

# Grants Branch Lake: A Successful Experiment

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# THE FEDERAL LAW

- **S**urface
- **M**ining
- **C**ontrol and
- **R**eclamation
- **A**ct of 1977

# SMCRA

- Established nationwide program to protect society and the environment from the adverse impacts of coal mining
- The program is implemented through partnerships with Federal and State Regulators, tribes, coal companies, consultants, and the public.

# Refuse Impoundment and Preparation Plant



# Reclaimed Refuse Impoundment



# Coal Refuse Slurry Impoundments Have Some Bad History

- Buffalo Creek
- Martin County Coal Company

# Buffalo Creek

- Disaster occurred at a coal refuse slurry impoundment February 26, 1972 on the Middle Fork of Buffalo Creek in Logan County, West Virginia
- 127 people were killed



The flood damaged Buffalo Creek Hollow communities of Pardee, Lorado, Lundale, Stowe, Crites, Latrobe, Robinette, Ashlandale, Brookdale, and...

# Regulatory Changes

- Government and Industry worked together to establish workable rules
- Coal refuse impoundments may not be retained as part of the post mining land use
- Engineering and Design Manual – Coal Refuse Disposal Facilities, 1975
- Many coal refuse impoundments modified

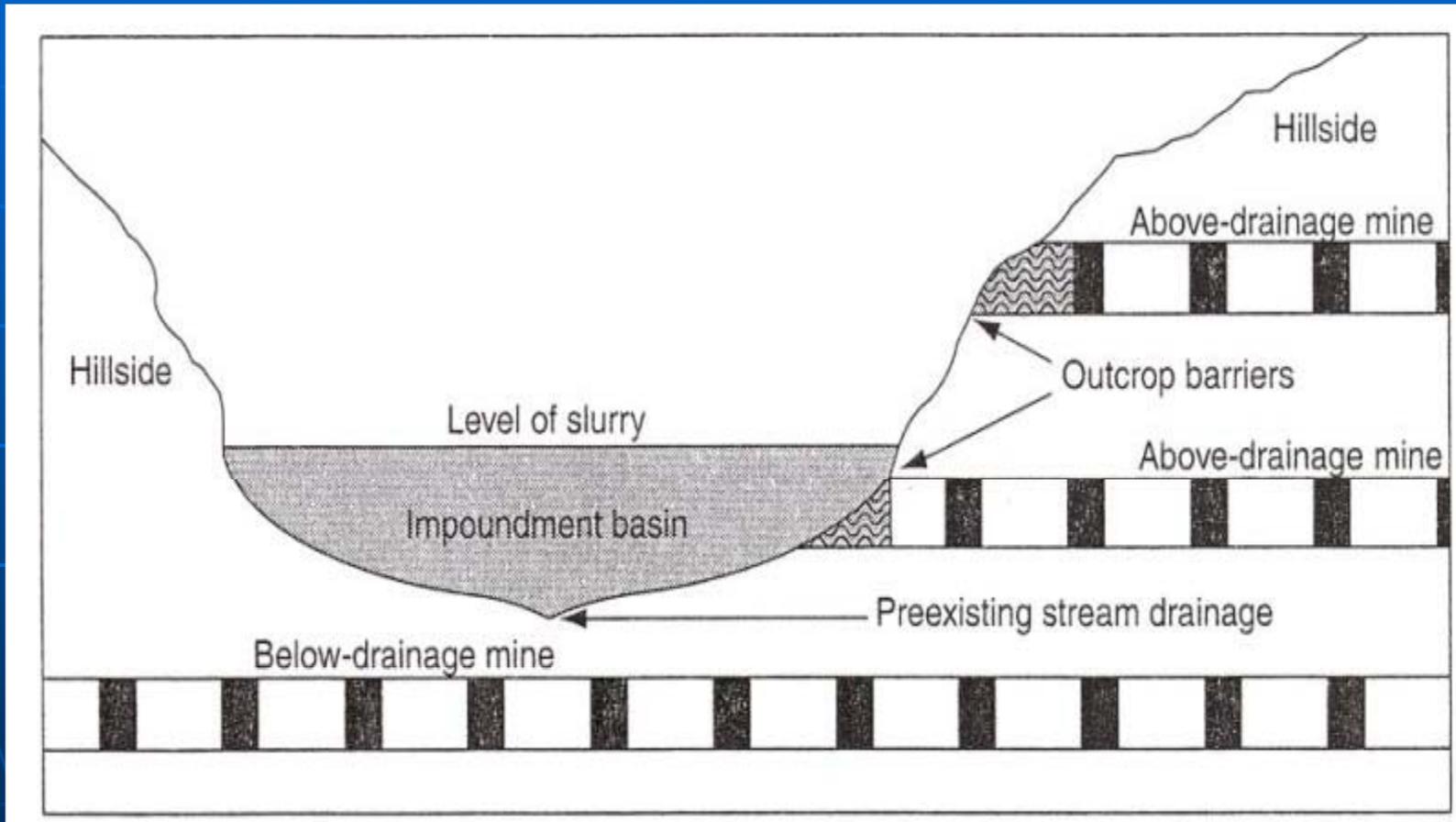
# Martin County, Kentucky

- 250 million gallons of coal refuse slurry are released from an impoundment, October 2000
- The embankment did not fail
- The coal refuse slurry flowed through adjacent underground mine workings

**Breakthrough  
Location**



# Impoundments and Adjacent Underground Mines



# EXPERIMENTAL PRACTICE

- Allows for documentation of potential success of innovative alternate mining and reclamation techniques
- Variances from performance standards are allowed so the alternate techniques can be evaluated
- To be successful it must be shown that the alternate technique is as least as environmentally protective and safe to the public as the performance standards

# Experimental Practice

- With Respect to Federal Regulations Must :
  - Be Technically Sound,
  - Protect the Environment, and
  - Provide for Public Safety



**WARNING**  
**AUTHORIZED  
PERSONNEL  
ONLY**

