

The State of Ash Reclassification and Beneficial Use

By
Gary Merritt

Regulation of Power Plant Wastes

- Until RCRA, the Management of Power Plant Waste (PPW) was a hit or miss proposition.
- Some States had the ability to regulate PPW, other did not. (i.e., Pennsylvania)
- With RCRA, the State Programs were given the ability to manage their wastes.

RCRA

- The Bevil Amendment to RCRA required EPA to complete studies of large volume wastes and report to Congress on the wastes and a Regulatory Determination as to how the waste will be managed.

Bevil Studies

- First Report to Congress on Managing Coal Combustion Wastes from PC Boilers
- Cement Kiln Dust Management
- Second Report to Congress on Managing Coal Combustion Wastes from other Boilers, including CFB Units.
- The Regulatory Determination to Regulate Coal Combustion Wastes under Subtitle D not Subtitle C.

EPA Findings

- It was indicated that EPA had planned to regulate Coal Combustion Byproducts under Subtitle C similarly to the Cement Kiln Dust Determination.
- An intense effort was made to point out to EPA the error of their ways.
- EPA modified its position and stated it would regulate CCBs under Subtitle D.

EPA Findings

- EPA indicated that it would promulgate rules under Subtitle D similar to its rule makings on Municipal and Residual Wastes.
- EPA even proposed a two part schedule for rule making. The schedule continued to slip, became one rule making and is still under review.

Environmental Organizations

- The Environmental Groups filed a law suit requesting a review of EPA's Regulatory Determination.
- The Law Suit was dismissed on ripeness. The Court indicated that the Groups could appeal the final rule making.
- **NO RULE ---- NO COURT ACTION**

Ongoing EPA Actions Regarding Mine Fills

- EPA contract with the States through the IMCC to evaluate how the States were managing the placement of CCBs in mines.
- The Group was comprised of representatives of the State Solid Waste Management Programs and Mining Programs, EPA and OSMRE.

EPA-Mine Fills

- Formed a Group called MRAM to review data and discuss issues concerning mine placement.
- EPA was attempting to develop a matrix to evaluate each mine site and make determinations on the impact of waste management on water resources and mine land reclamation.

Minefill Risk Assessment/Modeling MRAM

- Issues to examine included but were not limited to:

Type of mining activity

Should one look at only coal or other types of mineral mining?

Could a decision matrix be developed to address siting issues and insure proper placement of CCBs

MRAM

MRAM examined

characteristics of the product waste themselves

site and spoil characteristics

whatever groundwater data may exist on any site where placement is occurring or has occurred

MRAM

- **EPA proposed the concept of a matrix as a permitting/sitting decision-making tool that is being developed.**
- **A Clean Air Task Force Representative and their Consultants proposed that the criteria for determining damage cases should be reopened.**

Risk Factors, Risk Categories, and Risk Values for Estimating the Groundwater Transport Risk associated with the Placement of FFC Products in Mines

Risk Factors	Risk Categories (value rating)		
	High (5)	Medium (3)	Low (1)
Groundwater Velocity (V)	$V > 10^{-3}$ cm/sec	$10^{-6} < V < 10^{-3}$ cm/sec	$V < 10^{-6}$ cm/sec
Saturation	saturated	fluctuating	unsaturated
FFC Product			
Hydraulic Conductivity (k)	$k > 10^{-3}$ cm/sec	$10^{-6} < k < 10^{-3}$ cm/sec	$k < 10^{-6}$ cm/sec
Change in Groundwater Chemistry (If cumulative score above <5 use SPLP, otherwise use MWLP)	negative	neutral	positive
Distribution Constants Kd	$K_d < 5$	$5 < K_d < 15$	$K_d > 15$
Contaminants of Concern			
Acid-Base Account (NNP) For Backfilled Mine	$NNP > -1\%$ $NNP > 10\%$	$-1\% < NNP < 3\%$ $5\% < NNP < 10\%$	$3\% < NNP < 5\%$

EPA Stakeholders Meeting

- EPA has a 2-day meeting comprised of representatives of
 - Environmental Organizations
 - State Regulators
 - Industry
 - EPA/OSM

Stakeholder's Summary

- Issues Identified included
 - **Waste Characterization/Impact of New Clean Air Act Requirements**
 - **Placement in Ground Water, Barriers, and Liners**
 - **Ground-Water Monitoring**

Summary

- **Corrective Action**
- **Final Assurance, Post-Closure Care, Post-Closure Restrictions**
- **Effectiveness in Treating AMD**

Summary

- **Regulatory system**

Waste Characterization/Impact of New Clean Air Act Requirements

- Impact of Air Quality Rules on reducing Mercury Emissions
- What leachate test should be used?
- Relationship of leaching data to physical characteristics of the material.
- Correlating field results to lab results

Placement in Ground Water, Barriers, and Liners

- Generally, No Placement in Groundwater
- Leaching characteristics determine acceptability for mine placement or other beneficial use or the requirement to use a liner.
- Different types of mining operations may have a greater impact on CCB placement

Ground-Water Monitoring

- Well Placement
- Well Design
- Number
- Frequency
- Duration

Corrective Action

- Who is responsible?
- How much cleanup is required?
- When do you know your done?
- What are the trigger levels?

