

**HR. 493: A COMPREHENSIVE FRAMEWORK FOR PROPER
MANAGEMENT OF COAL COMBUSTION WASTES IS LONG
OVERDUE**

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Mr. Chairman, Congressman Rahall, members of the Subcommittee, my name is Tom FitzGerald. I am Director of the Kentucky Resources Council, Inc., a nonprofit environmental advocacy organization providing legal and technical assistance without charge to low-income individuals, community groups and local governments on a range of environmental issues, from air, waste and water pollution to mineral extraction, and energy and utility policy issues. It has been some twenty years since I have been before a Congressional subcommittee, and I appreciate very much the invitation to be here.

I always preface my testimony with full disclosure, so that you may appropriately discount anything I say afterwards. My perspective has been forged through 37 years of advocacy on coal-related issues, four of them as an environmental specialist for a legal service program representing low-income citizens in the Appalachian coalfields of eastern Kentucky, and the past 25 years as Director of the Council. I represent folks who live downhill, downwind and downstream of both coal mining operations and coal waste impoundments, and who live in the shadow of coal-fired power plants and near sites where coal combustion waste are disposed. I have buried one client who was crushed to death when a poorly-engineered and poorly-constructed 192-foot high coal waste impoundment collapsed and spilled 25 million gallons of slurry into the valley in which she lived.

I am here before you both to express my appreciation to Congressman Rahall for his proposed legislation to address the undermanagement of coal combustion wastes in impoundments by utilities, and also to underscore what the Congressman has stated over the years and what the environmental community and my clients believe to be the case – it is far past time for the U.S. Environmental Protection

Agency to propose and adopt a comprehensive regulatory framework for management of coal combustion wastes establishing a national floor of standards for the characterization, management, disposal and beneficial reuse of the various wastestreams associated with coal combustion – fly ash, scrubber sludge, and bottom ash.

The Coal Ash Reclamation, Environment, and Safety Act of 2009 is an important vehicle for opening this dialogue by assuring that, as an interim step, no new embankment-type structures for storage or disposal of coal combustion wastes will undermanage coal combustion wastes in the manner that the TVA did at the Kingston Plant. By requiring that all new dam or embankment structures for coal ash, slag, and flue gas desulfurization materials be designed to meet the requirements currently applicable to coal processing waste structures, and by defining the term “impoundment” broadly enough to encompass all embankment-type structures that retain these wastes whether in a solid, semi-solid, or liquid form, the bill will help avoid future catastrophes such as the failure of the TVA structure. That the TVA structure that failed was classified under Tennessee state regulations as a *landfill* rather than an a dam or impoundment, underscores the need to define the terms “covered wastes” and “impoundments” as H.R. 493 does, and is one of numerous examples of the undermanagement of coal combustion wastes under the hodgepodge of state regulatory programs that have developed in the vacuum created by the absence of EPA’s leadership. H.R. 493 would provide a backstop that would assure that new embankment structures retaining coal combustion wastes meet engineering, design, construction, and location standards for any new impoundments or landfill units retaining coal combustion wastes that are built above grade.

The bill attempts to address the problem of pre-existing impoundments, requiring that they be inventoried and assessed, and authorizing the Secretary of Interior to require that they be upgraded or closed depending on the risks posed. I do have several suggested changes to H.R. 493 with respect to pre-existing impoundments, and would suggest that they be handled in a manner similar to other pre-existing facilities regulated under SMCRA – by requiring that the facilities be dewatered and closed unless the owner can demonstrate that the existing structure meets the performance standards applicable to the embankment structure, that it would have to be closed or reconstructed to meet both the performance and design standards.

I know that the sponsor shares my belief that regulation of these wastes under SMCRA is not the ideal strategy, and that it is not a surrogate for a comprehensive

regulatory framework managing all aspects of this growing and increasingly problematic waste stream. The savings clause provisions in H.R. 493 Section 2(g)(1) expressly recognizes and protects both the ability of other federal agencies acting under other federal laws to prohibit the construction or operation of impoundments for the storage or disposal of coal combustion wastes, and certainly, KRC believes that the use of water as a mechanism for conveyance of the various coal combustion wastes should be replaced by pneumatic or other systems for dry collection, management and legitimate reuse or disposal. Wet coal ash management is a matter of utility convenience rather than engineering necessity, and as the TVA release and the scores of less catastrophic releases into soil, surface and groundwater demonstrate, using water to evacuate the ash as slurry from the combustion process comes at a hidden and significant cost that should be internalized and paid by ratepayers rather than in the form of damage to private and public land and water resources.

Section 2(g)(2) also protects existing state programs that impose standards equivalent to or more rigorous than those that would be adopted under H. R. 493. In Kentucky, I am very confident that the TVA structure would have been called what it was – a high hazard potential dam – and would have been regulated and inspected more vigorously than was the case

As Congressman Rahall has noted on several occasions over the years, the hodgepodge, piecemeal regulation of coal combustion wastes among and within the states must be addressed by the adoption of a comprehensive regulatory framework by the U.S. Environmental Protection Agency. This measure is not inconsistent with that goal, and we can all hope that EPA will move forward expeditiously on this issue. As one of a score or more of states that have established state policies of being “no more stringent than” federal minimum standards, residents in Kentucky have looked in vain to EPA to finish the job they committed to do in 1988 and again in 2000.

Absent federal intervention to establish appropriate regulatory benchmarks for characterization and management of the wastes based on their intended end use or disposal, the competitive forces of the coal and electric utility marketplace will continue to result in a parochial failure of the individual states to effectively control the disposal of CCW. It will also encourage a practice that is of particular concern to me as an advocate assisting coalfield groups across the nation on coal-related issues, which is the indiscriminate blending of fly ash in mine backfill or disposal in active or abandoned mine workings or pits.

What is known concerning the potential toxicity of the leachate from coal combustion ash suggests that a general federal floor of management standards is needed, particularly when considering disposal or use of such wastes in the highly fractured, geologically disturbed and hydrologically transmissive environment of active or abandoned mine workings.

The 1988 EPA determination that coal combustion wastes need not be regulated under RCRA Subpart C as hazardous, was predicated on the assumption that mitigative measures under RCRA Subpart D such as installation of liners, leachate collection systems, and ground-water monitoring systems and corrective action to clean up ground-water contamination, would be employed for protecting public health and the environment. The failure of EPA to require such measures has harmed both. In light of the increasing evidence that the management of CCW as a solid waste has resulted in damage to land and water resources and presents a localized and significant threat to public health, regulation under Subpart C for some coal combustion wastes should be revisited.

The Office of Surface Mining has been developing a regulation that would facilitate co-disposal of coal combustion wastes at mines, but OSM's authority under SMCRA is not sufficient, standing alone, to assure proper management of coal mine co-disposal, and was never intended by Congress to supplant EPA's primary and non-delegable responsibility under RCRA to assure proper management of such wastes. As improvements continue to be achieved in both pre- and post-combustion scrubbing and capture of particulates and metals, we will of necessity change the composition and increase the potential toxicity of the flay ash and leachate, and generate significant volumes of scrubber sludges that need to be managed in order to protect public health and the environment.

