Regulatory Analysis Form

(Completed by Promulgating Agency)

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SECTION I: PROFILE

(1) Agency:
Environmental Protection

(2) Agency Number.

Identification Number: #7-442

IRRC Number: 2808.

(3) Short Title:
Beneficial Use of Coal Ash

(4) PA Code Cite:
25 *Pa Code* Chapter 290

(5) Agency Contacts (List Telephone Number, Address, Fax Number and Email Address):
Primary Contact: Michele Tate, 717-783-8727
Secondary Contact: Duke Adams, 717-783-8727

(6) Primary Contact for Public Comments (List Telephone Number, Address, Fax Number and Email Address) – Complete if different from #5:

EQB
P.O Box 8477
Harrisburg, PA 17105-8477
Regcomments@state.pa.us

(All Comments will appear on IRRC'S website)

(7) Type of Rulemaking (check applicable box).

- ☐ Proposed Regulation
- ☒ Final Regulation
- ☐ Final Omitted Regulation
- ☐ Emergency Certification Regulation
- ☐ Certification by the Governor
- ☐ Certification by the Attorney General

(8) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

The final-form rulemaking would incorporate §§ 287.661 – 287.666 into new Chapter 290 Subchapter B

and with modifies the provisions regarding the use of coal ash for beneficial use. The amended sections are separated by the following uses of coal ash: as structural fill; a soil substitute or additive; at active coal mining activity sites; at abandoned coal surface mine sites; and other specified beneficial uses, including the manufacture of concrete, extraction or recovery of materials within coal ash, stabilized product, antiskid material, raw material for a commercial product, pipe bedding, mine subsidence control, mine fire control and mine sealing. The modifications include expanded and revised operational and reporting requirements. With this rulemaking, the Department is formalizing the content of several existing technical guidance documents.

The final-form rulemaking includes a new provision at § 290.104(c), which requires an annual filing fee for beneficial use of coal ash at mine sites.

The final-form rulemaking in § 290.201 expands the criteria, which were previously contained in guidance documents, that the coal ash must meet to be certified for the stated beneficial uses. These explicit criteria [illegible] the previous condition under § 287.663 (a) (2) that approval be based upon "Certification Guidelines" to be developed by the Department through policy documents.

The final-form rulemaking includes new provisions at § 290.202, which relate to information regarding revocation of coal ash certification, and § 290.203, which relate to coal ash samples that exceed the certification requirements.

Subchapter D, §§ 290.301- 290.307, contains expanded requirements for groundwater monitoring, standards, assessment, abatement and recordkeeping.

Subchapter E, §§ 290.401 – 290.415, is a new subchapter that addresses requirements for storage of coal ash in piles and surface impoundments.

(9) Include a schedule for review of the regulation including:

A. The date by which the agency received public comments:	December 22, 2009
B. The date or dates on which public meetings or hearings will be held.	December 7 – 10, 2009
C. The expected date of promulgation of the regulation as a final-form regulation:	November 2010
D. The expected effective date of the final-form regulation:	November 2010
E. The date by which compliance with the final-form regulation will be required:	November 2010
F. The date by which required permits, licenses or other approvals must be obtained:	March 2011

(10) Provide the schedule for continual review of the regulation.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

SECTION II: STATEMENT OF NEED

(11) State the statutory authority for the regulation. Include specific statutory citation.

This final-form rulemaking is being made under the authority of the following:

The Solid Waste Management Act (SWMA) (35 P.S. §§6018.101 - 6018.1003), which in Section 105(a) (35 P.S. §6018.105(a)) grants the Board the power and the duty to adopt the rules and regulations of the Department to accomplish the purposes and carry out the provisions of the SWMA. Sections 102(4) and 104(6) of SWMA (35 P.S. §§6018.102 and 104), which provide the Department with the power and duty to regulate the storage, collection, transportation, processing, treatment and disposal of solid waste to protect the public health, safety and welfare. Section 508 of SWMA (35 P.S. §6018.508), which provides the Department with the authority to regulate the beneficial use of coal ash, including establishing siting criteria and design and operating standards governing the storage of coal ash prior to beneficial use and the use and certification of coal ash as structural fill, soil substitutes and soil additives.

The Clean Streams Law (CSL) (52 P.S. § 691.1 - 691.1001), which in Section 5 (35 P.S. §691.5(b)) grants the Department the authority to formulate, adopt, promulgate and repeal the rules and regulations that are necessary to implement the provisions of the CSL Section 402 (35 P.S. §691.402), which grants the Department the authority to adopt rules and regulations that require permits or conditions under which an activity shall be conducted when an activity creates a danger of pollution to waters of the Commonwealth or regulation of an activity is necessary to avoid pollution.

Section 4.2(a) of the Surface Mining Conservation and Reclamation Act (SMCRA), (52 P.S. § 1396.4b (a)), which authorizes the Board to adopt regulations the Department deems necessary to fulfill the purposes and provisions of SMCRA. Section 4(a) of SMCRA (52 P.S. § 1396.4(a)), which authorizes the Department to charge and collect a reasonable filing fee from persons submitting applications for a surface mining permit in order to cover the costs of reviewing and administering such permits. Section 3.2 of the Coal Refuse Disposal Control Act (52 P.S. § 30.53b) (CRDA), which grants the Board the power and duty to adopt regulations to accomplish the purposes of the CRDA.

The Administrative Code of 1929 (71 P.S. §§510-1 - 510-27), which at Section 1917-A (71 P.S. §510-17) authorizes and requires the Department to protect the people of this Commonwealth from unsanitary conditions and other nuisances, including any condition that is declared to be a nuisance by any law administered by the Department. Section 1920-A (71 P.S. 510-20), which grants the Board

the power and duty to formulate, adopt, and promulgate such rules and regulations as may be determined by the Board for the proper performance of the work of the Department.

(12) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

The regulations are not mandated by a federal or state law, court order or federal regulation. There are no relevant state or federal court decisions.