Final Assurance, Post-Closure Care, Post-Closure Restrictions

- Adequacy of Bonding
- Longer Term Bond Coverage
- Post Closure Restrictions and notifications

Effectiveness in Treating AMD

- Treating Mine Drainage
- Or, Preventing Mine Drainage by controlling its production
- Need to look at mine collapse issues too

Regulatory system

- Subtitle D Vs Subtitle C
- EPA vs OSMRE
- States vs EPA vs OSM
- State Agencies vs State Agencies

- Involving the Public

NAS Study

- **Congressman Rahall**, in a letter to NAS, makes a request for NAS to conduct a study of the placement of ash in mine fills.
- Funds for the study are placed in EPA's Appropriations.
- NAS is negotiating the Study Plan/Scope of Work with EPA.
- Both NAS and EPA have indicated that Congressman Rahall's letter is the basis for this effort.

Congressman Rahall's Points

- CCBs are called Power Plant Wastes
- Point 1 – Co-Firing
- “ **PPW make up can vary further due to diverse waste streams that may be co-burned with coal such as auto shredder fluff, tires, creosoted lumber, oil combustion wastes, mixed plastics, petroleum coke mixtures, and manufactured gas plant wastes**”

Congressman Rahall Points

- Point 2

“EPA committed to developing regulations for the use and disposal of PPW in coal mines. This commitment by EPA was set forth in its Regulatory Determination on Wastes From the Combustion of Fossil Fuels.”

Potential Aspects of the NAS Study

- **The adequacy of data collected from surface water and groundwater monitoring points established at PPW sites in mines.**
- **The impact to aquatic life in streams draining PPW placement areas and the wetlands, lakes and rivers receiving these drainages.**

NAS Study Aspects

- **The responses of mine operators and regulators to adverse or unintended impacts such as the contamination of groundwaters and pollution of surface waters.**
- **Whether the PPWs and mines they are being put in are adequately characterized for such placement to ensure that monitoring programs are effective and groundwaters and surface waters are not degraded.**

NAS Study Aspects

- **Whether there are clear performance standards set and regularly assessed for projects to use PPW for “beneficial purposes” in mines.**
- **The status of isolation requirements and whether they are needed.**

NAS Study Aspects

- **The adequacy of monitoring programs including:**
 - **the status of long-term monitoring and the need for this monitoring after the PPW is placed in abandoned mines and active mines when placement is completed and bonds are released.**
 - **whether monitoring is occurring from enough locations**
 - **whether monitoring occurs for relevant constituents in PPW as determined by the characterization of the PPW; and**
 - **whether there are clear, enforceable corrective action standards regularly required in the monitoring.**

NAS Study Aspects

- **The ability of mines receiving large amounts of PPW to achieve economically productive post mine land uses.**
- **The need for upgraded bonding or other mechanisms to assure the adequate resources are available for adequate periods to perform monitoring and address impacts after the PPW placement or disposal operations are completed in coal mines.**

NAS Study Aspects

- **The provision for public involvement in these questions at the permitting and policy-making levels and any results of that involvement.**

NAS Study Aspects

- **Whether the disposal or placement of PPW in coal mines offers a level of protection to water supplies and the environment equivalent to the protection of these resources required by the federal Resource Conservation and Recovery Act (RCRA) regulations governing municipal solid waste facilities (40 CFR Part 258) and the RCRA guideline governing industrial solid waste disposal facilities; and**
- **Whether provisions of SMCRA to minimize harm to water supplies and replace those supplies when harm cannot be prevented are equivalent to the prevention of imminent and substantial endangerment to public health and the environment under SMCRA .**

NAS Summary

- **“FURTHER, THIS STUDY WOULD OFFER TIMELY INFORMATION TO POLICY MAKERS IN THE EPA WHO ARE GRAPPLING WITH THE JOB OF PRODUCING REGUALTIONS FOR THIS PRACTICE BY THE PREVIOUSLY MENTIONED REGULATORY DETERMINATION.”**

Environmental Organizations

The Environmental Organizations have filed a petition with EPA requesting EPA proceed to develop rules under Subtitle D of RCRA for the management of Coal Combustion Byproducts.

The Petition is under review by EPA.

EPA Listening Sessions

- Held for listening sessions to learn more about the use and disposal of coal combustion byproducts.
- Stated it remains concerned about coal combustion byproducts because of the potential for environmental damage;; lack of groundwater protection via monitoring and/or liners; and widely varying state regulatory programs.

Sites of Listening Sessions

- The Nittanny Lion Inn, State College, Pa
- The Fairmont Dallas Hotel, Dallas, Tx
- Quality Inn Vincennes, Vincennes, In
- Wyndham Harrisburg-Hershey, Harrisburg Pa

EPA

- EPA develops a “Guide for Industrial Waste Management”

Other Actions

- Pennsylvania – Army for the Environment Protest the use of ash, cement kiln dust and dredge material to reclaim abandoned mine lands.
- Pennsylvania – DEP Prepares Draft Report Entitled “Coal Ash Beneficial Use in Mine Reclamation and Mine Drainage Remediation in Pennsylvania”

Where Are WE Now?