In some states, coal combustion wastes are being backhauled and disposed, or "beneficially reused," in mine workings (including both underground mine voids and more commonly, in surface mine backfills or spoil/mine waste fills) not because of the inherently beneficial or desirable attributes of the wastes relative to other backfill materials, or the lack of alternative locations available to utilities and non-utility customers for coal combustion waste disposal. Rather, such use and disposal is occurring largely because the coal companies offer the backhauling and disposal as a "service" or incentive in order to attract buyers for their coal in an increasingly competitive marketplace, offering the ultimate "out of sight, out of mind" solution to the generation of the coal combustion waste.

The proper management of CCW is essential for protection of human health and the environment. Adequate and comprehensive safeguards will prevent trafficking in environmental contamination by removing the incentive for those more interested in currying market share and short-term economic gain rather than the long-term public interest to undermanage the wastes. Adoption of a program of uniform, comprehensive and appropriate minimum standards for the characterization and management of coal combustion wastes for reuse and disposal is the best way to improve the legitimate beneficial utilization of CCW, while eliminating sham beneficial reuses.

Mr. Chairman, Congressman Rahall, members of the Subcommittee, that concludes my prepared testimony. I have attached two documents for reference, the first being my testimony to the National Academy of Sciences concerning co-disposal of coal combustion wastes at mines, and the second, my suggested amendments to H.R. 493. I would be happy to answer any questions, and appreciate very much your interest in this important issue, and the opportunity to return to D.C. and to have this conversation.

MINE PLACEMENT OF COAL COMBUSTION WASTES

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Before the National Academy of Sciences
Committee On Mine Placement Of Coal Combustion Wastes
Harrisburg, Pennsylvania
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Summary

Coal combustion wastes are being backhauled and disposed, or “beneficially reused,” in mine workings (including both underground mine voids and more commonly, in surface mine backfills or spoil/mine waste fills) not because of the inherently beneficial or desirable attributes of the wastes relative to other backfill materials, or the lack of alternative locations available to utilities and non-utility customers for coal combustion waste disposal. Rather, such use and disposal is occurring largely because the coal companies offer the backhauling and disposal as a "service" or incentive in order to attract buyers for their coal in an increasingly competitive marketplace.

Absent federal intervention to establish appropriate regulatory benchmarks for characterization and management of the wastes based on their intended end use or disposal, the competitive forces of the coal and electric utility marketplace will continue to result in a parochial failure of the individual states to effectively control the disposal of CCW, and will increase pressure on coal companies to remain "competitive" with each other, and with other coalfields across the nation, by offering the ultimate "out of sight, out of mind" solution to the generation of the coal combustion waste – indiscriminate blending in mine backfill or disposal in active or abandoned mine workings or pits.

What is known concerning the potential toxicity of the leachate from coal combustion ash suggests that a general federal floor of management standards is needed, particularly when considering disposal or use of such wastes in the highly fractured, geologically disturbed and hydrologically transmissive environment of active or abandoned mine workings.

The 1988 EPA determination that coal combustion wastes need not be regulated under RCRA Subpart C as hazardous, was predicated on the assumption that mitigative measures under RCRA Subpart D such as installation of liners, leachate collection systems, and ground-water monitoring systems and corrective action to clean up ground-water contamination, would be employed for protecting public health and the environment. The failure of EPA to require such measures has harmed both. OSM's authority under SMCRA is not sufficient, standing alone, to assure proper management of coal mine co-disposal, and was never intended by Congress to supplant EPA's primary and non-delegable responsibility under RCRA to assure proper management of such wastes. As improvements continue to be achieved in both pre- and post-combustion scrubbing and capture of particulates and metals, we will of necessity change the composition and increase the potential toxicity of the wastes and leachate.

The proper management of CCW is essential for protection of human health and the environment. Adequate and comprehensive safeguards will prevent trafficking in environmental contamination by removing the incentive for those more interested in currying market share and short-term economic gain rather than the long-term public interest to undermanage the wastes. Adoption of a program of uniform, comprehensive and appropriate minimum standards for the characterization and management of coal combustion wastes for reuse and disposal is the best way to improve the beneficial utilization of CCW.

Introduction

I appreciate this opportunity to present in written form the comments and concerns of the Kentucky Resources Council, Inc. concerning the use or disposal of coal combustion wastes (CCW) at surface coal mining operations.

As I understand the Project Scope, the National Research Council accepted a request from Congress to study the health, safety, and environmental risks associated with using coal combustion wastes for reclamation in active and abandoned coal mines. As defined by the National Academy of Sciences, the study is reviewing the placement in abandoned and active, surface and underground coal mines in all major coal basins, and has defined several specific questions and areas of focus, including:

1. The adequacy of data collection from surface water and ground water monitoring points established at CCW sites in mines.

2. The impacts of aquatic life in streams draining CCW placement areas and the wetlands, lakes, and rivers receiving these drainage.
3. The responses of mine operators and regulators to adverse or unintended impacts such as the contamination of ground water and pollution of surface waters.
4. Whether CCWs and the mines they are being put in are adequately characterized for such placement to ensure that monitoring programs are effective and groundwater and surface waters are not degraded.
5. Whether there are clear performance standards set and regularly assessed for projects that use CCW for "beneficial purposes" in mines.
6. The status of isolation requirements and whether they are needed.
7. The adequacy of monitoring programs including:
 - a. The status of long-term monitoring and the need for this monitoring after CCW is placed in abandoned mines and active mines when placement is completed and bonds released;
 - b. Whether monitoring is occurring from enough locations;
 - c. Whether monitoring occurs for relevant constituents in CCW as determined by characterization of the CCW; and
 - d. Whether there are clear, enforceable corrective actions standards regularly required in the monitoring.
8. The ability of mines receiving large amounts of CCW to achieve economically productive post mine land uses.
9. The need for upgraded bonding or other mechanisms to assure that adequate resources are available for adequate periods to perform monitoring and address impacts after CCW placement or disposal operations are completed in coal mines.
10. The provisions for public involvement in these questions at the permitting and policy-making levels and any results of that involvement.

11. Evaluate the risks associated with contamination of water supplies and the environment from the disposal or placement of coal combustion wastes in coal mines in the context of the requirements for protection of those resources by RCRA and SMCRA.

My comments focus on the relationship between the Surface Mining Control and Reclamation Act of 1977 (SMCRA) and RCRA relative to the placement of CCW on mine sites, and the inadequacy of a regulatory strategy that places primary reliance on the performance standards, permitting and bonding provisions of SMCRA to assure proper management of CCW rather than developing national minimum standards under RCRA for characterization and management of waste ashes generated by the combustion of coal and the capture of uncombusted particulate fractions of that fossil fuel.

Prior to addressing these concerns, let me first explain my background and perspective.

Background & Qualifications

I am Director of a nonprofit environmental advocacy organization, the Kentucky Resources Council, which has for 21 years provided legal and technical assistance without charge to low-income individuals and communities on air, waste, water, and resource extraction issues. I am a practicing attorney licensed in the Commonwealth of Kentucky, holding a Juris Doctor degree from the University of Kentucky, College of Law, and have held numerous appointments on state and national environmental advisory panels. My vitae is attached.

Since 1985 I have been an adjunct professor of energy and environmental law at the University of Louisville, Brandeis School of Law, and have authored numerous articles on the citizen perspective of environmental issues related to coal mining and reclamation.

