

Anthracite Heritage Alliance

Watersheds, Heritage, and Culture

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AMD&ART



After the AMD leaves the final treatment pond, the now-clean or "legal" water is used to create the seven acres of new wetlands





Appalachian Coal Country Watershed Team

“The work of the Appalachian Coal Country Watershed Team supports a growing movement that is quietly bringing new strength and new hope to the Appalachian region. The Watershed Team arms community organizations and watershed-based projects with the training, tools, and volunteer support necessary to help local citizens become effective environmental stewards, community leaders, and accelerators of change in places indelibly marked by the environmental legacy of pre-regulatory coal mining.”

T. Allan Comp, ACCWT Founder and Director

What is the Anthracite Heritage Alliance?



The AHA is a partnership created in 2008 across Northeast Pennsylvania's Anthracite Coal Region consisting of National Heritage areas working together with local and regional watershed and conservation organizations, several corporations, state and federal agencies, the Appalachian Coal Country Watershed Team, and the Office of Surface Mining

Anthracite Heritage Alliance Partners

National Heritage Areas in Pennsylvania's Anthracite Coal Region

- Delaware & Lehigh National Heritage Corridor (D&LNHC)
- Lackawanna Heritage Valley Authority (LHVA)
- Schuylkill River National Heritage Area (SRHA)

Federal and State Partners

- Americorps VISTA
- Appalachian Coal Country Watershed Team (ACCWT)
- DCNR – Nescopeck Environmental Center
- DEP - Bureau of Abandoned Mine Reclamation (BAMR)
- Office of Surface Mining (OSM)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- Pennsylvania Department of Environmental Protection (DEP)
- United States Department of the Interior

Watershed and Conservation groups

- Carbon County Conservation District (CCCD)
- Eastern Middle Anthracite Regional Recovery (EMARR)
- Eastern PA Coalition For Abandoned Mine Reclamation (EPCAMR)
- Friends of the NESCOPECK (FON)
- Greater Hazleton Civic Partnership (GHCP)
- Greater Hazleton Rails to Trails (GHRT)
- Lackawanna County Conservation District (LCCD)
- Lackawanna River Corridor Association (LRCA)
- Luzerne Conservation District (LCD)
- Northumberland County Conservation District (NCCD)
- Schuylkill County Conservation District (SCCD)
- Schuylkill Headwaters Association (SHWA)
- Shamokin Creek Restoration Alliance (SCRA)
- Wildlands Conservancy (WC)

Corporations

- Pennsylvania Power and Light Company (PPL)

Core Goal #1

Build the capacity
of participating
organizations to
enable long-term
stability and success



Core Goal #2

Assist sponsor organizations in conducting the watershed research and water quality monitoring critical to future funding



Core Goal #3

Assist sponsor organizations in enhancing community awareness and involvement through education and outreach



Core Goal #4

Assist sponsor organizations in efforts of community revitalization through economic development projects, as well as those that celebrate and increase awareness and understanding of local history and culture



Core Goal #5

Assist the OSM/VISTA member and sponsor site to better prepare him or her to become a valuable Team member, broaden his or her ability to engage with watershed and community development issues, and enhance his or her opportunities for future employment





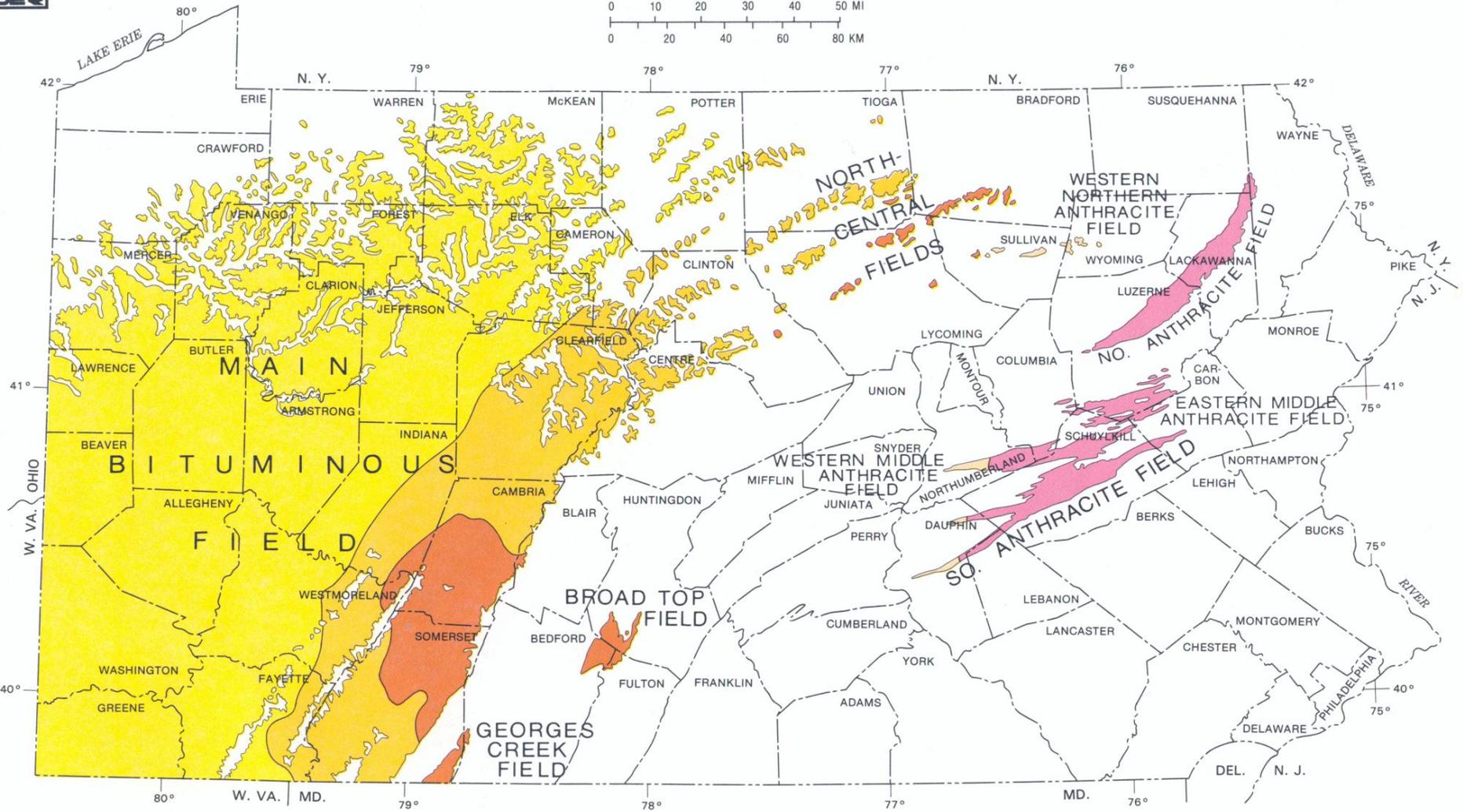
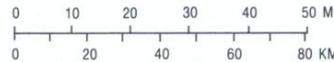
ACCWT Mission Statement