(13) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

Recently there has been renewed interest by the public, industry, environmental groups and government agencies regarding the safety, beneficial use and proper management of coal ash. In 2008, the Department implemented a public process to update and enhance its guidance governing the certification, beneficial use, and storage of coal ash. In 2006, the National Academy of Sciences produced a report entitled *Managing Coal Combustion Residue in Mines* (National Academies Press: Washington, D.C.). It provided several recommendations related to coal ash sampling and testing, water quality monitoring, and management of coal ash. The Department is incorporating the key provisions of the Department's guidance and the National Academy's recommendations into regulation in response to public interest and to affirm the Department's commitment to ensure the environmentally sound management of coal ash.

The citizens of the Commonwealth will be better served by the amendments being proposed in this rulemaking, which are summarized as follows:

- Increased coal ash monitoring to ensure coal ash meets certification criteria;
- Increased water quality monitoring for a longer duration to create a robust dataset to facilitate the evaluation and documentation of water quality at sites where coal ash is beneficially used;
- Requirement for minimum number of monitoring wells to characterize the groundwater or other water quality points;
- Requirement for recording a landowner consent for placement of coal ash for beneficial use;
- Improved reporting requirements to track volumes and location of sites where coal ash is beneficially used;
- Consistent operational and monitoring standards for all types of beneficial use;
- A centralized process to certify coal ash for beneficial use at mine sites;
- An annual fee payable to the Department to offset its costs for coal ash and water quality sampling and testing at mine sites where coal ash is beneficially used;
- Requirements for the storage of coal ash including provisions for design and operations.

Most of the coal ash beneficially used in Pennsylvania for mine reclamation is used in areas that have

existing ground and surface water contamination due to mine drainage. The use of coal ash at these sites is intended to prevent further degradation and, where site conditions are conducive, to provide an overall improvement in groundwater quality. Generally, coal ash is not beneficially used in areas with high quality groundwater, except in special circumstances. For instance, coal ash may be mixed with Portland cement, sand and aggregate to create a grout material and injected into mine voids as a remediation measure for mine subsidence.

(14) If scientific data, studies, references are used to justify this regulation, please submit material with the regulatory package. Please provide full citation and/or links to internet source.

The Department's Mining program has been collecting coal ash quality data and groundwater data in relation to mine sites since the late 1980's. In 2004, the Department produced, in conjunction with Penn State University's Materials Research Institute, the volume entitled *Coal Ash Beneficial Use in Mine Reclamation and Mine Drainage Remediation in Pennsylvania*, which is available at: http://www.dep.state.pa.us/dep/deputate/minres/bmr/beneficial_use/Index.htm (or on CD or printed copy by request). This study was an assessment of the results of beneficial use of coal ash at active and abandoned coal mine sites and demonstration projects.

In 2006, the National Academy of Sciences produced a report entitled *Managing Coal Combustion Residue in Mines* (National Academies Press: Washington, D.C.). This report provides several recommendations related to coal ash sampling and testing, water quality monitoring, and management of coal ash, which have been incorporated into the revised guidance and carried forth into this final-form rulemaking.

A considerable body of scientific research has been developed by various parties over many years regarding the management of coal ash and, specifically, its beneficial use for mine reclamation. The Department continually monitors and reviews that research and resulting reports and has taken all of those efforts under consideration in formulating these final-form regulations.

(15) Describe who and how many will be adversely affected by the regulation. How are they affected?

The final-form rulemaking applies to any person who generates coal ash with the intention of certifying it for beneficial use and those persons using coal ash for beneficial use.

The final-form regulations shift the responsibility of certifying coal ash to the generator of the ash. To certify coal ash, the Department will only accept samples from generators rather than the persons using coal ash for beneficial use. Generators of coal ash will be required to test coal ash for more parameters and on a more frequent basis to maintain certification. Coal Ash certification will be centralized within the Department. Previously, guidance allowed the coal ash to be approved through local District Mining Offices.

Persons using coal ash for beneficial use will be required to track and report volumes of ash from each approved source every year. They will also be required to provide additional information regarding operations, site conditions, water quality and detailed reclamation plans. Additional sampling points,

monitoring parameters, sampling frequency, and standards for well construction have been included. These final-form new and enhanced requirements will increase the cost of the projects where coal ash is beneficially used.

This final-form rulemaking now includes water quality monitoring requirements for all projects that utilize coal ash at a rate of more than 10,000 tons per acre or greater than 100,000 tons overall. Previously, only mine reclamation activities were subject to water quality monitoring.

The final-form regulation will require more planning and monitoring prior to coal ash placement due to the expanded baseline water quality monitoring to 12 months.

Annual fees payable to the Department to cover its costs of sampling coal ash and water quality will increase costs for generators and persons beneficially using coal ash.

SECTION III: COST AND IMPACT ANALYSIS

(17) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The Department has already implemented many of the measures that would be required in the regulations. Guidance documents have implemented the increased monitoring requirements, including sampling frequency, additional chemical parameters to be tested, and additional pre-ash placement and post-ash placement monitoring. Thus, most costs that would be associated with the regulations are already part of the Department's program.

The regulated community will be required to complete four water samples per year for each monitoring point. Typically, two to four monitoring points exist for each site resulting in a water monitoring cost of $2400-$4800 per year. Four ash dry weight/leachate samples are required every year from the generation site. This results in a cost of approximately $2000 per source. Compaction tests for use of coal ash as a structural fill and for mine reclamation must be conducted two times per year at a cost of approximately $150 per test.

These final-form regulations impose an annual assessment of a permit filing fee of $2000 during coal ash placement and $1000 post placement. This fee is required to assure that the Department has funds to conduct comparative sampling of the coal ash and water quality related to individual coal ash beneficial use sites. This fee amount covers the cost of one ash sample (~$500) and five water samples (~$300 x 5) per year.

The costs to implement this program are expected to increase as a result of increased sampling requirements and the addition of a permit fee associated with the beneficial use of coal ash at permitted

mine sites. These costs are justified in order to assure protection of human health and aquatic life and to ensure operational and performance standards for beneficial use of coal ash.