My perspective has been forged from 31 years of mining-related advocacy on behalf of communities and injured homeowners;¹ 25 of them as an attorney representing injured parties in a number of coal waste-related cases. KRC's work can be summed up in one sentence - in mining and coal waste disposal matters, KRC represents people living downhill, downwind and downstream – those who

¹ Prior to assuming the position of Director of the Kentucky Resources Council, Inc. the author was staff attorney with the Appalachian Research and Defense Fund of Kentucky, Inc., providing environmental law assistance to field attorneys with that Legal Service Program.

bear disproportionately the off-budget costs of undermanagement of the disturbances associated with surface and underground coal removal and disposal or other use of wastes generated by combustion of the coal.

Discussion

The charge to this Committee is an important one from the perspective of landowners who live downhill and downstream of mining operations, and for those who have leased land for surface coal mining operations or on whose land mining has taken place. Those citizens rely on federal and state regulatory agencies to assure that the impacts of mining will be minimized, and that their interests in healthy air, uncontaminated land, and water quality and supply, will be respected in the development of those mineral resources and reclamation of areas disturbed.

The legacy of coal extraction, beneficiation, utilization and waste disposal in the coalfields has not been one that inspires confidence in the capacity of the coal industry to self-police, or in the efficacy of state-lead programs and federal “guidelines” which fail to establish mandatory benchmark “floor” standards for management of coal-related wastes. With respect to CCWs and other “special wastes,” the failure of the Environmental Protection Agency to establish national regulations has led to adverse public health and environmental consequence, and to sort of economic “one-downsmanship” that characterized the political climate of the coal states prior to adoption of SMCRA.

The lack of such standards has also, across the nation, engendered a reluctance on the part of host communities to accept the additional burdens of disposal or “placement” of CCW on active or abandoned mines.

A central tenet of the Surface Coal Mining and Reclamation Act of 1977 was the principle that mining was to be a “temporary” use of land, and that the reclamation and restoration of land to pre-mining status or to other beneficial post-mining land uses of higher or better value, was to be achieved. SMCRA, while addressing the placement and disposal of wastes generated by the mining and beneficiation of coal, was never intended to be a primary tool for management of wastes resulting from combustion of that material, and Congress explicitly preserved the authority and concomitant duty of USEPA to do so under RCRA.

At the core of RCRA’s mandate is the concern of Congress that wastes be managed from generation through disposal, with appropriate characterization of the waste, proper handling an management consistent with the potential for harm to

human health and the environment, and that the waste be managed in a manner commensurate with the nature and duration of the potential to cause harm.

The failure of USEPA to have acted to fulfill the commitment to manage CCW through adoption of appropriate regulations under RCRA, has led to a hodgepodge of state laws and regulatory approaches to disposal of such wastes. Additionally, the disparity between state regulations governing the “disposal” of such wastes in landfills, and the allowance of “beneficial reuse” in which the same wastes are dispersed uncontrolled in mine backfill under the aegis of enhancing reclamation, is as marked as it is reckless, given the capacity of the wastes to release into the environment constituents of concern long after the site will be monitored and the obligation to take corrective action for off-site contamination extinguished.

The Case For National Standards

Sufficient evidence of instances of contamination from undermanagement of coal combustion wastes to warrant the development of national minimum standards concerning the characterization, storage, disposal and reuse of these wastes. Specifically, and of particular interest to this panel, the evidence is sufficient to justify an immediate nationwide moratorium on further co-disposal of coal combustion wastes in mine voids and pits until the United States Environmental Protection Agency and federal Office of Surface Mining develop national minimum standards governing the co-disposal of such wastes in mine voids and backfill.

What is known concerning the potential toxicity of the leachate from coal combustion ash suggests that a federal floor of management standards is needed.

It is a myth of dangerous proportion to suggest that there is no potential public health and environmental impact of improper management of coal combustion wastes because the wastes are not classified as “hazardous.” The 1988 US Environmental Protection Agency Report to Congress concerning coal combustion wastes acknowledged the existence of potential for causing groundwater contamination among and within the categories of coal combustion waste. According to the **Wastes from the Combustion of Coal by Electric Utility Power Plants**, EPA/530-SW-88-002:

The primary concern regarding the disposal of wastes from coal-fired power plants is the potential for waste leachate to cause ground-water contamination. Although most of the materials found in these wastes do not

cause much concern (for example, over 95 percent of ash is composed of oxides of silicon, aluminum, iron and calcium), small quantities of other constituents that could potentially damage human health and the environment may also be present. These constituents include arsenic, barium, cadmium, chromium, lead, mercury and selenium. At certain concentrations these elements have toxic effects. *Id.*, at ES-4.

While the findings of the EPA Report and review of industry-generated studies indicated generally that metals did not leach out of coal combustion waste at levels 100x the primary drinking water standard (i.e. characteristically hazardous by TCLP toxicity), hazardous levels of cadmium and arsenic were found in ash and sludge samples, and boiler cleaning wastes sometimes contained hazardous levels of chromium and lead. *Id.*

The literature suggests that, among other things,

1. Neither EP nor TCLP tests provide a good indication of leachability of CCW in natural disposal settings. Long-term leaching tests conducted until equilibrium has been achieved for each element of concern, using a leaching solution that approximated percolating groundwater, would give a more accurate depiction of ground-water contamination potential at a disposal site.
2. 17 potentially toxic elements are commonly present in CCW: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, and zinc.
3. Fluidized bed combustion (FBC) wastes retain volatile and semi-volatile elements in the bottom ash to a greater extent than conventional pulverized coal combustion, thus enhancing the leachability of FBC waste elements.
4. Leachates from coal power plant ash and flue gas desulfurization wastes typically exceed drinking water standards, but by a factor less than hazardous levels (i.e. 100 x DWS). The major leaching studies on CCW indicate that drinking water standards are typically exceeded by CCW ash leachate at a factor of 1.1 to 10, and often by a factor greater than 10 for one or more elements.

Other reports indicate a concern with enhanced levels of radionuclides in coal combustion fly ash, including radium-226 and other daughters of the uranium and thorium series that pose significant long-term management challenges.

The available evidence suggests that disposal of coal combustion wastes in mine pits or other workings may be of particular concern, due to a number of factors:

1. The increase in surface area available for leaching of elements resulting from fracturing of overburden and confining layers;
2. Higher total dissolved solids levels in mine spoils that compete for sorption sites on solids with toxic elements released from the buried ash;
3. Direct communication between surface and underground mine workings and aquifers through stress-relief fracture systems and subsidence-induced fracture flow;
4. The dependence of residents of coal-bearing regions on private, groundwater supplies and the significant potential for contamination of those supplies; and
5. The presence of site conditions conducive to creation of acid or toxic-forming material that can solubilize constituents of concern from the waste.

In choosing the appropriate regulatory endpoint for assertion of jurisdiction over the disposal of these wastes in mine workings, the goal should be not be whether the waste leaches at 100 times the drinking water standards (which is the relevant TCLP characteristic of the wastes' "hazard"), but should be whether, if improperly managed or undermanaged, the wastes will leach constituents of health concern into groundwater at above the maximum contaminant level goals.² Since the evidence shows that such leaching does occur, intervention to assure proper siting, construction, and use of barrier technology to prevent the wastes from contacting groundwater or rainfall percolation is needed.

