
Pennsylvania's Re-mining And Reclamation Incentives

**Can They Play a Role in
Restoring Your
Watershed?**

GOALS

- Identify the types of remining and reclamation incentives available
 - Explain the application of each one
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What Is Re-mining?

- Mining that restores and reclaims abandoned mine features in the normal course of mineral removal and site reclamation.
 - Some re-mining and reclamation incentives now go beyond this.
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Why Does Pennsylvania DEP Have a Program of Re-mining Incentives?

1. We have a daunting task in this state to correct all the abandoned mine problems out there—need all the help we can get.
 2. Providing incentives for re-mining makes previously mined areas relatively more attractive to the mining industry compared to unmined areas.
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Brownfields versus Greenfields Issue



What Types Of Issues Can Re-mining Address?

- Physical Problems--Backfilling of pits, elimination of dangerous highwalls and impoundments, grading and vegetating abandoned spoil, eliminating subsidence features, sealing of abandoned deep mine entries, hauling away refuse, restoring land uses
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What Types Of Issues Can Re-mining Address?

- Water-Related Problems: Restoring drainage patterns, limiting infiltration into abandoned deep mines, restoring stream channels, eliminating mine voids, covering of acid-producing material, adding alkaline material, passive treatment
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Pennsylvania Has Been A National Leader At Encouraging Abandoned Mine Reclamation Through Re-mining

1. We had the first program to lessen disincentives for addressing abandoned mine discharges through re-mining (Subchapter F-1984)
 2. First program for using no-cost contracts to address abandoned mine lands (GFCC's).
 3. An active program for underwriting reclamation bonds for abandoned mine lands
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What Re-mining And Reclamation Incentives Are Available?

1. Subchapter F and G Permits—Addresses Pre-existing Pollution
 2. Flexible Reclamation Standards
 3. Financial Guarantees (State Bonding and Fee Waiver)
 4. Bond Credits
 5. Beneficial Use of Materials
 6. Government Financed Construction Contracts (GFCC's)
 7. Growing Greener II Projects
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Philosophical Note

If it's a good idea, why not just let them do it?

- The Law is Often a Double-Edged Sword
 - Coal Mining Laws & Regulations Are Tight on Permit Requirements
 - Laws & Regulations Often Seek to Balance Competing Interests
 - Even The Most Benign-Looking Projects May Irritate A Neighbor, A Competing Company, Or Someone Else
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I. Subchapter F (Bituminous) and G (Anthracite)

- Provides for Alternant Effluent Limits for Pre-Existing Polluting Discharges in exchange for completing an Abatement Plan that represents Best Technology.
 - Prior to Subchapter F, an entity that permitted a site with existing polluting discharges became legally responsible for treating those discharges to standard effluent limits forever.
 - Caused mining companies to avoid areas with bad water in favor of areas with clean water.
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Key Requirements For A Site To Qualify

- Must have polluting discharge(s) of an AMD-character on or hydrologically connected to the site
 - Must have an abatement plan representing Best Technology that convinces DEP the discharges are likely to be improved
 - Must demonstrate that it is not economical to mine, do the abatement plan *and* treat to standard effluent limits
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Other (Dis)Qualifiers

- The applicant or related entity cannot already have legal responsibility for the discharge(s)
 - The proposal can't interfere with another entity's responsibility for the discharge(s)
 - All permitting requirements for regular mine permits must be met
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If The Site Qualifies:

- Then the effluent limits for the existing discharges are based on the baseline load data (requires extensive pre-permit monitoring)
 - Permittee does not inherit responsibility for the discharges unless they become further degraded, provided the approved abatement plan is carried out
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Has Chapter F Been Successful?

YES!!!!

- 1999 Study By Smith, Brady and Hawkins Looked At 248 Discharges on 199 Sub-F sites:
 - Nearly half of the discharges were eliminated or improved
 - Most of the remainder were unchanged
 - Between 1 and 10% worsened, depending on the parameter being considered
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More Findings Of 1999 Study:

- Manganese was most often the problem parameter when discharges worsened
 - In 1999 dollars the value of the acidity reductions documented was equivalent to over three million dollars per year in treatment costs—doesn't consider capital costs of setting up treatment
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II. Flexible Reclamation Standards

- Regrading does not necessarily have to be to approximate original contour
 - Lesser revegetation standards may be applicable in some cases, but is rarely invoked
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III. Re-mining Financial Guarantees

- The state will issue part of the reclamation bond for a site that is reclaiming abandoned mine lands
 - Has been very popular, especially with smaller operator's because of the difficulty of getting surety bonds
 - Has resulted in some operators going out of their way to reclaim some areas to qualify for the bond
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How Does A Mine Operator Qualify?