The ACCWT's overall mission is to combat poverty and provide average citizens with the assistance they need to make their own rural mining communities **cleaner, healthier, and safer** places to live and work

DISTRIBUTION OF PENNSYLVANIA COALS



SCALE 1:2,000,000



EXPLANATION

BITUMINOUS FIELDS



ANTHRACITE FIELDS



Hard Coal

Anthracite

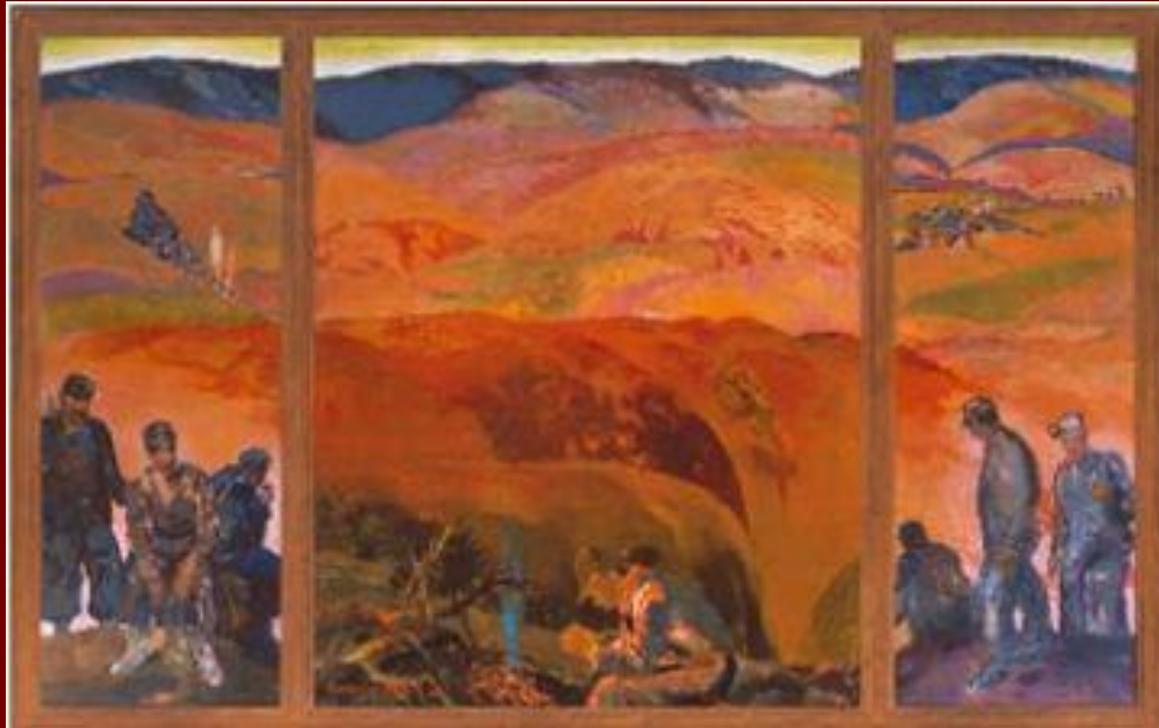
Stone Coal



Discovery of Anthracite



"Philip Ginder Discovers Coal at Summit Hill, Penna. 1791"



"Necho Allen Discovering Coal"
George Benjamin Luks

“If the world should take fire,
the Lehigh coal mine would
be the safest retreat, the last
place to burn.”