The 1988 EPA Report concluded preliminarily that coal combustion waste need not be regulated under RCRA Subpart C as hazardous, but rather that the wastes should continue to be regulated under Subpart D as solid wastes. This conclusion rested on the assumption that mitigative measures under Subpart D such as installation of liners, leachate collection systems, and ground-water monitoring systems and corrective action to clean up ground-water contamination, would be

² The MCLGs, or maximum contaminant level goals, represent the health-based goals under the Safe Drinking Water Act rather than the MCLs, which consider the health goals and the economic costs of treating water to meet those standards. Since, in the case of placement of CCW in mined areas, the surrounding water supplies are typically individual groundwater wells without extensive treatment trains rather than public or semi-public supplies, the higher health-based threshold is appropriate. Use of the lower MCLs would allow the mine operator to shift to surrounding lands the cost of additional treatment of water supplies.

adequate for protecting public health and the environment. The EPA recommendation was predicated on the application of such measures to the management of coal combustion wastes. Unfortunately, such measures are not being employed universally among the states.

Information developed by the Hoosier Environmental Council demonstrates the wide variability among states in the caliber of the management programs for coal combustion wastes disposed of at mine sites. States may have the capacity, but apparently lack the political will, to properly regulate these wastes.

The uneven and inadequate state regulation of disposal of coal combustion wastes at mine sites is evident. The coal combustion waste stream, having been accorded by many states a legal status that is "neither fish nor fowl," neither solid nor hazardous waste but instead "special waste," has been subject to disposal without protections appropriate to the potential toxicity of the waste and the potential problems from improper management. The failures regarding management of these wastes include a failure to require adequate background characterization of geologic and hydrogeologic conditions relative to the disposal of these wastes, and the haphazard characterization of the toxicity, fate and transport of these wastes under proposed disposal conditions, leading to disposal without adequate precautions against future pollution. In some states, CCW is being placed indiscriminately in unlined backfills of coal mining operations in direct communication with groundwaters, and without proper characterization, isolation, management, closure, financial responsibility, monitoring and post-closure corrective action requirements attendant to such wastes. These failures are the direct and predictable result, the bitter fruit, of the failure of OSM and USEPA to establish a federal "floor" of regulation of coal combustion wastes

Does the co-disposal of coal combustion wastes in mining areas present heightened risks of contamination of groundwater and injury to public health that warrant adoption by USEPA of specific standards governing such practices? We believe clearly that it does. The evidence of groundwater contamination from disposal of coal combustion wastes in situations comparable to the dumping of such wastes in mine backfill, is more than sufficient to warrant federal involvement in establishing baseline standards for coal combustion waste disposal in mining sites and for "beneficial reuse" of such wastes.

The lack of federal standards has resulted in uneven standard-setting among the states; a regulatory "one-downsmanship" in which states are unwilling to establish stronger standards that might disadvantage their coal industry relative to those

standards of other states. This destructive interstate competition in environmental degradation has long been acknowledged as a problem among the coal states, particularly in those areas of the east, midwest and west where the coalfields span a number of states. Congress enacted a national regulatory program over coal mining operations including federal minimum performance and design standards, federal oversight and a federal enforcement component precisely because of the inability of the states to overcome this problem:

For a number of predictable reasons - including insufficient funding and the tendency for State agencies to be protective of local industry – State enforcement has in the past, often fallen short of the vigor necessary to assure adequate protection of the environment.

House of Representatives Report 95-218, 95th Cong., 1st Sess. 129 (1977).

In the absence of federal action, combustion wastes are being undermanaged, and the harms intended to be avoided by Congress are becoming manifest. KRC urges the panel to recommend that USEPA cease dithering and adopt a comprehensive regulatory program governing management (including “beneficial reuse” and “disposal”) of CCW. Both USEPA and OSM have flirted with the concept of deferring any regulatory action in light of OSM’s regulatory authority. While SMCRA may provide *supplemental* authority to regulate the potential adverse consequences of CCW disposal/use at minesites, SMCRA was never intended nor is it structured to be the primary mechanism for assuring that CCW is properly managed.

**USEPA SHOULD LIVE UP TO ITS COMMITMENT TO
REGULATE CCW THROUGH NATIONAL REGULATIONS
RATHER THAN GUIDANCE**

USEPA must cease its flirtation with issuing guidance and instead assert regulatory authority over the disposal of coal combustion wastes and over beneficial reuse of such wastes, developing minimum standards for the states to adopt in order to level the playing field. The USEPA must take the lead since it, and not OSM, is the appropriate agency to develop national minimum standards and assure state implementation of standards for disposal and other land application of coal combustion wastes in mine pits and backfill sufficient to protect human health and the environment.

Guidelines at the national level rather than regulations are not a sufficient or appropriate solution. The failure of EPA to complete the commitment to promulgate regulations establishing minimum standards for coal combustion waste disposal, including "beneficial" uses of coal combustion wastes and the disposal of coal combustion wastes at mine sites, and the proposal to instead issue "guidance" raises a number of regulatory and environmental concerns.

First, as noted earlier, the lack of federal minimum standards results in uneven state standards and under-regulation of wastes that typically exceed drinking water standards for a number of metals. Kentucky, for example, has more rigorous standard for mine filling than many other states,³ but extremely weak controls on beneficial reuse and disposal in "ash ponds."⁴ The lack of federal minimum standards has and will continue to result in one-downsmanship and a "race to the bottom" among the coal states, as companies desirous of securing market share from the purchaser of the lion's share of their output, the utility industry, offer to backhaul and dispose of coal combustion wastes as a package deal;

Second, issuance of national guidance is insufficient to assure proper management of these wastes, since some 23 states have a version of "no more stringent" provisions in their laws that would restrict or preclude those states' agencies from asserting regulatory authority over use or disposal of the wastes by incorporating federal guidance. Those states are typically limited to adoption and imposition of counterpart state rules based only on those standards that have been adopted by regulation at the federal level. Also, some states cannot under state law impose substantive requirements based on "policies."

Third, the lack of minimum standards penalizes those coal-firing utilities who manage their own wastes under higher standards relative to other companies who allow disposal of coal wastes by the coal industry either for "beneficial" uses or as mine fill without concern for long-term contamination. As coal companies seek to improve market share by offering to backhaul wastes resulting from coal

³ A copy of the Kentucky statute is attached for reference. The statute, while stronger than those of some other states, yet lacks long-term liability, monitoring and funded corrective action obligations.

⁴ The under-regulation of CCW, particularly of the so-called "beneficial use" of these wastes, is a particular problem, since under the rubric of "beneficial reuse, coal wastes are disposed of in uncontrolled settings without long-term monitoring, management, or liability. In Kentucky, which has a comparatively rigorous framework for the regulation of co-disposal of coal waste at mine sites, the "beneficial reuse" of these same wastes is subject to a much more superficial "permit by rule." The potential toxicity and the fate and transport of constituents of concern is not given the sort of regulatory attention that it should have in light of the intended end uses and disposal or beneficial reuse of these materials.

combustion, the lack of standards encourages corner-cutting in management of the wastes.

Fourth, the lack of standards heightens conflicts between host communities and the utility and coal industries due to concerns with under-regulation of the coal combustion wastes relative to their potential to leach metals and other constituents at levels posing environmental or health risks.⁵

Finally, the failure of USEPA to assert federal leadership in establishing up-front baseline standards for management of the disposal of coal combustion wastes invites significant judicial intrusion into the field *after* the fact, and implicates the disposers, transporters and generators in a web of liability under CERCLA and RCRA that is as open-ended as are the state management programs themselves.