More than 11 million tons of coal ash has been beneficially used for mine reclamation each of the past several years. The estimated cost of disposing this material at a landfill would be at least $275 million per year. Costs of placement at mine sites are on the order of $55 million per year. Use of coal ash at mine sites as opposed to land filling the material is a savings to the industry of at least $220 million per year.

(18) Provide a specific estimate of the costs and/or savings to **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The final-form rulemaking has no compliance, legal, accounting, or consulting effects on local governments. Local governments and citizens would benefit from the beneficial use of coal ash by having hazardous areas remediated in their communities. Under this final-form rulemaking, coal ash may be used by municipalities as an antiskid material making local highways less hazardous. Local governments may also benefit through the restoration of natural areas and improved water quality.

(19) Provide a specific estimate of the costs and/or savings to **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

Additional costs incurred by state government are exclusively to the Department of Environmental Protection. Costs include additional staff time for review of beneficial use applications and source certification requests. The final-form rulemaking mandates reviews that will take more time compared to previous reviews to account for additional information requirements, recordkeeping and inspection. This increased staff time will be absorbed by current staff. The Department's sampling and testing costs for coal ash and water quality are covered, for the most part, through the annual permit filing fee.

(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	$	$	$	$	$	$
Regulated Community	$25,000	$50,000	$50,000	$50,000	$50,000	$50,000
Local Government	0	0	0	0	0	0
State Government	$12,500	$25,000	$25,000	$25,000	$25,000	$25,000
Total Savings	$37,500	$75,000	$75,000	$75,000	$75,000	$75,000
COSTS:						

Regulated Community	$62,500.00	$125,000.	$125,000.	$125,000.	$125,000.	$125,000.
Local Government	0	0	0	0	0	0
State Government	0	0	0	0	0	0
Total Costs	$31,250.00	$125,000.	$125,000.	$125,000.	$125,000.	$125,000.
REVENUE LOSSES:						
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Government	0	0	0	0	0	0
Total Revenue Losses						

(20a) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY -3 2007-2008	FY -2 2008-2009	FY -1 2009-2010	Current FY 2010-2011
Environmental Program Management #161-10382	$39,685,000	$37,664,000	$31,100,000	$29,357,000
Environmental Program Operations #160-10381	$98,574,000	$98,544,000	$84,218,000	$79,344,000

(21) Explain how the benefits of the regulation outweigh any cost and adverse effects.

Coal ash beneficially used to reclaim mine sites in an environmentally safe and responsible manner saves the Commonwealth and the Federal government millions of dollars annually that would be needed to conduct mine reclamation. Further, there is a significant short-term and long-term savings in cost avoidance by eliminating and minimizing the potential for acid mine drainage.

The Department has been beneficially using coal ash for mine reclamation for over 20 years. During that time there have been no significant adverse impacts observed that threatened the public's health or the environment. To the contrary, the Department has observed many improvements to the environment as a result of successful projects.

These final-form regulations respond to environmental and public concerns relating to the beneficial use of coal ash while also minimizing landfill costs to electricity suppliers and industry. Under these regulations certifying coal ash will continue to provide material to remediate thousands of acres of

hazardous mine lands at no cost to the Commonwealth, and also will abate the production of acid mine drainage.

(22) Describe the communications with and input from the public and any advisory council/group in the development and drafting of the regulation. List the specific persons and/or groups who were involved.

The Bureaus of Waste Management, Mining and Reclamation, District Mining Operations and Abandoned Mine Reclamation all collaborated to produce these final-form regulations. The Bureau of Mining and Reclamation has specifically met with industry groups in 2008 representing both the corporate energy facilities and the independent power producers, including Reliant Energy, PPL, and ARIPPA, and individually with various plant operators by request. The Department has also provided information to the Pennsylvania Coal Association and the Pennsylvania Anthracite Council. The Department typically maintains discussions with the American Coal Ash Association and has had several meetings with citizens representing the Clean Air Task Force/Environmental Integrity Project. The concepts in these final-form regulations in the form of technical guidance were presented to the Mining and Reclamation Advisory Board and published in the *Pennsylvania Bulletin* in September 2008. Comments received from industry, citizenry and Department staff were used in the development of this final-form rulemaking. Finally, these final-form regulations were presented to the Solid Waste Advisory Committee in March 2009 and the Citizens Advisory Council in June 2010.

(23) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

Option 1: Cease coal ash beneficial use. This option would dramatically increase the volume of coal ash that is landfilled, thereby decreasing landfill space and creating the need to expand existing landfills or site new landfills within the Commonwealth. This option would also increase electricity production costs that generators would pass on to consumers, and eliminate incentives and opportunities to remediate waste coal piles, reclaim mine lands, and improve water quality.

Option 2: Wait for a federal version of the regulations. Pennsylvania has been regulating the beneficial use of coal ash for 20 years. Through experience and as a result of the public response to final guidance revisions, the Department has already determined that updates and revisions to the regulations are appropriate. The federal regulations will take at least two years, perhaps longer, to enact.

The Department does not believe that either option is in the interest of the Commonwealth. The Department believes this rulemaking is in the interest of, and mutually beneficial for, the public, industry, and the environment. Due to public interest and the commitment of the Department to ensure coal ash is properly managed, the Department believes that existing and final guidance should be incorporated into regulations at this time. These final-form regulations respond to environmental and public concerns relating to the beneficial use of coal ash while also minimizing landfill costs to electric suppliers and industry. Under these regulations, certifying coal ash will continue to provide material to remediate thousands of acres of hazardous mine sites at no cost to the Commonwealth.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

There are no relevant federal requirements with regard the beneficial use of coal ash.

(25) How does this regulation compare with those of other states? How will this affect Pennsylvania's ability to compete with other states?