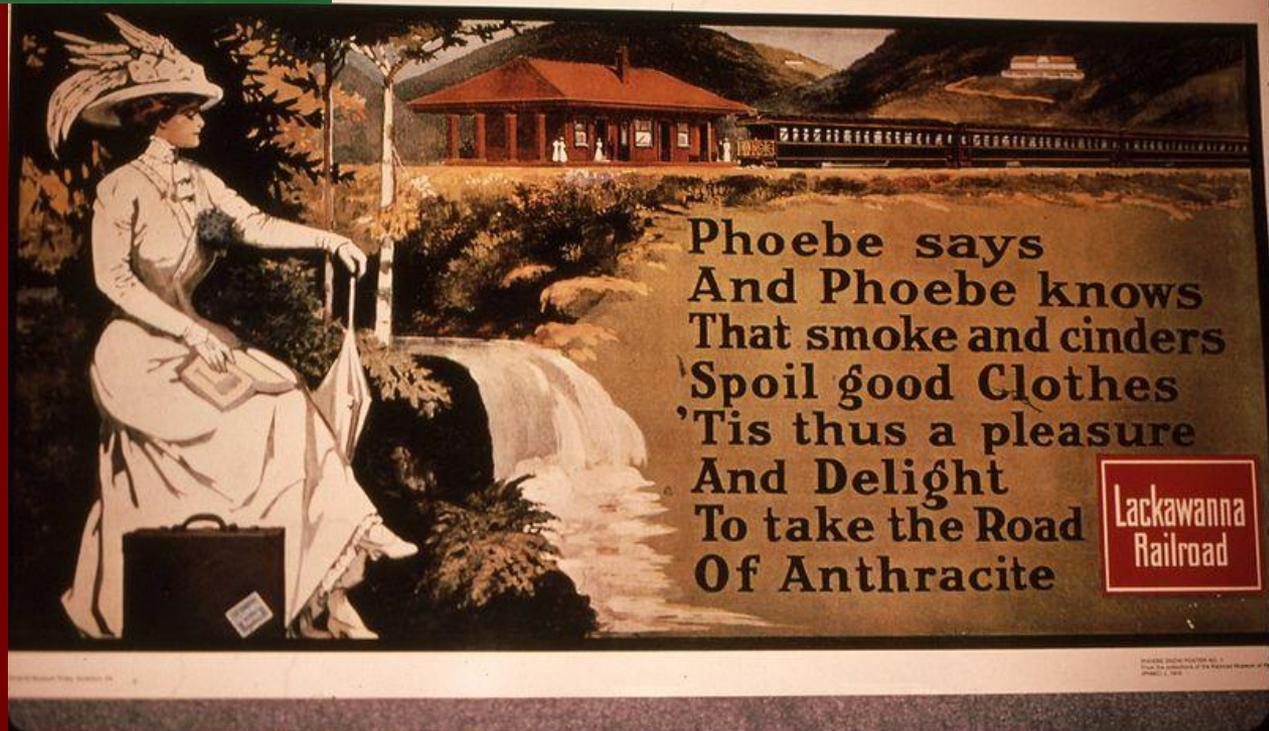
-Quoted in
The Kingdom of Coal

Marketing Anthracite



A cosy seat
A dainty treat
Make Phoebe's
Happiness complete
With linen white
And silver bright

**Lackawanna
Railroad** Upon the Road
Of Anthracite.

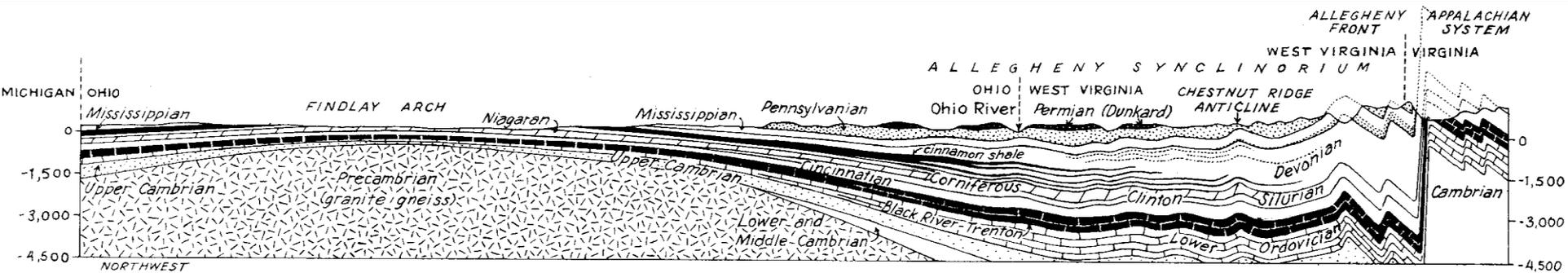


Phoebe says
And Phoebe knows
That smoke and cinders
Spoil good Clothes
'Tis thus a pleasure
And Delight
To take the Road
Of Anthracite

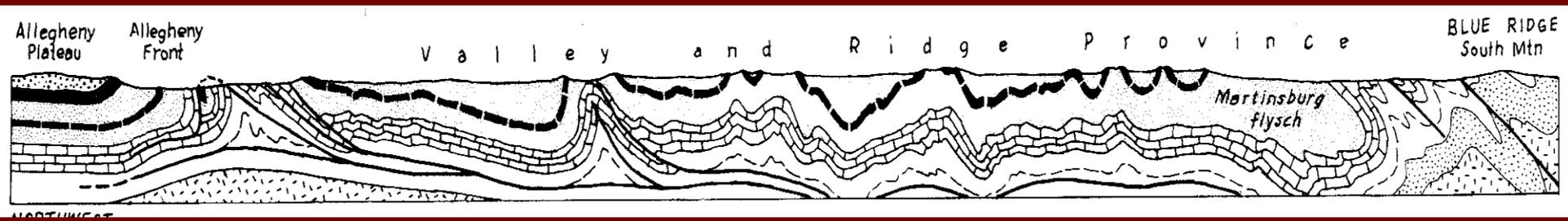
**Lackawanna
Railroad**

PHOEBE SAYS
AND PHOEBE KNOWS
THAT SMOKE AND CINDERS
SPOIL GOOD CLOTHES
'TIS THUS A PLEASURE
AND DELIGHT
TO TAKE THE ROAD
OF ANTHRACITE
LACKAWANNA RAILROAD
© 1900 THE LACKAWANNA RAILROAD COMPANY
PHILADELPHIA, PA.