The uneven and inadequate state regulation of disposal of coal combustion wastes, including a failure of states to require adequate background characterization of geologic and hydrogeologic conditions relative to the disposal of these wastes, and the haphazard analysis of the fate and transport of these wastes under proposed disposal and "reuse" conditions, is the inevitable and predictable product of the failure of USEPA to establish a federal "floor" of regulation of coal combustion wastes.

The crux of the problem is that the short-term interests of those that are managing or disposing of the wastes are not consistent with the long term interests of either the host communities or the generators of these materials.⁶

⁵ The lack of comprehensive regulation engenders an understandable and predictable suspicion from the host communities. For example, one of the major industrial entities in Jefferson County had been disposing its boiler waste (a CCW) by delivering the ash to a company who commingled the ash with spent concrete waste and disposed of the mixture in a dry cavern in Louisville, to elevate the floor of the former mine for document storage. The coal company who was supplying the fuel underbid that process in order to secure market share. The coal company was trying to offer a package of selling the coal and providing the service of hauling the ash back – a situation not atypical in this current market. In order to make the contract viable, the coal company proposed to dispose of the CCW as roadbed material at a farm in a nearby county and to use the material for agricultural application. (The use of this material for agriculture is one area where EPA had expressed significant concern in its recent analysis because of the levels of arsenic!) In this instance, the county had zoning and planning powers and denied the application. The material is now being hauled to a "farm" in Harlan County, where the coal originated, and reports indicate that it has contaminated the receiving stream into which the property drains.

⁶ It is of interest to note that, when KRC negotiated Kentucky's bill on this issue, most of the in-state utilities indicated no desire to let the coal mining industry manage their wastes, but instead indicated that they would manage their wastes and the long term liabilities connected with them in contained facilities or on-site rather than allow them to be commingled with backfill materials at coal mines.

THE ROLES OF USEPA AND OSM

With respect to disposal of coal combustion wastes in mining areas, *KRC believes that SMCRA is not the appropriate vehicle for primary management of co-disposal at coal mines*. OSM's authority under SMCRA is not sufficient, standing alone, to assure proper management of coal mine co-disposal, and was never intended by Congress to supplant EPA's primary and non-delegable responsibility under RCRA to assure proper management of such wastes.

As noted earlier, disposal of coal combustion wastes is of particular concern at coal mines. Coal combustion wastes containing leachable metals at levels well above accepted drinking water standards for safe potability of water, yet are in some states being placed in unlined backfills of coal mining operations in direct communication with groundwaters, and without proper characterization, isolation, management, closure, financial responsibility, monitoring and post-closure corrective action requirements attendant to such wastes. The information concerning the leaching potential of these wastes, the vulnerability of coalfield groundwater resources, and the documented cases of damage are sufficient to warrant immediate action by USEPA to control such wastes where co-disposed in coal mines.

It must be understood by the Committee that the "driver" concerning the disposal of coal combustion wastes backhauled and disposed of in mine workings (including both underground mine voids and more commonly, in surface mine backfills or spoil/mine waste fills) is not the inherently preferential beneficial attributes of the wastes relative to other backfill materials, or the lack of alternative locations available to utilities and non-utility customers for coal combustion waste disposal. The primary "drivers" are certain companies within the coal industry seeking to improve their relative contractual position with utilities by offering backhauling and disposal as a "service" or incentive in order to attract buyers for their coal in an increasingly competitive marketplace.

The Surface Mining Control and Reclamation Act of 1977 is not the appropriate vehicle to regulate coal combustion wastes. SMCRA was neither intended nor designed to address the use and disposal of these wastes. A number of potential conflicts with the core provisions of SMCRA are created in any proposal for disposal of CCW at a minesite:

* Since all spoil material generated by a mining operation must be returned to the mine site in order to restore the mined area to the "approximate original contour"

and to minimize off-site placement of “excess” mine spoil, no CCW could lawfully be placed in a location where it would displace spoil and cause more material to be disposed of in a hollow fill. Since disturbance of the strata overlying coal seams results in a typical “swell” of 15-25%, addition of CCW to the active works likely displaces spoil and violates this mandate.

* The requirement for contemporaneous reclamation of mined areas is offended by any delay in reclamation associated with disposal of coal combustion wastes in active mining and reclamation areas. The essence of SMCRA is that mining is to be a temporary use of land, not a permanent dedication of land for waste disposal, and the requirement of contemporaneous reclamation is intended to effectuate the mandate that backfilling, grading, and revegetation follow coal removal promptly.

* Blending of coal combustion wastes in backfill without proper barriers to prevent migration to groundwater and to prevent saturation of the waste from infiltration of rainfall or groundwater, would violate provisions of the SMCRA which require protection of the hydrologic balance and prevention of off-site damage, and which specifically demand isolation of acid- or toxic-forming materials from surface or groundwater.

* Right of entry and other approvals and waivers under the mining laws are intended to authorize specific coal extraction-related activities, and do not extend to include the backhauling and dumping or blending of wastes generated from combustion of the removed coal. Issues concerning right-of-entry and responsibility for contamination could be complex since SMCRA's enforcement, insurance, bonding and right-of-entry provisions are focused on mining regulation. Disposal of coal combustion waste on a mine site, where a part of a surface coal mining operation, would need to be subject to **all** of the procedural protections, including demonstration of the right to enter and conduct such disposal activities, and all enforcement procedures of the federal Act and state regulatory program attach. Separate approval by the landowner and local government would be needed since the typical right-of-entry document would not authorize waste disposal.

Additionally, where CCW use or disposal at a mine is contemplated, the typical mining permit public notice and public comment period would not be adequate to inform the public.

* The duration of monitoring and bonding for coal mines is far too short relative to the timeframe needed to demonstrate that the disposed wastes have been properly isolated to prevent off-site contamination.

* SMCRA does not require that the chemical, physical, and radiological characteristics of the wastes be assessed, nor that the fate and transport mechanics of those wastes be evaluated. Neither are the groundwater monitoring requirements of SMCRA designed to identify the presence of and migration of constituents of concern from CCW disposal; nor does SMCRA require testing for the full panoply of contaminants present in CCW.

As mentioned earlier, the groundwater system in many coal fields is particularly vulnerable to contamination because of the high transmissivity of the fracture-dominated aquifer system, and because of the high degree of interconnection of aquifers through subsidence-induced deformation of strata above underground coal seams.

* To satisfy the surface coal mining regulatory program obligations under federal and state law of protecting the hydrologic balance on and off the mine site, a broad array of metals and any other constituents identified through chemical characterization of the composition of the coal combustion waste, would need to be imposed as monitoring parameters for on-going groundwater and surface water monitoring. Each of the 17 potentially toxic elements are commonly present in CCW: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, and zinc, other metals present, radionuclides, and in the case of fluidized bed combustion (FBC) wastes, volatile and semi-volatile elements would need to be assessed.

* The placement and spacing of groundwater monitoring wells would need to be significantly upgraded to be sufficient to detect leachate generation and movement off-site at the bench elevation and through fracture systems, for strip mine bench disposal, and along and below the seam for pit disposal. Monitoring parameters and well location would need to be altered to detect contamination at the waste boundary, necessitating continuous monitoring wells along the area where the waste is disposed. Long-term site maintenance and groundwater monitoring after mining bond release would need to be addressed.

* Finally, financial responsibility requirements would need to be addressed, since the performance bond under SMCRA guarantees only reclamation under Title V and is neither calculated to cover nor extensive enough in the scope of liability to cover on of off-site damage and reclamation needs associated with CCW disposal.