- When will EPA respond to the petition for rule making and what will the response be?
- Will the Environmental Groups file a lawsuit against EPA demanding rule making to proceed?
- If EPA does promulgate rules under Subtitle D will the same Groups file a suit claiming the regulations should be under Subtitle C?

Continued

- How will jurisdictional issues between EPA, OSM and the States and within the States be resolved or addressed?

Of Interest

- EPA's Industrial Waste Management Guide addresses many of the concerns of the impacted parties.
- Has a Waste Characterization Obligation
- Has a comprehensive water quality monitoring aspect
- Examines impacts of existing operations

Of Interest

- Contains a Public Participation Element
- Address financial assurances/bonding

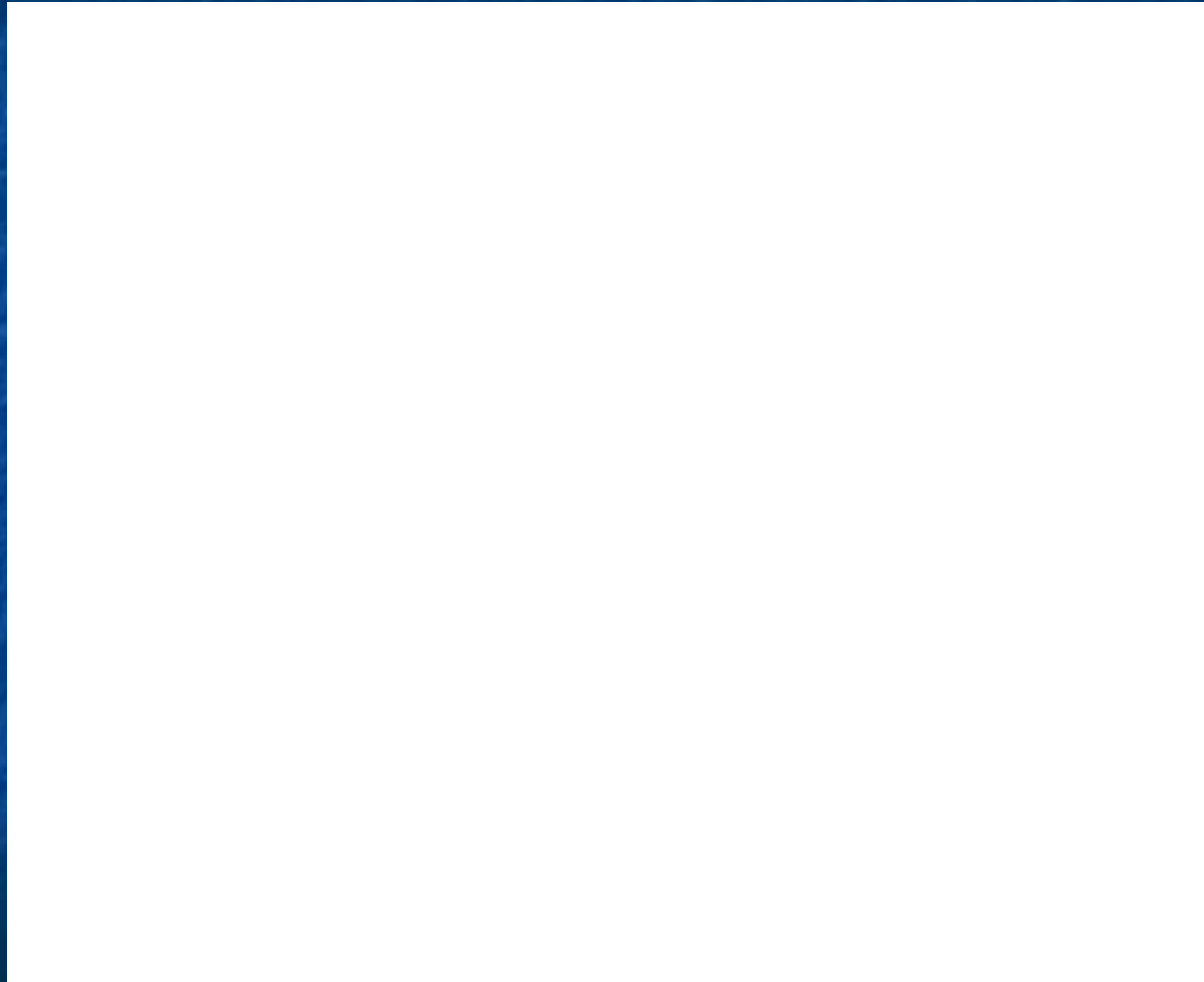
Action Items

- Need to monitor and address issues as they develop and assess damage case allegations
- Be prepared to respond for any calls to change the criteria defining damage cases
- Monitor and participate in the NAS Efforts
- Work to develop guidelines and recommendations from an industry perspective on the management of coal combustion byproducts.

Action Items

- To develop a decision flow chart and matrix

Flow Chart Example



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