Cross-section of the geologic structure of the Allegheny Plateau (from King 1977)



Cross-section of the geologic structure of the Ridge and Valley Province



Anthracite Schematic



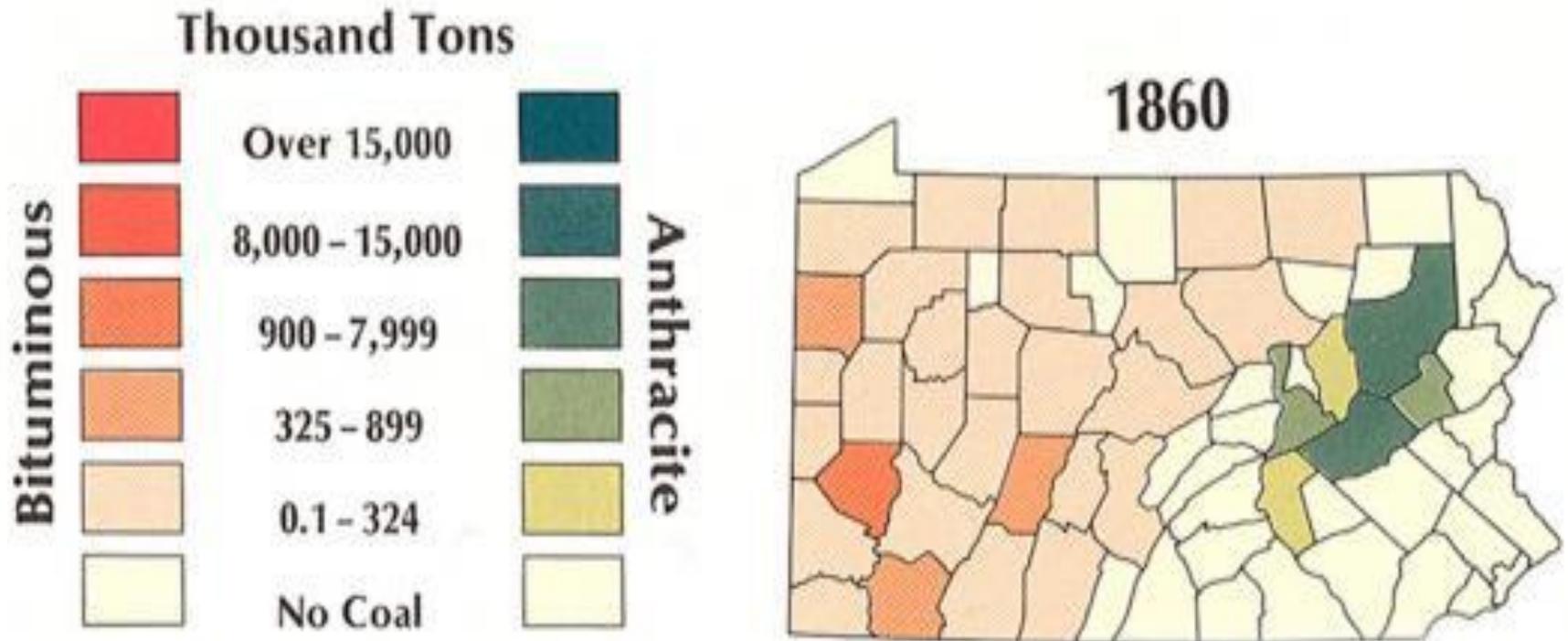


A Lackawanna County mine in 1915

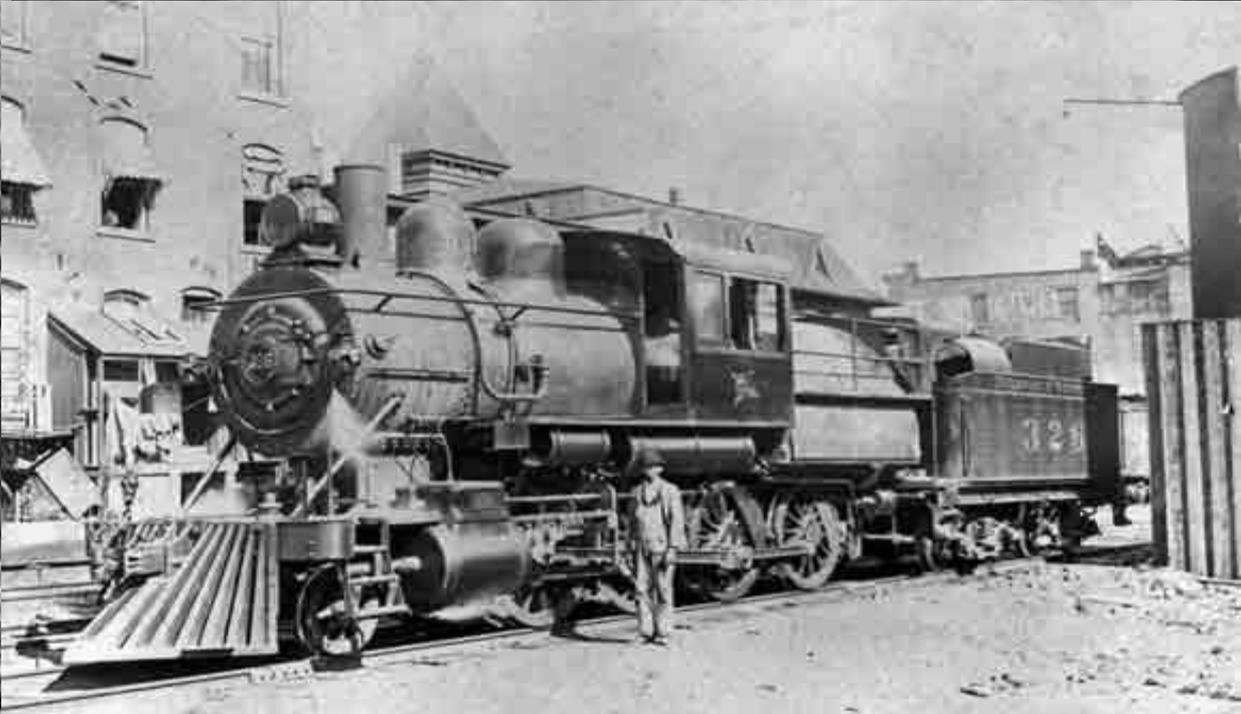
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74379