Separate bonding, insurance, and long-term financial responsibility would need to be established.

SMCRA is a poor fit as the primary or sole regulatory vehicle for management of CCW use and disposal at minesites, as it was never intended by Congress that OSM take the lead in regulating disposal of CCW, but instead OSM's authority was supplemental to but not to supplant RCRA and EPA's role in standard-setting. Current SMCRA regulations do not fully address issues of proper characterization of and long-term management of CCWs.

KRC does not believe that CCW disposal in mining areas should be encouraged or "incentivized" through lax regulation. The placement of uncontrolled and unconsolidated deposits of coal combustion waste in mine backfills, valley or hollow fills, or underground mine voids, is irresponsible, and shifts off-budget the costs of management of wastes which will remain chemically active long after responsibility for their containment is extinguished. Ample hydrologic evidence is available to suggest that co-disposal of coal combustion wastes should be prohibited pending development of sufficient standards for the characterization, management, placement and monitoring of such disposal, and that EPA should move promptly to develop such standards.

ELEMENTS OF A CCW MANAGEMENT FRAMEWORK

KRC believes that any program developed under RCRA for CCW management at mines must include:

* Separation and proper disposal of other fossil fuel-related wastes that may contain higher levels of toxic constituents, such as (1) fluidized bed combustion (FBC) wastes that may contain residual unburned organics not associated with typical coal ash. Greater scrutiny is warranted for FBC waste, which presents a higher potential for leaching elements of concern; (2) wastes generated through the firing of hazardous waste fuels and waste oils with or without coal; and (3) wastes fired or co-fired with waste tires and refuse-derived fuel. Each of these categories adds constituents to the combustion process which may significantly increase the hazards of improper disposal of the waste, including a range of products of incomplete combustion of chlorinated and other synthetic organic compounds that warrant extensive analysis, characterization and careful management beyond that necessary for coal combustion waste.

- * Clarification that coal combustion wastes do not include utility wastes such as metal and boiler cleaning wastes, nor other wastes generated from power plants beyond those directly resulting from combustion of coal and control of emissions from the combustion process.
- * Screening of all coal combustion wastes for radionuclides and management as low-level radioactive wastes in accordance with the applicable state and federal laws, where those wastes exhibit activity that is above background levels. Coal combustion waste containing elevated radionuclides is properly classified as technologically enhanced low-level radioactive waste.
- * Complete characterization of the waste stream(s) proposed for land disposal, and assurance that the engineering design of the disposal facility or proposed reuse scenario will assure compliance with the environmental performance standards (including no contamination of aquifers above drinking water standards and no increase in groundwater of any constituents above background levels of those contaminants). Whenever possible the chemical and physical composition of the actual waste stream that will be produced by the combustion process at the utility from which the waste will be generated, should be used for testing.
- * In order to properly design a facility for disposal of coal combustion waste, or to demonstrate that reuse will not cause environmental harm, the leaching potential must be established by use of appropriate modeling of the disposal site, the amount of rainfall infiltration, the pH of the waste and associated materials through which the rainfall will pass, and a hydrogeologic investigation into the location, extent, and characteristics of the surface and groundwater systems at the site. Short-term TCLP testing is insufficient to characterize longer term leaching potential.
- * Groundwater monitoring must be sufficient to allow for prompt detection of leachate migration at the waste site (and not the mine) boundary. Monitoring parameters and well locations must be such that they are appropriate to the area in which the waste is disposed.
- * Blending of mine wastes containing fly ash with spoil in the backfill, rather than controlled placement of the wastes in a designed facility, should be treated as prohibited open dumping.
- * A requirement for controlled placement in a discrete, properly engineered and lined land disposal facility with groundwater monitoring, leachate collection, closure and post-closure care, and financial responsibility. When EPA determined

that issuance of regulations under Subtitle C of RCRA was not necessary to adequately manage the environmental risks associated with disposal of coal combustion wastes, it premised that determination on the assumption that the environmental performance standards and protections of Subtitle D would be extended to the management of that industrial waste stream.

CONCLUSION

What will the future bring absent federal intervention?

Coal combustion wastes are being backhauled and disposed, or “beneficially reused,” in mine workings (including both underground mine voids and more commonly, in surface mine backfills or spoil/mine waste fills) not because of the inherently beneficial or desirable attributes of the wastes relative to other backfill materials, or the lack of alternative locations available to utilities and non-utility customers for coal combustion waste disposal. Rather, such use and disposal is occurring because the coal companies offer the backhauling and disposal as a "service" or incentive in order to attract buyers for their coal in an increasingly competitive marketplace. Absent federal intervention to establish appropriate regulatory benchmarks for characterization and management of the wastes based on their intended end use or disposal, the competitive forces of the electric utility marketplace will continue to result in a parochial failure of the individual states to effectively control the disposal of CCW, and will increase pressure on coal companies to remain "competitive" with each other, and with other coalfields across the nation, by offering the ultimate "out of sight, out of mind" solution to the generation of the coal combustion waste – indiscriminate blending in mine backfill.

What is known concerning the potential toxicity of the leachate from coal combustion ash suggests that a general federal floor of management standards is needed. As improvements continue to be achieved in both pre- and post-combustion scrubbing and capture of particulates and metals, we will of necessity change the composition and increase the potential toxicity of the wastes and leachate.

The proper management of CCW is essential for protection of human health and the environment. Adequate and comprehensive safeguards will prevent trafficking in environmental contamination by removing the incentive for those more interested in currying market share and short-term economic gain rather than the long-term public interest to undermanage the wastes. Adoption of a program of

uniform, comprehensive and appropriate minimum standards for the characterization and management of coal combustion wastes for reuse and disposal is the best way to improve the beneficial utilization of CCW.

VITAE

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Employment

Director, Kentucky Resources Council, Inc.

P.O. Box 1070, Frankfort, Kentucky 40602
1984 - Present

Director of non-profit environmental advocacy organization providing free legal, strategic and policy assistance to individuals, organizations and communities concerning environmental quality and resource extraction issues.

Staff Attorney and Environmental Specialist

Appalachian Research and Defense Fund of Kentucky
630 Maxwellton Court, Lexington, Kentucky 40508
1980-1984

Managing attorney for Lexington office of the Legal Services Corporation grantee for eastern Kentucky. Served as coordinator or research for thirty field attorneys, and environmental resource specialist on air, waste, water and mining pollution cases.

Staff

Council of Southern Mountains, Inc.
Drawer N, Clintwood, Virginia 24228
1973-1976

Staff member and co-manager of bookstore/resource center on the southern Appalachian region.

Staff

Appalachian People's Service Organization
Summer 1973

Staff member for Operation Coal, an information and education project on reform of the nation's mining laws. Worked extensively on Congressional testimony and public information concerning 1973 surface mining reform bills in Congress.