- Has to meet certain financial qualifications
 - Has to provide calculations showing the value of the reclamation that they are proposing—use the same process as we use for calculating the operator's reclamation bond
 - \$100,000.00 per site limit, \$300,000 per operator limit
 - Pays a premium of 1.5 % of the value of the bond each year—premium goes back into the fund to underwrite more bonds and to cover forfeitures
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IV. Beneficial Use of Materials Such As Biosolids and Coal Ash



Biosolids

- May have great benefits in restoring vegetation on abandoned mine lands with limited vegetation
 - Indirectly can aid water quality—healthy plant growth maximizes evapotranspiration at the expense of run off and infiltration
 - A good organic soil layer means more dissolved CO₂ in infiltrating groundwater, which can increase dissolution of alkaline materials
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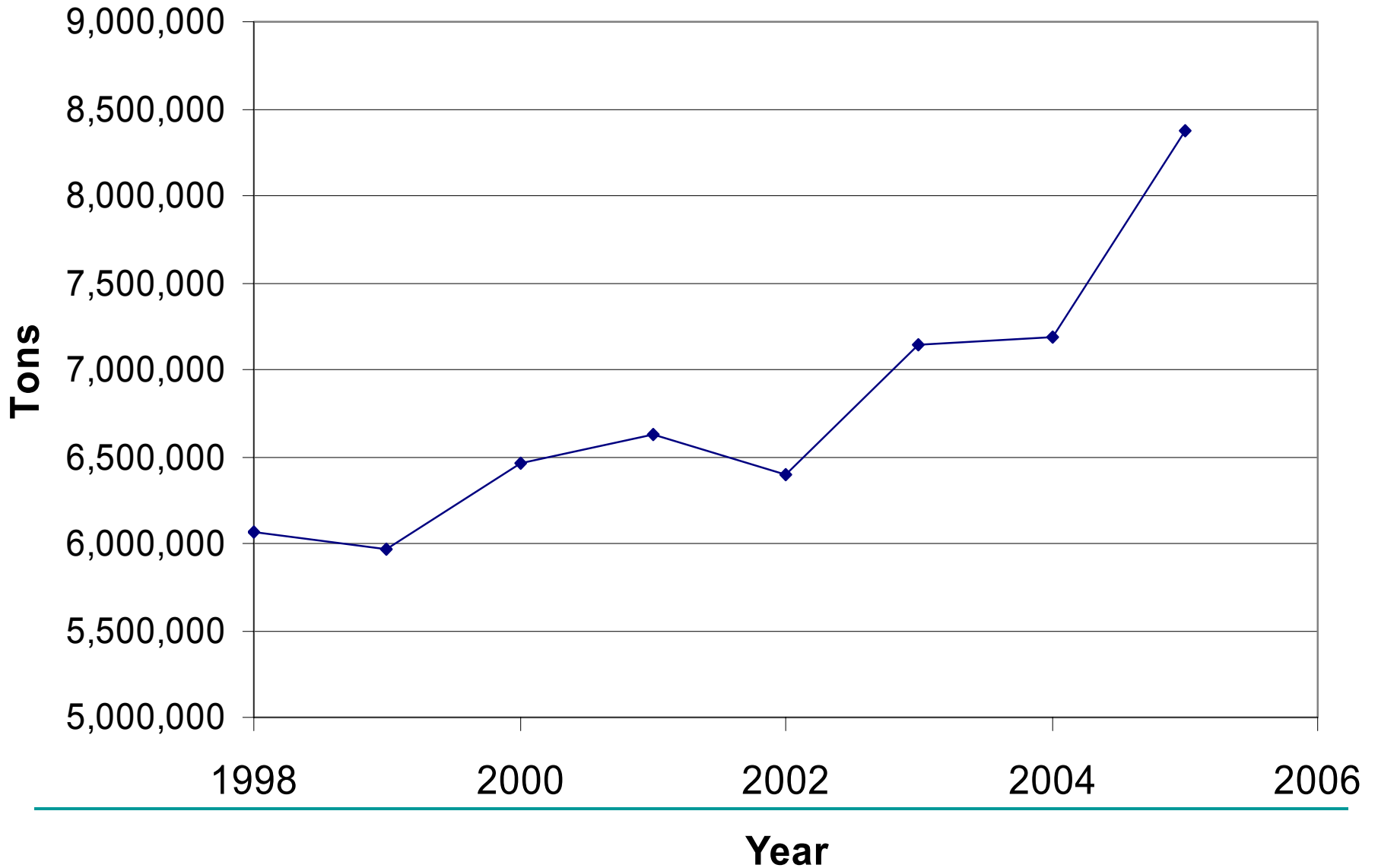
Stigmas Associated With Biosolids Has Limited Its Use