Amount of Coal Mined in 1860



Technological Advances



Communities and Immigrants

Immigrants, from 36 different nations migrated to escape:

- Political injustice
- Religious oppression
- Poverty
- War

Immigrants

- Most immigrants came with religious symbols, idols, statues, prayers, and bibles
- Many immigrants cried when they saw the Statue of Liberty at Ellis Island. They believed it was the statue of a saint.

Irish

- Between 1820 and 1860, the Irish constituted over one third of all immigrants to the United States
- Two-thirds of these Irish immigrants were Catholic.
- This trend peaked in 1840 when nearly half of all immigrants to the United States originated from Ireland.

Welsh

- 1840s and 1850s
- Welsh miners earned \$1.00 to \$1.50/ day
- Twice amount they would have earned in Wales

Italians

- 1880-1920
- Approximately 4 million Italian immigrants
- By 1890, Southern Italian immigrants began to outnumber Northern Italian immigrants

Russia

- 1896-1915
- Approximately 3 million immigrants from Russia
- 2/3 were Jewish
- 1/3 were Poles, Lithuanian, Latvians, Ukrainians, and Russo-Germans

Polish

- 1860-1914
- In 1911, 35% of income for Polish miner families in Scranton, PA came from the children of the family

Division Amongst the Workers

- Different ethnicities, religions and languages
- Coal operators encouraged these rifts to deter unions
- Disasters and the labor movement unified miners

Poor Working Conditions

- Boys as young as 6 would work in the mines
- False weight (1 ton could equal 4,000 lbs.)
- “Black Maria”
- 1869-1900 – 10,000 people died
- Until 1990s – 31,000 died

Mine Disasters

- Mine gas ignited in the Avondale colliery in Luzerne County in 1869, killing 110 people (led to the Mining Safety Law of 1870)
- 1896 – Twin Shaft Disaster, a cave-in killed 58 people



<http://explorepahistory.com/displayimage.php?storyId=11&imgId=1004>

NOTICE

IF YOU ARE INJURED NO MATTER HOW
LITTLE TELL YOUR FOREMAN ABOUT IT
RIGHT AWAY:

FIGYELMEZTETÉS

HA MEGSÉRULT, LEGYEN AZ BÁRMILYEN CSEKÉLY IS,
AZONNAL JELENTSE BE AZ ELMUNKÁSÁNÁL.

AVVERTENZA

SE VI SIETE FATTO MALE, ANCHE SE LEGGERMENTE
DITELO SUBITO AL VOSTRO FOREMAN.

OBJAVA

AKO SI MA I NAJMANJE OZLIJEDJEN KAŽI TO ODMAH
TVOMU NADSTOJNIKU (FORMANU).

POZOR

AKO SE POŠKODUJETE, ČE TUDI LE MALO, PVEJTE
TAKOJ SVOMU FORMANU.

BACZNOŚĆ

JEZELI ZOSTANIESZ POKALECZONYM, NIE ROBI
RÓŻNICY JAK TRYWIALNIE, DAJ ZNAĆ NATYCHMIAST
O TEM FORMANOWI.

Molly Maguires

The Molly Maguires were members of a secret Irish organization. Many historians believe the “Mollies” were present in the anthracite coal fields of NEPA from approximately the time of the American Civil War until 1878.

Molly Maguires

There is little doubt that some Irish miners conspired to resist their exploitative conditions, however, the trusts seem to have focused almost exclusively on the Molly Maguires for criminal prosecution. This may be a consequence of Irish miners acting as the core militant union activism during a bitter strike provoked by twenty percent wage reduction.

Molly Maguires

The Molly Maguires would taunt the coal mining bosses by leaving a note on the door of his home or office. The note would either have "This is your home" written on it with a picture of a coffin or simply just have a picture of a pistol or sometimes both.

Molly Maguires

Between 1865 and 1876, after years of murders and beatings, it was recorded that many coal mining bosses were seen leaving their homes in the morning with one hand on their pistol.

Molly Maguires

Molly history is sometimes presented as the prosecution of an underground movement that was motivated by personal vendettas and sometimes as a struggles between organized labor and powerful industrial forces. Whether membership in the Molly Maguires overlapped union membership is open to discussion. Much is uncertain, the Molly Maguires left virtually no evidence of their existence and nearly everything we know about them was written by biased contemporary observers.