**DANGER**  
**NO  
TRESPASSING**

**STONE MINING COMPANY**  
P.O. Box 214  
Stone, KY 41567  
Grants Branch Refuse  
Disposal Facility  
DSMRE PER.# 898-9074  
MSHA INVENTORY 1211-KY60010-0  
MSHA I.D.# 15-05141

**WARNING**  
**EXPLOSIVES**  
DO NOT USE  
FOR UNAUTHORIZED  
PURPOSES

# Partners

- Office of Surface Mining (OSM)
- Mine Safety Health Administration (MSHA)
- Kentucky - Department of Surface Mining Reclamation and Enforcement (DSMRE), Department of Dam Safety (DDS) and the Department of Water (DOW)
- Stone Mining Coal Company
- Pike County Fiscal Court

# Grants Branch Slurry Impoundment 1993



# Downstream of Refuse Impoundment



# Impoundment Headwaters





# Permit Revision

- Experimental Practice to convert a coal slurry impoundment into a water resources recreational facility.
- Use an alternative reclamation plan to leave a permanent impoundment as part of the post mining land use.
- Total area is 165 acres.

# Two Years of Monitoring

## ■ Quarterly Progress Reports:

- Lake Water Level
- Surface Water
- Ground Water
- Coal Mine Discharges
- Embankment Integrity

# Lake Level Monitoring



# Emergency Spillway



# Site Work

- Establish Vegetation
- Construct Roads
- Install Electric and Water
- Caretaker's House
- Picnic Shelters
- Maintenance Building
- Fish Stocking

# Transfer of Ownership

- From Stone Mining Company to Pike County Fiscal Court
- Approvals needed from:
  - Office of Surface Mining
  - Mine Safety Health Administration
  - Kentucky - DSMRE

# Awards

- Office of Surface Mining - National Reclamation Award
- Kentucky Governor's Environmental Excellence Award
- Kentucky Coal Association's Reclamation Award

## Grants Branch Lake - Embankment



## Grants Branch Lake – Looking Upstream



## Grants Branch Lake – Community Center



# Grants Branch Recreation Lake Today



# Grants Branch Success Through Partnering

- Initial Variance Proposal - Coal Company and County
- Regulatory Experiment Consideration - OSM
- Other Regulators Cooperation - MSHA, Kentucky
- Construction Coordination – Coal Company and County
- Monitoring - Coal Company and Regulators
- Approval and Transfer - All Partners

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