- Odor Problems
 - Fear of Pathogens
 - Fear of Water Quality Contaminants
 - Social Resistance to Importing
Another Community's Waste
 - Has Led to Limited Use in Many
Areas
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Coal Ash

- Has been widely used in Pennsylvania with some excellent results
 - Most coal ash beneficially used in Pennsylvania is FBC coal refuse ash, but large amounts of pulverized coal ash have also been used mostly in the Anthracite area and along the northern tier
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Tons Coal Ash Beneficially Used On Active Mines



What Is FBC Ash?

- Ash From a Fluidized Bed Combustor
 - Limestone Is Injected Into the Boiler With The Fuel To Capture Air Pollutants
 - Unreacted burnt lime results in an ash that is high in pH and alkaline
 - Also has cementitious qualities
 - This is the technology used in most waste coal power plants
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Types of Beneficial Use for Coal Ash

- Backfilling of pits—done primarily in the Anthracite Region, some BAMR projects
 - Low Permeability Material—some ashes have cementitious properties and can be used for capping or encapsulating
 - Alkaline Addition?
 - Soil Amendment or Substitute
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Can Be Especially Beneficial In Reclaiming Large Refuse Piles





Combined Flow and Pollutant Load Reductions from the Revloc 1 Discharges

Background Flow	68 GPM
Recent Flow	45 GPM
Background Acidity	2138 lbs/day
Recent Acidity	157 lbs/day
Background Aluminum	313 lbs/day
Recent Aluminum	18 lbs/day
Background Sulfate	2811 lbs/day
Recent Sulfate	576 lbs/day

Impact of Revloc Sites on South Branch: Downstream at SP-1 (Median Values)

	Flow gpm	pH su	Acidity mg/l	Fe mg/l	Mn mg/l	Al mg/l	SO ₄ mg/l
1988- 1991 Data	3261	4.3	134	1.61	1.03	21.0	191
2002- 2005 Data	3339	6.4	8	0.70	0.40	1.00	76

Other Project Accomplishments

- Extinguished a fire, eliminating a health hazard.
 - Restored about 6 miles of stream.
 - Converted millions of tons of waste into energy, preserving other energy resources.
 - Preserved mine reclamation monies for other projects.
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Controversies Surrounding Ash Use

- Fears Over Heavy Metals
 - National Issue Over “Damage Cases”
 - National Academy Study Recommended:
 1. --Coal Ash Use At Mine Sites Should Continue to Be Regulated By Mining Agencies Rather Than EPA and State Waste Agencies
 2. --National Regulations are Needed to Promote Consistency and Quality Assurance in the State Regulatory Programs. OSM Working on These Draft Regulations Now
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VI. Government Financed Construction Projects (GFCC's)

- Do They Still Exist???
 - Yes, But For How Long?????
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The Current Problem

- During Reauthorization Of Mine Reclamation Funding SMCRA Language Was Changed In A Way That Would Prohibit of Spending AML Money In Support Of Most GFCC's. (Due to Perceived Abuses?)
 - Federal (OSM) Draft Regs. That Will Come Out In September Will Attempt To Maintain The Program In Some Form—No One Can Predict The Ultimate Outcome
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The Concept