Appointments

Member, Kentucky Forest Products Council, 1994-1999

Member, Governor's Clean Air Act Task Force, 1993-Present

Member, Ky*A*Syst Advisory Committee, 1993-Present

Member, Clean Air Act Small Business Technical Advisory Committee, 1995-1999

Task Force on Surface Mine Bonding, Natural Resources and Environmental Protection Cabinet
1982-1984

Task Force On Mining Primacy, Natural Resources and Environmental Protection Cabinet 1980-
1982

Task Force on Tar Sand Development, Natural Resources and Environmental Protection Cabinet
1982-1984

Member, Subcommittee On Surface Mining, Kentucky Environmental Quality Commission,
1984-1992

Member, Board of Directors, Kentucky Conservation Committee 1986-1990

Adjunct Professor of Energy and Environmental Law, University of Louisville Law School,
1986-Present

Member, Legislative Task Force on Waste Management, 1988-1990

Board of Directors, Kentucky Center for Hazardous Waste Reduction, 1989-1994

Member, Kentucky Coal Authority 1990-1992

Member, Solid Waste Reduction and Management Plan Advisory Committee, Natural Resources
and Environmental Protection Cabinet 1991-1994

Member, Container Deposit Task Force, 1998-1999

Member, Natural Resources Conservation Service State Technical Committee
1996- Present

Education

Juris Doctor, University of Kentucky College of Law 1980
Order of the Coif, University of Kentucky 1980

Reginald Heber Smith Community Lawyer Fellow 1980-1982

Bachelor of Arts, American Studies, with distinction
Roger Williams College, Bristol, Rhode Island 1976

Publications

The Ages Tragedy: Where Were The Regulators?

Report of 1981 coal waste dam collapse in Harlan County, Kentucky, prepared for local citizens group, focusing on three agencies that had but failed to properly exercise jurisdiction over the failed structure.

The 1977 Surface Mining Control and Reclamation Act - - The Citizens "Ace In The Hole"

Primer, published at 8 Northern Kentucky Law Review (1981) on representation of the public in surface mining permit and enforcement challenges under federal Surface Mining Control and Reclamation Act.

Federal Regulation of Coal Mine Waste Disposal: A Blueprint For Disaster

Article focuses on need for reform and inter-agency coordination in coal waste regulation, published in the 1984 National Coal Issue of the West Virginia Law Review.

Abuse of the Surface Mining Act: A Continuing Story

A review of the abuse of the federal Surface Coal Mining and Reclamation Act of 1977, published in the 1985 National Coal Issue of the West Virginia Law Review.

Representing the Citizen In Surface Mining Cases

Authored Chapter 115 of Volume 3 of Kentucky Mineral Law, in a multi-volume mineral law series focusing on educating private attorneys on how to effectively represent the public in mining controversies.

Awards

Recipient of the Environmental Quality Commission Lifetime Achievement Award, 2002

Recipient, Henry R. Heyburn Public Service Award, University of Kentucky College of Law, 2003.

Recipient, Kentucky Nature Preserves Commission Biological Diversity Award, 2003

350.270 Disposal of coal combustion by-products at surface coal mining operations -- Permitting process -- Requirements for disposal -- Authority for administrative regulations.

(1) The cabinet may issue a permit under this chapter authorizing the disposal of coal combustion by-products at surface coal mining operations.

(2) This section shall apply to the disposal of waste from burning clean oil or gas with coal, if the oil or gas is used only for startup or flame stabilization. This section shall not apply to disposal of coal combustion by-products for which a special waste formal permit or a special waste registered permit-by-rule is required under administrative regulations promulgated pursuant to KRS Chapter 224. This section shall also not apply to disposal of coal combustion by-products that have been mixed or otherwise co-managed with low volume waste or with materials that exhibit hazardous waste characteristics. This section shall also not apply to coal combustion by-products generated prior to July 15, 1994, unless the applicant can demonstrate to the satisfaction of the cabinet that these coal combustion by-products have not been mixed or otherwise co-managed with low volume waste or with materials that exhibit hazardous waste characteristics. This section shall also not apply to underground injection of coal combustion by-products.

(3) An application to modify an existing permit to initially include disposal of coal combustion by-products shall be an application for a major revision or an amendment under KRS 350.070.

(4) An application under this section to modify an existing permit issued under this chapter that includes coal combustion by-product disposal pursuant to a permit issued under KRS Chapter 224, where the application proposes disposal of the same coal combustion by-products in the same locations as approved in these existing permits in a manner consistent with the disposal requirements of this section, may be made by application for a minor revision.

(5) An application to modify an existing permit to increase the amount of coal combustion by-products to be received, to change the components of the coal combustion by-products, or to change the generating facility, may be an application for a minor revision. However, if the cabinet determines that the scope and nature of the proposed change will have the effect of increasing the concentrations of heavy metals, or is such that public notice is necessary to allow participation in the cabinet's decision by persons who have an interest which may be adversely affected by the proposed change, the change shall be made by application for a major revision.

(6) The permittee shall keep accurate records, which shall be made available to the cabinet upon request, showing the source and amount of each shipment of coal combustion by-products that is received.

(7) Prior to disposal of the coal combustion by-products, any material that is not the coal combustion by-products approved for disposal shall be removed from the coal combustion by-products. A record shall be kept of the removed material and its disposition, and this record shall be available at the minesite for examination by the cabinet.

(8) Coal combustion by-products shall be disposed of only in the pit or extraction area from which coal has been removed by surface mining activities; except that coal combustion by-products may be disposed of in areas within the permit area other than coal extraction areas if the applicant demonstrates to the satisfaction of the cabinet, based upon site specific conditions and the characteristics of the coal combustion by-products, that no adverse environmental impacts will occur.

(9) No component of the coal combustion by-products to be disposed of shall be listed or meet the criteria of a hazardous waste in the cabinet's administrative regulations promulgated pursuant to KRS Chapter 224 and the Resource Conservation and Recovery Act of 1976 (Public Law 94-580), as amended.

(10) The permittee shall prepare and maintain accurate maps, which shall be made available to the cabinet upon request, showing each location where coal combustion by-products have been disposed of under this section and the volume of coal combustion by-products disposed of at that location. Phase I bond release shall not be granted for an area containing coal combustion by-products unless the permittee has submitted to the cabinet accurate maps showing the locations and volumes of the coal combustion by-products disposed of under this section.

(11) If requested by the cabinet, or if required by the issued permit, the applicant or permittee shall provide representative samples of the coal combustion by-products to the cabinet in a manner satisfactory to the cabinet.

(12) The permittee shall annually obtain and submit to the cabinet, a laboratory analysis to characterize the coal combustion by-products in the manner required under the cabinet's administrative regulations promulgated pursuant to KRS Chapter 224 and the Resource Conservation and Recovery Act of 1976 (Public Law 94-580), as amended.

(13) If the disposal of coal combustion by-products is proposed, any newspaper advertisements required under KRS 350.055 shall also state that the applicant proposes to dispose of coal combustion by-products in the permit area and shall state the location, business name, and mailing address of the facility that will generate the coal combustion by-products.

(14) The application shall demonstrate that the applicant has the legal right to dispose of coal combustion by-products on the proposed disposal areas. The application shall include a copy of the conveyance that grants or reserves the right to dispose of

waste materials such as coal combustion by-products. If the mineral estate has been severed from the surface estate, the application shall include the written consent of the surface owner for the disposal of coal combustion by-products or a copy of the conveyance that expressly grants or reserves the right to dispose of coal combustion by-products.

(15) The application shall state:

(a) The location, business name, mailing address, and telephone number of the facility that will generate the coal combustion by-products, and the name and title of the responsible official of the generating facility who may be contacted regarding the coal combustion by-products;

(b) Each of the component materials, fly ash, bottom ash, scrubber sludge, or fluidized bed combustion waste that the coal combustion by-products will contain; and

(c) The approximate volume in cubic yards, and the approximate tonnage, of coal combustion by-products that will be received from the generating facility annually and for the term of the permit.