No other state has enacted regulations that are as comprehensive as Pennsylvania's regulations regarding beneficial use of coal ash. This final-form rulemaking will not adversely affect Pennsylvania's ability to compete with other states. Pennsylvania will continue benefiting from coal mining, the use of coal as a fuel source and the ability to reclaim mine sites with a certified readily available source of material. Because the certification criteria must be satisfied for all sources of coal ash, Pennsylvania is assured that any imported coal ash is of the same quality as coal ash generated out-of-state.

(26) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No.

(27) Submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

The Department has developed standard forms for applying for beneficial use at a mine site and for requesting certification of coal ash source for beneficial use (previously known as "certification"). The operators and coal ash generators use these forms to report all monitoring.

The person beneficially using the coal ash is expected to retain documentation to show that the coal ash used at the approved site was a source that was certified by the Department.

(28) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

There are no special provisions.

CDL-1

FACE SHEET
FOR FILING DOCUMENTS
WITH THE LEGISLATIVE REFERENCE BUREAU

(Pursuant to Commonwealth Documents Law)

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Copy below is hereby approved as to form and legality
Attorney General

By
(Deputy Attorney General)

DATE OF APPROVAL

☐ Check if applicable
Copy not approved Objections attached

Copy below is hereby certified to be true and correct copy of a document issued prescribed or promulgated by

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO 7-442

DATE OF ADOPTION August 30, 2010

BY John Hanger

TITLE JOHN HANGER
CHAIRPERSON

EXECUTIVE OFFICER CHAIRMAN OR SECRETARY

Copy below is hereby approved as to form and legality
Executive or Independent Agencies

BY

Andrew C. Clark
SEP 14 2010
DATE OF APPROVAL

(Deputy General Counsel)
(~~Chief Counsel - Independent Agency~~)
(~~Strike inapplicable title~~)

☐ Check if applicable No Attorney General Approval or objection within 30 days after submission

NOTICE OF FINAL RULEMAKING

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

Beneficial Use of Coal Ash

25 *Pa Code*, Chapters 287 and 290

Notice of Final Rulemaking
Department of Environmental Protection
Environmental Quality Board
(25 *Pa. Code,* Chapters 287 and 290)
(Beneficial Use of Coal Ash)

Order

The Environmental Quality Board (Board) by this order amends 25 *Pa. Code,* Chapter 287 (relating to residual waste management – general provisions) and adds Chapter 290 (relating to beneficial use of coal ash). The regulations pertaining to beneficial use of coal ash in Chapter 287, Subchapter H, are moved to new Chapter 290. Chapter 290 includes requirements for coal ash beneficial use, coal ash certification, water quality monitoring and storage.

This order was adopted by the Board at its meeting of August 30, 2010.

A. Effective Date

These amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final rulemaking.

B. Contact Persons

For further information contact Stephen Socash, Chief, Division of Municipal and Residual Waste, P.O. Box 8472, Rachel Carson State Office Building, Harrisburg, PA 17105-8472, (717) 797-3436; or Susan Seighman, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This final-form rulemaking is available electronically through the DEP Web site (http://www.dep.state.pa.us).

C. Statutory Authority

This final-form rulemaking is authorized under the following statutes:

The Solid Waste Management Act (SWMA) (35 P.S. §§6018.101 - 6018.1003), section 105(a) (35 P.S. §6018.105(a)), grants the Board the power and the duty to adopt the rules and regulations of the Department to accomplish the purposes and carry out the provisions of the SWMA. Sections 102(4) and 104(6) of SWMA (35 P.S. §§6018.102 and 104) provide the Department with the power and duty to regulate the storage, collection, transportation, processing, treatment and disposal of solid waste to protect the public health, safety and welfare. Section 508 of SWMA (35 P.S. §6018.508) provides the Department with the authority to regulate the beneficial use of coal ash, including establishing siting criteria and design and operating standards governing the storage of coal ash prior to beneficial use and the use and certification of coal ash as structural fill, soil substitutes and soil additives.

The Clean Streams Law (CSL) (52 P.S. § 691.1 - 691.1001), section 5 (35 P.S. §691.5(b)), grants the Department the authority to formulate, adopt, promulgate and repeal the rules and regulations that are necessary to implement the provisions of the CSL. Section 402 (35 P.S. §691.402) grants the Department the authority to adopt rules and regulations that require permits or conditions under which an activity shall be conducted when an activity creates a danger of pollution to waters of the Commonwealth or regulation of an activity is necessary to avoid pollution.

Section 4.2(a) of the Surface Mining Conservation and Reclamation Act (SMCRA), (52 P.S. § 1396.4b (a)), authorizes the Board to adopt regulations the Department deems necessary to fulfill the purposes and provisions of SMCRA. Section 4(a) of SMCRA (52 P.S. § 1396.4(a)) authorizes the Department to charge and collect a reasonable filing fee from persons submitting applications for a surface mining permit in order to cover the costs of reviewing and administering such permits. Section 3.2 of the Coal Refuse Disposal Control Act (52 P.S. § 30.53b) (CRDA), grants the Board the power and duty to adopt regulations to accomplish the purposes of the CRDA. Section 5(b) of CRDA (52 P.S. § 30.554(b)) authorizes the Department to charge and collect a reasonable filing fee from persons submitting applications for a coal refuse disposal permit.

The Administrative Code of 1929 (71 P.S. §§510-1 - 510-27), Section 1917-A (71 P.S. §510-17), authorizes and requires the Department to protect the people of this Commonwealth from unsanitary conditions and other nuisances, including any condition that is declared to be a nuisance by any law administered by the Department. Section 1920-A (71 P.S. 510-20) grants the Board the power and duty to formulate, adopt, and promulgate such rules and regulations as may be determined by the Board for the proper performance of the work of the Department.

D. Background of the Amendments

This final-form rulemaking incorporates the key provisions of the Department's policies and procedures on the beneficial use of coal ash. The key provisions address the general and specific operating requirements for beneficial use, which include certification guidelines for the chemical and physical properties of coal ash beneficially used at active and abandoned mine sites. These provisions also relate to water quality monitoring and the storage of coal ash in piles and surface impoundments. This final-form rulemaking also adopts recommendations by the National Academy of Sciences in their 2006 report, *Managing Coal Combustion Residues in Mines*.