Lattimer Massacre

On September 1, 1897 workers throughout Northeast Pennsylvania began to strike. Demonstrators walked from mine to mine, shutting down mining operations and adding strikers to their march. By midweek, the strike had swelled to 10,000 miners. Mine owners, in order to protect their land, demanded help from the Luzerne County Sheriff.

Lattimer Massacre

Sheriff James Martin declared a state of civil disorder. This allowed him to deputize a posse of 87 armed men.

The posse was ordered to "use whatever means necessary to quell the strikers."

Lattimer Massacre

On September 10, 1897, approximately 400 strikers were on their way to shut down the A.D. Pardee & Co. Colliery at Lattimer. The marchers were met by the sheriff and several deputies along their route. While Sheriff Martin read a proclamation banning demonstrators in his county, he had his pistol pointed at the head of a miner. The deputies beat the unarmed strikers, breaking one man's arm with the butt of his rifle. But the march continued.

Lattimer Massacre

When the miners reached Lattimer, they were again met by the sheriff and a semicircle of about 60 armed deputies. After the sheriff's orders to disperse were ignored, an unidentified member of the posse yelled, "Fire!" and "Give two or three shots!"

The posse opened fire killing...

-19 miners- Fourteen Poles, four Slovaks, and one Lithuanian.

-40 more were wounding.

-6 more later died from their wounds.

John Mitchell

- Urged miners to forget their differences, brought new spirit

“The coal you dig isn’t Slavic or Polish or Irish, it’s coal.”



Strike of 1902

- Lasted 5 months
- Demands: shorter hours, higher wages, union recognition
- Estimated that 95% of the 148,141 miners at that time were involved
- Price of anthracite soared to \$20/ton



End of the Strike

- Theodore Roosevelt's interference
- Anthracite Coal Strike commission
- Won board to handle disputes, a 10% wage increase and a nine hour day

Evidence Today

■ Source of Pride

-Festivals

-Ethnic Restaurants

-Small communities

-Churches and religion

The Decline of Anthracite



Whirlpool streaming into the Knox Mine
Courtesy: Wyoming Historical & Geological Society

The Rise and Fall of Anthracite

Employees

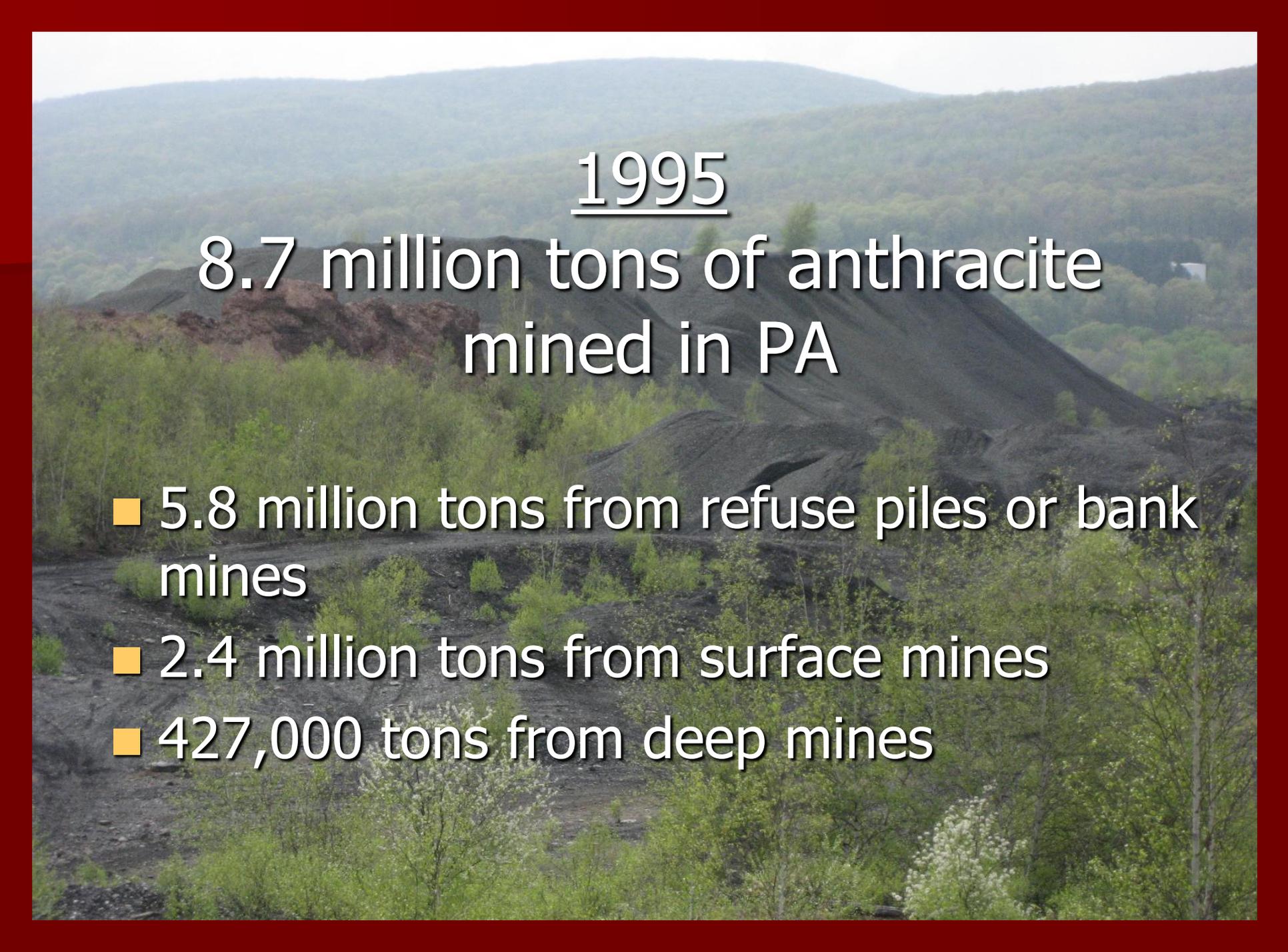
- 1914 – 180,000
- 1990s – 2,000

Production

- 1917 – 100 million tons
- 1950 – 46 million tons
- 1987 – 5.2 million tons
- 1980s – 1% nations coal & 7% PA's production