(16) The application shall include the results of representative sampling and laboratory analysis of each component of the coal combustion by-products for contaminants Listed in the cabinet's administrative regulations promulgated pursuant to KRS Chapter 224 and the Resource Conservation and Recovery Act of 1976 (Public Law 94-580), as amended, using analytical testing methods performed in accordance with those administrative regulations. The analysis for metals shall include aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, mercury, silver, thallium, vanadium, and zinc. The analysis shall also include the neutralization potential and potential acidity. The application shall demonstrate that each component of the coal combustion byproducts shall not contain any contaminant at a concentration that equals or exceeds the regulatory level set forth in the cabinet's administrative regulations promulgated pursuant to KRS Chapter 224 and the Resource Conservation and Recovery Act of 1976 (Public Law 94-580), as amended.

(17) The application shall describe the proposed methods of coal combustion by-product handling and disposal, including methods of record keeping.

(18) The application shall include appropriate maps and drawings of all areas and facilities to be used in the permit area for coal combustion by-product handling and disposal.

(19) Each application for disposal of coal combustion by-products shall contain a determination of the probable hydrologic consequences of the disposal of coal combustion by-products for the permit and adjacent area and shall include a description of the measures to be taken to assure that the disposal will not pose a threat to human health or the environment, to minimize disturbances to the hydrologic balance within the permit area and adjacent area, and to prevent material damage to the hydrologic balance outside the permit area. The description shall be

based on the baseline hydrologic, geologic, and other information required under this chapter and shall identify the protective measures to be taken to meet the requirements of this chapter or demonstrate to the satisfaction of the cabinet that protective measures are not necessary for the operation to meet the requirements, considering the characteristics and volume of the coal combustion by-products and the hydrogeologic characteristics of the site determined from the baseline hydrologic, geologic, and other information required under this chapter. The application shall describe the measures to be taken to prevent coal combustion byproducts from becoming airborne.

(20) The application shall include baseline data to characterize the quality of ground water and surface water in areas that may be affected by disposal of coal combustion by-products.

(21) Surface water and ground water baseline data collection and monitoring stations shall be established, as appropriate, to satisfy the requirements of this chapter. In determining the acceptable number and locations of monitoring wells, the cabinet shall recognize the distinct differences between disposal of coal combustion byproducts under this section and the disposal of coal combustion by-products for which a special waste formal permit or a special waste registered permit-by-rule is required under administrative regulations promulgated pursuant to KRS Chapter 224.

(22) The characterization of ground water shall include the parameters of total dissolved solids, or specific conductance corrected to twenty-five (25) degrees Celsius; pH; dissolved iron; dissolved manganese; acidity; alkalinity; sulfate; arsenic; barium; cadmium; chromium; lead; mercury; selenium; and silver; except the cabinet may require different parameters for an application based upon the demonstrated characteristics of the coal combustion by-products.

(23) The characterization of surface water shall include the parameters of total dissolved solids, or specific conductance corrected to twenty-five (25) degrees Celsius; total suspended solids; pH; total iron; total manganese; acidity; alkalinity; sulfate; arsenic; barium; cadmium; chromium; lead; mercury; selenium; and silver; except the cabinet may require different parameters for an application based upon the demonstrated characteristics of the coal combustion by-products.

(24) The minimum number of sampling events for baseline characterization of ground water and surface water for parameters beyond those normally required for surface coal mining operations shall be in accordance with cabinet administrative regulations promulgated pursuant to KRS Chapter 224 pertaining to special waste landfills used solely for the disposal of coal combustion by-products.

(25) The application shall include a plan for the monitoring and reporting, until final bond release on the permit area, of the quality of ground water and surface water in areas that may be affected by disposal of coal combustion by-products and shall provide

for monitoring capable of detecting if contaminants from the coal combustion byproducts are entering ground water and surface water.

(26) The performance bond required under this chapter shall cover the disposal of coal combustion by-products on the permit area.

(27) A permittee, operator, or person disposing of coal combustion by-products under this section shall comply with the following additional environmental protection performance standards:

(a) The coal combustion by-products shall be handled and disposed by the method approved in the permit.

(b) Disposal areas and facilities used for coal combustion by-products handling and disposal shall be designed, located, operated, and maintained to assure that the handling and disposal will not pose a threat to human health or the environment, to minimize disturbances to the hydrologic balance within the permit area and adjacent area, and to prevent material damage to the hydrologic balance outside the permit area, as required under this chapter.

(c) To the extent practicable, areas to receive coal combustion by-products shall be selected to minimize water contact with the coal combustion by-products.

(d) The coal combustion by-products shall be placed at least four (4) feet above the seasonal high water table that is projected to be established after completion of mining and reclamation, unless the applicant demonstrates to the satisfaction of the cabinet, based upon site specific conditions and the characteristics of the coal combustion by-products, that no adverse environmental impacts will occur.

(e) The coal combustion by-products shall not be placed within four (4) feet horizontally of a final highwall, exposed coal seam, or coal outcrop.

(f) The volume of coal combustion by-products disposed of on the permit area shall not exceed the in-place volume of the marketable coal seams to be removed from the permit area.

(g) Disposal of coal combustion by-products shall not result in a greater amount of excess spoil than the amount that would result if disposal of coal combustion by-products were not part of the permitted operation.

(h) The thickness of coal combustion by-products at any point in any disposal area shall not exceed forty (40) feet.

(i) The cabinet may reduce the allowable maximum volume or thickness of coal combustion by-products for a disposal area if the cabinet determines, based upon site specific conditions and the characteristics of the coal combustion byproducts, that the reduction in volume or thickness is necessary to assure protection of human health and the environment.

(j) After the coal combustion by-products are placed in the disposal area, they shall be covered as contemporaneously as practicable with at least four (4) feet of nonacid-forming spoil material.

(28) The permittee shall monitor and report the quality of surface and ground water quarterly, except the monitoring of water quality parameters beyond those normally

required for surface coal mining operations shall be conducted semiannually. The monitoring shall be conducted until final bond release on the permit area; except after four (4) initial monitoring events for the parameters beyond those normally required for surface coal mining operations, if analysis of subsequent monitoring events indicates no exceedences above maximum contaminant levels under cabinet administrative regulations promulgated pursuant to KRS Chapter 224 and the Safe Drinking Water Act of 1974 (Public Law 93-523), as amended, the permittee may, upon request, be granted permission from the cabinet to reduce monitoring parameters required under this chapter. The monitoring and reporting shall comply with the plan approved pursuant to subsection (25) of this section.

(29) The monitoring and reporting of ground water quality shall include the parameters used in the baseline characterization of ground water under subsection (22) of this section, except the cabinet may require different parameters for a permit based upon the demonstrated characteristics of the coal combustion by-products.

(30) The monitoring and reporting of surface water quality shall include the parameters used in the baseline characterization of surface water under subsection (23) of this section, except the cabinet may require different parameters for a permit based upon the demonstrated characteristics of the coal combustion by-products.

(31) The cabinet shall, upon July 15, 1994, process applications submitted under this section in the same manner as other permit applications submitted under this chapter.

(32) The cabinet may promulgate administrative regulations under this section pertaining to the disposal of coal combustion by-products.

Effective: July 15, 1994

History: Created 1994 Ky. Acts ch. 459, sec. 2, effective July 15, 1994.