Pennsylvania has hundreds of thousands of acres of mine lands that need to be reclaimed. These lands contain many dangerous pits and highwalls that have caused the deaths of numerous citizens over the years. The use of coal ash to reclaim these mines eliminates the dangers associated with the open pits and highwalls and restores a safe environment. Reclamation also restores positive drainage to watersheds by allowing rain water to flow on the surface to streams, rather than infiltrating into spoil or deep mines from which it discharges as acid mine drainage. Reclamation of these lands cannot be accomplished fully through federal and state funds that are currently available for this purpose. Therefore, a program that allows for the beneficial use of

coal ash for mine reclamation in an environmentally responsible manner will allow for the continued reclamation of mine sites and protect the public health and safety and the environment.

The Department has been involved successfully with mine reclamation using coal ash for approximately 25 years. Information on several mine reclamation projects is contained in the 2006 report entitled *Coal Ash Beneficial Use in Mine Reclamation and Drainage Remediation in Pennsylvania*, which was a collaborative effort between the Department and the Materials Research Institute at the Pennsylvania State University.

In addition to unreclaimed mines, more than two billion tons of waste coal piles are scattered across the Anthracite and Bituminous Coal Regions of the Commonwealth. These piles can cause several different types and degrees of adverse impacts on the environment. Waste coal piles produce some of the most severe mine drainage in the state, often having a pH less than 3.0 and acidity in the hundreds to thousands of milligrams per liter, and are also a troublesome source of sediment that has impacted hundreds of miles of stream. Stormwater runoff from waste coal piles also carries large loads of metals including iron, manganese, zinc, nickel, arsenic and cadmium. Finally, waste coal piles can catch fire and produce noxious fumes.

The use of waste coal to fuel power plants has assisted in the elimination of these waste coal piles and remedied the potentially harmful conditions resulting from the continued existence of the piles. To date, 145 million tons of waste coal have been used to fuel power plants. Annually, ten percent of Pennsylvania's power is produced from power plants burning waste coal. The ash that is generated from the waste coal has been used to reclaim thousands of acres of abandoned mines. ARIPPA places a value of at least $90 million worth of reclamation that has been achieved at abandoned mine sites by the coal and power industries through the burning of waste coal and subsequent reclamation, with the coal ash that was generated. Additionally, the Department has observed numerous instances where removal of the piles and reclamation has significantly reduced pollutant loads for metals, such as arsenic, zinc, nickel, iron and manganese.

Prior to this final-form rulemaking, the beneficial use of coal ash, including abandoned and active mine reclamation, was managed through existing residual waste regulations and Department technical guidance. In 2008, the Department proposed amendments to the technical guidance documents "Mine Site Approval for the Beneficial Use of Coal Ash," Document Number 563-2112-225 and "Certification Guidelines for the Chemical and Physical Properties of Coal Ash Beneficially Used at Mines," Document Number 563-2112-224. The most frequent comment received during the public comment period on these amendments was that the content of the technical guidance should be placed in regulations rather than Department technical guidance. The Board agrees with the commentators and has included the key provisions of the technical guidance in this final-form rulemaking and further enhanced the existing residual waste regulations related to the beneficial use of coal ash.

The citizens of the Commonwealth will be better served by the amendments being finalized in this rulemaking, which are summarized as follows:

- Increased coal ash monitoring to ensure coal ash meets qualification criteria;

- Increased water quality monitoring for a longer duration to create a robust dataset to facilitate the evaluation and documentation of water quality at sites where coal ash is beneficially used;
- Requirement for minimum number of monitoring wells to characterize the groundwater or other water quality points;
- Requirement for recording a landowner consent for placement of coal ash for beneficial use;
- Improved reporting requirements to track volumes and location of sites where coal ash is beneficially used;
- Consistent operational and monitoring standards for all types of beneficial use;
- A centralized process to qualify coal ash for beneficial use at mine sites;
- An annual fee payable to the Department to offset some of its costs for coal ash and water quality sampling and testing at mine sites where coal ash is beneficially used;
- Requirements for the storage of coal ash including provisions for design and operations.

Any person who generates coal ash with the intention of qualifying it for beneficial use and person who utilizes that ash will be required to comply with this final-form regulation. Currently, there are about 50 mine sites across Pennsylvania that are actively using ash under the beneficial use provisions. At any given time, there can be as many as 60 approved ash sources. Sources include large multi-unit pulverized coal power plants and fluidized bed combustion (FBC) power plants that can produce hundreds of thousands of tons of ash per year and small industrial power plants that may produce less than 10,000 tons per year. The FBC plants, which burn waste coal, have traditionally used 100% of their ash for mine reclamation. A stated goal of the 43 coal-fired electricity producers of Pennsylvania is to find more ways to beneficially use the coal ash produced at their facilities.

For each of the past several years, about 11 million tons of coal ash has been used for mine reclamation. To date, approximately 20 surface mine sites have been reclaimed using coal ash. In 2008, approximately 11 projects, other than mine reclamation, used coal ash structu construct roadways, an airport runway in Snyder County and a golf course in York County. Many municipalities in Pennsylvania beneficially use bottom ash as antiskid material in the winter months. Currently, eight facilities qualify under a general permit to beneficially u the coal ash produced at that facility as construction material at sites other than mine sites.

The Bureaus of Waste Management, Mining and Reclamation, District Mining Operations and Abandoned Mine Reclamation all collaborated to produce these final-form regulations. The Bureau of Mining and Reclamation met with industry groups in 2008 representing both the corporate energy facilities and the independent power producers, including Reliant Energy, PPL, and ARIPPA, and individually with various plant operators by request. The Department has also provided information to the Pennsylvania Coal Association and the Pennsylvania Anthracite Council. The Department typically maintains discussions with the American Coal Ash Association and has had several meetings with citizens representing Earthjustice and the Environmental Integrity Project. The concepts in these final-form regulations, in the form of technical guidance, were presented to the Mining and Reclamation Advisory Board and published in the *Pennsylvania Bulletin* in September 2008. Comments received from industry, citizenry and Department staff were used in the development of this final-form rulemaking. Finally, these final-

form regulations were presented to the Solid Waste Advisory Committee in May 2010. Draft final regulations were also presented to the Citizens Advisory Council in June 2010.