PHOTO COURTESY WYOMING HISTORICAL AND GEOLOGICAL SOCIETY



1995

8.7 million tons of anthracite
mined in PA

- 5.8 million tons from refuse piles or bank mines
- 2.4 million tons from surface mines
- 427,000 tons from deep mines

THE CHILDREN OF MINE WORKERS

“The children of mine employees are to-day raised among surroundings that are dismal and dreary. The huge culm and rock heaps, polluted streams, bare and barren hills, cave-ins and strippings, make up the landscape which greets the eyes of these thousands, and if they are polluted in mind and body we need not be surprised. Man can turn a wilderness into a garden, but it needs intelligence and forethought. In these regions hardly a spot can be found in the villages and towns that is not cursed.”

Peter Roberts, *Anthracite Coal Communities*, 1904

Though it gave work to many
men

With families to keep
It could take their health or
life

Sometimes, coal's price was
steep'.

'But valley life is different
now.

In some ways it is sad.
There isn't the community
“ That I knew as a lad

When men from almost every
home

Became one family
As they all worked together
In that colliery.

Excerpt from
“What is a
Colliery” by
Pamela Evans

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The Watershed Approach: How It Works For You

OSM/VISTA Appalachian Coal
Country Watershed Team

Adam Cotchen

Michael Myers

Kathryn Krulack

Kathryn Coulter

Clean Water Act (CWA)

- Regulatory and non-regulatory tools to:
 - Reduce direct pollutant discharges
 - Finance wastewater treatment facilities
 - Manage polluted runoff
- Goal: “Fishable” and “Swimmable”
 - Restore and maintain chemical, physical, and biological integrity of the nations waters
 - “the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water”

Key CWA Elements

- **Water Quality Standards (WQS)**
 - Designated uses, WQ Criteria, Antidegradation
- **Antidegradation**
 - Policy to prevent deterioration of existing WQ levels
- **Ambient Monitoring**
 - Chemical, Physical, and Biological analyses of conditions in aquatic environment
 - 305(b)- National Water Quality Inventory
 - 303(d)- Threatened and Impaired Waters List
- **Total Maximum Daily Loads (TMDLs)**
 - Amount of pollution a waterbody can receive and still meet WQS

Key CWA Tools

- **Section 402 NPDES permit program**
 - Point source pollution discharges
- **Section 319**
 - Non-point source pollution
- **Section 404**
 - Fill or dredge materials into a waterbody
- **Section 401**
 - WQS certification
- **Clean Water State Revolving Fund (CWSRF)**

CWA Big Picture

Set Goals and Water Quality Standards (WQS)

Conduct Monitoring

303(d)

No

Meeting WQS?

Yes

Develop Strategies and Controls (Total Maximum Daily Loads-TMDLs)

Apply Antidegradation

Implement Strategies

NPDES

Section 401

Section 319

Section 404

State Revolving Fund (SRF)

Source: EPA Watershed Academy – www.epa.gov/watertrain/cwa

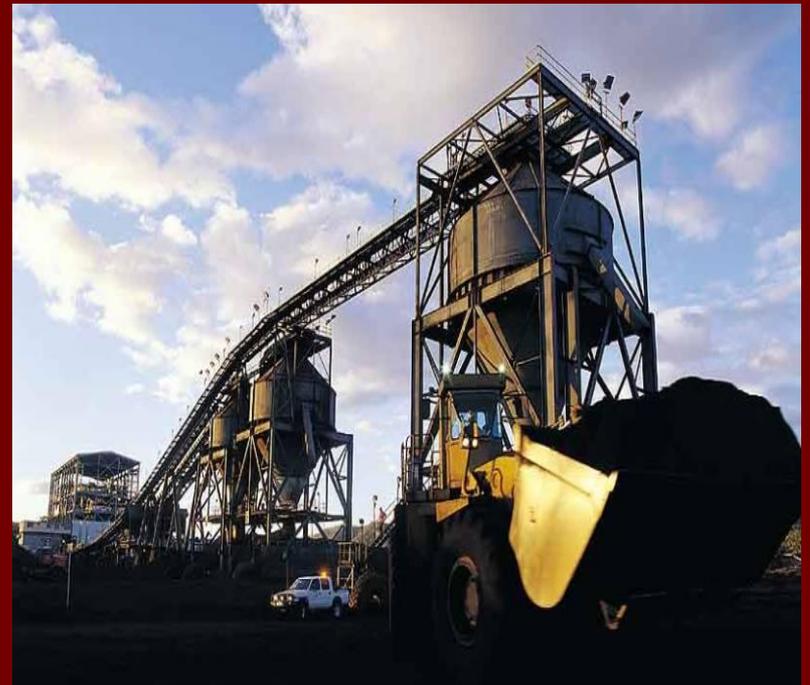
Surface Mining Control and Reclamation Act

- Established in 1977, it is the primary federal law which regulates coal mining in the U.S.



