of \$770,000 improvement doubling the number of raceways from 20 to 40. This 100% increase in capacity could only be accomplished by recycling the spring water as it flows through raceways. Before the water can be returned to the front end of the raceways, it must pass through the slag treatment system as shown in the diagram below:



The slag's function is to filter out solids and ensure retention of microorganisms which remove and metabolize toxic ammonia created by the fish that otherwise would prevent recycling the water. The Wildlife Division Management no longer has to worry about the frequent low flow of the spring water. The photo to the right shows two of the filters, one after it was filled with slag.



There are six filters containing a total of about 900 tons of air-cooled blast-furnace slag in AASHTO sizes #4 (1½"-¾"), #57 (1"-½") and #8 (¾"-#8) from the Weirton Plant of The Standard Slag Company serving Weirton Steel, Div. of National Steel Corporation, in Weirton, West Virginia. Filters are on the left side of the adjacent photograph, the fish raceways on the right.

Besides its excellent structural and chemical qualities for this unique application, the slag was found to be a perfect habitat for the nitrogen-fixing microorganisms because of its alkalinity and its vesicular structure which prevents microorganisms being lost during back flushing. The photo to the right shows fingerlings in one of the raceways.