E. Summary of Regulatory Requirements

§ 287.1

The final-form rulemaking amends definitions for "coal ash," "solid waste" and "structural fill" to provide clarity.

The proposed definition of "water table" was moved to Chapter 290, since the term is only used in that chapter.

§§ 287.661-287.666

The final-form rulemaking deletes §§ 287.661-287.666 (relating to beneficial use of coal ash) and replaces these sections with final-form Chapter 290, Subchapter B.

Subchapter A. General

Final-form § 290 1

The definition of "temporary coal ash storage pile" was added to the final-form rulemaking to allow relief from siting restrictions for storage piles that only exist for periods of less than two weeks.

Final-form § 290.2

Subsection (a) establishes that this chapter applies to the beneficial use of coal ash. It also establishes that fly ash, bottom ash or boiler slag that does not meet the beneficial use requirements (including the performance standards) of Chapter 290 is a residual waste.

Subsection (b) specifies that beneficial use of coal ash mixed with residual waste must be authorized by a residual waste permit and meet the requirements of this chapter. The requirements for ash produced by co-firing coal and alternative fuels was moved to subsection (c) and modified to not require a residual waste permit in all cases.

Subsection (c) was added to the final-form regulation to allow ash produced by co-firing an alternative fuel with coal or waste coal as if it were coal ash, provided the alternative fuel is less than 20 percent of the total fuel and contributes less than ten percent to the total quantity of ash. This change was made to encourage use of alternative fuels and may help offset some of the increased cost to industry due to additional analysis and monitoring required in the final-form regulations.

Subsection (d) specifies that beneficial use of coal ash mixed with construction and demolition waste must be authorized by a municipal waste permit and meet the requirements of this chapter.

Subsection (e) specifies that coal ash mixed with municipal waste, other than construction and demolition waste, shall not be beneficially used by direct placement into the environment. Other beneficial uses may be authorized by a municipal waste permit.

Subsection (f) establishes that beneficial use of coal ash under this chapter does not require a disposal permit.

Subchapter B. Beneficial Use of Coal Ash

Final-form § 290.101

Subsection (a) establishes that use of coal ash under this chapter does not require a disposal permit.

Subsection (b) in the final-form regulation identifies the beneficial use that requires a chemical analysis of the coal ash.

[illegible]ion (c) specifies that the physical characteristics required for certification for the intended beneficial use of the coal ash in Subchapter C must be met.

Subsection (d) establishes that a water quality monitoring plan is required for any structural fill, use at a mining activity site, or use at an abandoned surface coal mine site involving use of more [illegible]000 tons of coal ash per acre or more than 100,000 tons in total per site. The final-form regulations allow the Department to require a water quality monitoring plan where lesser amounts of coal ash are to be beneficially used or coal ash is used for other beneficial uses.

Subsection (e) specifies that coal ash may not be placed within 8 feet of the water table. The final-form regulation has been modified to limit placement within 8 feet of the water table when coal ash is used for mine subsidence control, mine fire control and mine sealing.

Subsection (f) specifies that coal ash may not be used in ways that may cause water pollution.

Final-form § 290.102

Subsection (a) establishes the requirements for a written proposal for coal ash to be used as structural fill. The term was modified in the final-form regulations from written notification to written proposal to avoid confusion with public notice requirements. This written proposal [illegible] description of the project, including maps, estimated project starting and completion dates, construction plans, estimated volume of coal ash to be utilized, chemical analysis and landowner consent. The landowner consent is a recordable document for projects involving use of more than 100,000 tons in total per site or 10,000 tons of coal ash per acre. The 100,000 tons per project trigger for a written proposal was added in the final-form regulations to be consistent with other sections of this chapter.

Subsection (b) specifies that public notices in local newspapers must be published for coal ash structural fill projects involving use of more than 10,000 tons of coal ash per acre or more than

100,000 tons in total per site. The notice shall include name and business address, a brief description of location and scope of the project, and the Departmental office location where the request was sent. Notification to the local municipality has been added to the final-form regulation.

Subsection (c) allows the Department to require public notice for projects less than 10,000 tons per acre and less than 100,000 tons per project where there is significant public interest or site conditions warrant notification.

Subsection (d) establishes that the Department will publish a notice in the Pennsylvania Bulletin of each a written proposal received for use of coal ash as structural fill.

Subsection (e) establishes that the Department will respond in writing to the notifier as to whether their final-form use is consistent with this section.

Subsection (f) establishes additional requirements for coal ash used as structural fill, including compaction and layer thickness, runoff minimization and storm water management, surface water diversion, cover, minimum compaction and dust minimization. The final-form regulation has been modified to indicate that the pH must be 7.0 or above for coal ash used as structural fill to be consistent with other sections in Chapter 290. In addition, the upper pH limit for use as structural fill only applies where public access is not restricted during storage or placement. The requirement that the Proctor Test be conducted by a certified lab has been dropped, since the Department was unable to find an organization that certifies labs for that procedure.

Subsection (g) establishes siting restrictions for structural fill, including distances from streams, water sources, bedrock outcrops, sinkholes and areas draining into sinkholes, floodplains and wetlands. A siting restriction of 300 feet from exceptional value waters and high quality waters was added to protect these special protection waters.

Subsection (h) establishes annual reports required for projects involving use of more than 10,000 tons of coal ash per acre. The report will include contact information, site location, identity of each source of coal ash and the volume and weight of coal ash from each source. The final-form regulations also require this report for projects involving more than 100,000 tons of coal ash in total per site to be consistent with the requirements in other sections.