Coal Mines; Yamhill County, Oregon.

<http://www.co.yamhill.or.us/pics/Yamhill/Coal%20Mine.jpg>



http://www.leighton.com.au/verve/_resources/TPL_BurtonCoalMine13.jpg

Regulative Bodies of SMCRA

- Regulates current mining
- Establishes guidelines for reclamation of abandoned mine lands



<http://www.oldforgecoalmine.com/1940%20PHOTO%20KEHOE%20BERGE%20BREAKER%20MINE%20INSPECTORS.jpg>



http://www.safemining.com.au/Uploads/PressReleases/safemine/Images-20090414/safety_news.jpg

Five Parts of SMCRA

- Standards of Performance
- Permitting
- Bonding
- Inspection and Enforcement
- Land Restrictions

Abandoned Mine Land Fund

- Used to clean up abandoned sites pre-1977.



AML Fund Cont.

- Funded by a Tax Placed on Active Mining Operations.
- 1/2 of monies go to the AML Fund, the remaining funds OSM use in Emergencies.

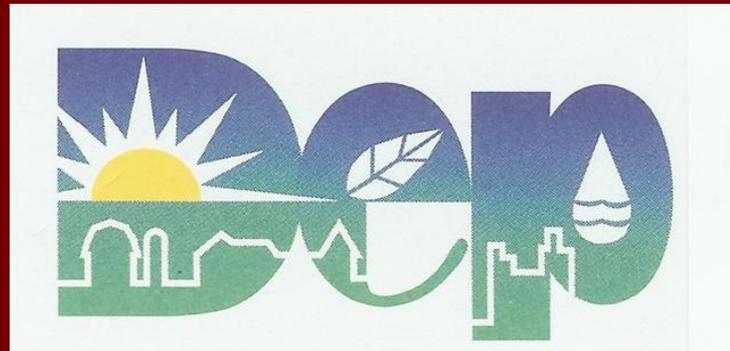


Regulatory Authority

- The Office of Surface Mining is head of establishing guidelines on current mining.
- Power is then passed down to states with approved programs to enforce regulation.



http://upload.wikimedia.org/wikipedia/commons/9/9e/O SM_Logo_Metal_RGB_1.5in.gif



[http://www.achoicehomeinspection.com/a%20DEP%20Logo%20\(Small\).jpg](http://www.achoicehomeinspection.com/a%20DEP%20Logo%20(Small).jpg)

The Goal Of SMCRA

- Where there is usable surface water and/or ground water resources, they should be quantitatively and qualitatively suitable for post mining land use.

Senate and House of Representatives

- Senate stated 'restoring recharge capacity of the mined area to approximate pre-mining conditions'.
- House stated 'restoring recharge capacity of the aquifer at the mine site to approximate pre-mining conditions'.

Congress did not define 'recharge capacity'

- 3 problems were associated with this term
 - Ground water not surface
 - Quantity not Quality
 - Prevent a less capacity, no indication of increased capacity

Chapter 86, 87, and 88

- 86 – Deals with the permits, pre-mining
 - Different modules address different environmental aspects
 - They will not issue a permit if they know it will cause pollution
- 87- Deals with Bituminous coal mining
 - If a mining company starts to mine they have to establish a trust fund
- 88 – Deals with Anthracite coal mining

Chapter 88

■ General water supply

– Any existing, planned, or designated source of water for human consumption, agriculture, commercial or other uses must complete a water supply survey which includes:

- Location, type and use of water supply
- Chemical and physical characteristics
- Quantity
- Physical description
- Hydrologic data

- Also Chapter 88 states that vegetation shall be established on all land affected by bank removal and reclamation activities.

Water and AMD

- SMCRA states that one should minimize the disturbance to the hydrologic balance, quality and quantity of the water supply both during mining and reclamation.
 - Avoiding all mine drainage by:
 - Preventing or removing water from contact with toxic producing deposits
 - Treating mine drainage to reduce toxic content which adversely affects downstream water upon being released to water courses.
 - Casing, sealing or otherwise managing boreholes, shafts and wells and keep acid or other mine drainage from entering ground or surface waters

When funds become available, organizations emerge.

- Clean Water Act Section 319 funds
 - PA: Bureau of Watershed Management
 - Local matches



- Office of Surface Mining SMCRA set aside program



Goals of the 1994 Appalachian Clean Streams Initiative

- Develop State, local and Federal partnerships to clean up AMD using watershed-based planning efforts and focusing the energies of all involved.
- Increase information exchanges among State, local and Federal government agencies that are working on AMD remediation.

Building a new heritage with watershed groups

- They are essential to watershed resource management
 - Volunteers on the ground, collecting data, becoming experts on the specifics of their watershed
 - Help build strong, grassroots environmental coalitions
- They support:
 - Restoration of waterways and their ecosystems
 - Return of fish to streams
 - Water resources
 - Community development generally

Watershed Cooperative Agreement Program

- Funded via cooperative agreements under the Clean Streams Program, OSM assists local nonprofits to receive funding for AMD remediation
 - 1999-2007: OSM awarded 141 cooperative agreements and amendments worth \$12,468,665.
- Leads to innovative initiatives like the OSM/VISTA initiative via the Appalachian Coal Country Watershed Team



An OSM/VISTA Initiative

Spring 2009

ACCWT: An OSM/VISTA Initiative

There are over 36 OSM/VISTAs serving across 8 Appalachian Coal Country states. Together, the Team and its local partners are propelling a new Appalachian economy based on conservation and development, strong partnerships, and new hope.

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