- Allows Limited Coal Removal Under A Reclamation Contract Rather Than A Permit
 - Coal Removal Must Be Incidental to Reclamation
 - “Government Financed” In Terms of Administrative Costs—Value of the Coal Provides the Reclamation Financing
 - Economic Information Must Show That Profit is Not A “Windfall” And That A Permit Is Not Economically Justifiable
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Types of Projects That Work As GFCC's

- Many Coal Refuse Reprocessing Sites
 - Reclamation of Abandoned Highwalls—
Limited to One Cut
 - Removal Of Crop Coal From Under
Abandoned Spoil
 - Daylighting of Abandoned Deep Mines
Where There Is Substantial Surface
Subsidence
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Advantages Of GFCC's

- Cost Less Than a Permit to Obtain So Facilitates Re-mining of Areas Where A Permit Would Not Be Cost Effective
 - Generally Can Be Brought Together More Quickly Than A Permit
 - Accomplishes Abandoned Mine Reclamation Without Consuming Scarce Grant Resources
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Limitations of GFCC's

- Limited to Relatively Small Projects
 - It Is A Contract, So Must Be Completed Once Started—Operator Must Be Certain of Site Economics Before Starting
 - Still Have Significant Costs Associated With Them So Smaller Projects, Such As Small Refuse Piles, Are Not Economically Viable Under GFCC's
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Enter The Small-Project GFCC

- Recently Created
 - Limited to Small Refuse Piles
 - Trimmed Down Application Requirements To Cut Application Costs
 - Must Meet All Other GFCC Criteria, And Must Be Completed in Less Than Six Months
 - Still Have Some Preparation Costs So Probably Won't Work For The Smallest Piles
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VII. Growing Greener II Projects

- The Concept Is To Use Some Growing Greener II Monies to Help Finance Re-mining And Reclamation Projects Where The Cost Of Completing The Reclamation And Abating The Problem Exceeds The Return From Extracting The Remaining Coal
 - \$4,000,000.00 From G2 Have Been Made Available
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Major Elements Of The Program

- Will Be Used On Sites Where Activity Is Directed Toward the Abatement of Water Quality Problems—Not Just Physical Reclamation
 - The Discharge(s) Need To Be Eliminated Or Significantly Improved
 - Can't Be Used to Construct Treatment Systems Unless Other Money Is Available To Maintain The Systems—Can't Be Used For O&M.
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Three Types Of Projects That May Qualify

- Construction Of Treatment Systems On Primacy Bond Forfeiture Sites Where Bond Money Could Pay O&M
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G2 Remining and Reclamation Options

- Surface Mine Subchapter F Permits Where Significant Gain Can Be Had By Completing Reclamation/Abatement Activities That Extend Beyond Normal Requirements And Site Economics
 - GFCC Reclamation Projects Where Significant Gain Can Be Had By Completing Reclamation/Abatement Activities That Extend Beyond Normal Requirements And Site Economics
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The Process

- Can Be Initiated With The Local District Mining Office In Conjunction With A Watershed Group And Mining Company
 - Normal Growing Greener Approval Process Still Must Be Followed—Must Go Through the Grants Center and Be Approved By The Governor's Office
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Example Project

- Babb Creek—Rattler Run, Tioga County
 - Being Considered By DEP Moshannon Office in Conjunction With A Local Watershed Group
 - Project Would Re-mine Most Of An Abandoned Deep Mine Eliminating Voids Contributing To A Significant Discharge
 - Because of High Overburden Cover and the Need For Large Amounts Of Alkaline Addition, The Project Is Not Economically Viable As A Re-mining Project Without Some Financial Help
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Some Things That Make Rattler Run A Potentially Good Project

- Coal Reserves Would Pay For A Substantial Amount Of The Project
 - Abating Or Greatly Improving The Discharge In Question Would Lead To A Substantial Improvement In Stream Quality
 - Means That There Would Be “Lots Of Bang For The Growing Greener Buck”
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Some Things To Remember About Any Type Of Re-mining Project

- Must Be Done In Partnership With Mineral And Surface Property Owners
 - Economics Will Be a Major Factor In Determining If The Project Happens
 - Conditions On Some Sites May Preclude Re-mining As A Viable Option—Never Say It Can't Get Any Worse—It Can.
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But: Re-mining Has Successfully
Addressed Many Abandoned Mine
Problems In Pennsylvania

- **Can It Work In Your
Watershed?**



Questions??