Subsection (i) was added to the final-form regulation to require the person beneficially using coal ash as structural fill to notify the Department within 72 hours of any evidence that the coal ash may not meet the chemical limits or physical property requirements in § 290.201. This requirement was moved from Subchapter C (relating to certification) to Subchapter B to clarify that it applies to the end user. The time frame was added to clarify that this notification should occur quickly after the evidence is discovered by the end user.

Final-form § 290.103

Proposed Subsection (a), which established that coal ash may be beneficially used as a soil substitute or soil amendment without a permit if the user complies with this section, was deleted in the final-form regulations, since it is addressed in § 290.101(a).

Subsection (a) establishes the written proposal requirements for coal ash to be used as a soil substitute or soil amendment. This written proposal includes a description of the project, including maps, estimated project starting and completion dates, construction plans, estimated volume of coal ash to be utilized, chemical analysis of the coal ash and soil at placement site, an analysis showing the coal ash will be beneficial to productivity or soil properties and landowner consent.

Subsection (b) establishes that the Department will respond to the notifier in writing as to whether their final-form use is consistent with this section.

Subsection (c) establishes additional requirements for coal ash used as a soil substitute or soil amendment, including coal ash and soil pH, calcium carbonate equivalency, surface runoff minimization and storm water management, surface water diversion, application rate, protection of biota and dust minimization. It specifies that coal ash must be either incorporated within 24 hours or stored in accordance with Subchapter E.

Subsection (d) establishes siting restrictions for coal ash used as a soil substitute or soil amendment, including distances from streams, water sources, occupied dwellings, sinkholes and [illegible]aining into sinkholes and wetlands. A siting restriction of 300 feet from exceptional value waters and high quality waters was added to protect these special protection waters.

Subsection (e) establishes cumulative contaminant loading rates for coal ash used as a soil substitute or soil amendment.

Subsection (f) adds recordkeeping requirements to the final-form regulations. The items subject to recordkeeping include chemical analysis and quantity of coal ash utilized, which are necessary to determine cumulative loading rates, as well as source of the coal ash and placement location.

Subsection (g) was added to the final-form regulation to require the person benefi[illegible] coal ash as a soil amendment or soil substitute to notify the Department within 72 hours of any evidence that the coal ash may not meet the chemical limits or physical property requirements in § 290.201. This requirement was moved from Subchapter C (relating to certification) to Subchapter B to clarify that it applies to the end user. The time frame was added to clarify that this notification should occur quickly after the evidence is discovered by the end user.

Final-form § 290 104

Subsection (a) establishes the laws and regulations upon which this section is based.

Subsection (b) establishes the procedures for requesting beneficial use of certified coal ash at a specific mine site.

Subsection (c) establishes the amount of the permit filing fee for permits that will be beneficially using coal ash and where the money will be deposited. This fee was reduced from $2000 to $1000 per year after final placement of coal ash at the site. The costs to monitor sites

incurred by the Department after completion of coal ash placement are expected to be less than the costs during active placement.

Subsection (d) establishes a requirement for public notice.

Subsection (e) establishes appropriate beneficial uses for coal ash at active coal mine sites.

Subsection (f) establishes operational requirements for beneficial use of coal ash at active coal mines. The final-form regulations allow a greater quantity of ash to be beneficially used at a site if the operator can demonstrate that the greater quantity will enhance the reclamation or improve water quality. In addition, the greater quantity may be utilized at a site that is part of a multiple-site project involving multiple coal refuse reprocessing sites. The requirement to run the Proctor Test on each source of coal ash was dropped from the final-form regulations. The requirement that the Proctor Test be conducted by a certified lab was also dropped in the final-form regulations, since the Department was unable to find an organization that certifies labs for that procedure.

Subsection (g) establishes operational requirements for beneficial use of coal ash when used as a soil substitute or soil additive.

Subsection (h) establishes operational requirements for the beneficial use of coal ash at coal refuse disposal sites.

Subsection (i) establishes the requirement for mine site monitoring of coal ash. The final-form regulation allows for a reduced coal ash sampling frequency for end users where the coal ash being utilized is from a single source and the source is close to the placement area.

Subsection (j) establishes annual reporting requirements pertaining to the amount and sources of ash used at a mine site.

Subsection (k) was added to the final-form regulation to require the person beneficially using the coal ash at a mining activity site to notify the Department within 72 hours of any evidence that the coal ash may not meet the certification requirements in § 290.201. This requirement was moved from Subchapter C (relating to certification) to Subchapter B to clarify that it applies to the end user. The time frame was added to clarify that this notification should occur quickly after the evidence is discovered by the end user.

Final-form § 290.105

The term "abandoned coal surface mine" has been changed to "abandoned mine lands" to provide clarity. "Abandoned mine lands" is defined in § 86.252.

Subsection (a) establishes procedures and requirements for the use of coal ash at abandoned mine lands. The final-form regulation requires the approval to be pursuant to a contract with the Department. The Department does not have the authority to issue approvals without a contract for reclamation of abandoned mine lands.

Subsection (b) establishes the elements required in a contract proposal to use coal ash at abandoned mine lands.

Subsection (c) includes a requirement to publish a public notice in local newspapers of the final-form use of coal ash at abandoned mine lands involving use of more than 10,000 tons of coal ash per acre or more than 100,000 tons in total at any site. The final-form regulations also include notification to the local municipalities.

Subsection (d) establishes that the Department will publish a notice in the Pennsylvania Bulletin of each approved use of coal ash at abandoned mine lands.

Subsection (e) establishes additional requirements for coal ash used at abandoned mine lands including: maximum slope of the reclaimed area; compaction and layer thickness; runoff minimization and storm water management; surface water diversion; cover; minimum compaction; dust minimization; minimum distances for ash placement from streams, water sources, sinkholes and areas draining into sinkholes; floodplains; and requirements for the beneficial use of coal ash as a soil substitute or soil additive at abandoned mine lands. The pH as dropped in the final-form regulations as it conflicted with the pH limitation in § 290.201 (relating to coal ash certification).

Subsection (f) establishes the annual reporting requirements pertaining to the amount and sources of coal ash used at abandoned mine lands.

Subsection (g) was added to the final-form regulation to require the person beneficially using coal ash at abandoned mine lands to notify the Department within 72 hours of any evidence that the coal ash may not meet the certification requirements in § 290.201(a). This requirement was moved from Subchapter C (relating to certification) to Subchapter B to clarify that it applies to the end user. The time frame was added to clarify that this notification should occur quickly after the evidence is discovered by the end user.

Final-form § 290 106

Proposed subsection (a), which established that coal ash may be beneficially used as a soil substitute or soil amendment without a permit if the user complies with this section, was deleted in the final-form regulations, since it is addressed in § 290.101(a).

Subsection (a) identifies specific other uses of coal ash and requirements for storage and use. These other uses of coal ash include use in concrete, extraction or recovery of materials and chemicals from coal ash, use of fly ash as a stabilized product, use of bottom ash or boiler slag as antiskid or surface preparation material, use of coal ash as a raw material for a product with commercial value, use as pipe bedding and use for mine subsidence control, mine fire control and mine sealing. The final-form regulations add use in cement and use of coal ash as fuel to the other beneficial uses.

The use as a stabilized product has been modified in the final-form regulations to indicate that if the stabilized product is used as structural fill or as a soil amendment or soil substitute, it must also

meet the requirements in §§ 290.102 or 209.103, respectively. The use of coal ash as drainage material has been deleted from the final-form regulations, since this involves contact with water and the intent with these regulations final-form regulations is to minimize contact with water.

The use of coal ash for mine subsidence control, mine fire control and mine sealing in the final-form regulations requires the person beneficially using coal ash to demonstrate that its use will not cause groundwater contamination. Since these particular uses may be within 8 feet of the water table, the final-form regulation requires the coal ash to undergo cementious reaction after placement.

The final-form regulations allow beneficial use of coal ash with a minimum heating value of 5000 BTU per pound as a fuel.

Subsection (b) was added to the final-form regulation to require the person beneficially using coal ash for these other beneficial uses to notify the Department within 72 hours of any evidence that the coal ash may not meet the appropriate chemical standards or physical property requirements in § 290.201(a). This requirement was moved from Subchapter C (relating to certification) to Subchapter B to clarify that it applies to the end user. The time frame was added to clarify that this notification should occur quickly after the evidence is discovered by the end user.

Final-form § 290.107

Subsection (a) requires persons beneficially using coal ash to provide documentation and information to demonstrate compliance with this subchapter upon the Department's request.

Subsection (b) establishes that failure to have documentation of compliance with this subchapter may lead to a presumption that the person is disposing residual waste without a permit.

Subchapter C. Coal Ash Certification

Final-form § 290.201

Subsection (a) establishes the chemical and physical certification standards for coal ash to meet beneficial use requirements. Chemical leaching standards are established. Low permeability standards are established for ashes that will be used as low permeability material. The final-form regulations allow addition of cement or lime to meet the standards and require disclosure of their addition in the certification request. Minimum calcium carbonate equivalence standards are established for ashes that will be used for alkaline addition. The final-form regulations have lowered the standard for selenium due to an indication from monitoring data that selenium leachability is higher than predicted based on the modeling used to develop standards for other species. Monitoring data has not indicated that there is environmental harm from sulfate when coal ash is beneficially used; therefore, the sulfate standard has been increased in the final-form regulations. The standard for fluoride has been dropped in the final-form regulations, as the Department has insufficient data to determine what an appropriate fluoride standard should be or if it is even necessary. Fluoride determinations in the coal ash and water quality monitoring remain a

requirement of these regulations and the data generated will allow the Department to address this issue in a future rulemaking, if necessary.

Subsection (b) in the proposed regulations, establishing certification exceptions for ashes that meet primary MCL parameters, but fail to meet a secondary MCL parameter, has been deleted in the final-form rulemaking. The exceptions require a site-specific evaluation and are not appropriate for state-wide certification.

Subsection (b) in the final-form rulemaking establishes informational requirements to be provided by the coal combustion waste generator, including sampling and analysis of the ash. The final-form regulations clarify that it is the generator that can request certification and that only the pollution control devices that can impact the chemical or physical properties of the ash need to be identified in the request. The final-form regulations allow the Department to require a different leaching procedure than the specified EPA Method 1312 if other leaching procedures become available that more accurately predict the leaching behavior of coal ash.

Subsection (c) establishes that the Department will provide written notification to the generator the Department's decision on whether the generator's coal combustion waste is certified. If the certification requirements are met, the Department will provide a certification identifier. The terminology was changed from "certification identification number" to "certification identifier" in the final-form regulations, since the identifier is alphanumeric.

Subsection (d) establishes coal combustion waste monitoring requirements. The final-form regulations clarify that reanalysis is required when a change in the fuel source exists that alter the chemical characteristic or physical properties of the coal combustion waste that could adversely impact beneficial use.

Subsection (e) requires the generator of the coal combustion waste to notify the Department of any changes that may affect the coal ash certification. The final-form regulations have notification by the person beneficially using the coal ash to the individual beneficial uses in Subchapter B, since Subchapter C applies to generators.

Final-form § 290.202

Subsection (a) establishes procedures for revoking coal ash certification for coal combustion waste that fail to meet certification requirements. The final-form regulations clarify that certification will be revoked if the generator fails to demonstrate that any exceedence was due to laboratory error or an anomalous result.

Subsection (b) establishes that coal combustion waste with a revoked certification cannot be used at mine sites.

Subsection (c) establishes the procedures for re-certifying a revoked coal combustion waste, including resampling and establishing adequacy of chemical and physical properties.

Final-form § 290.203

This section establishes procedures when exceedances of certification standards occur. The final-form regulation requires the generator to submit documentation within 30 days to demonstrate that any exceedence was due to laboratory error or an anomalous result.

Subchapter D. Water Quality Monitoring

Final-form § 290.301

Subsection (a) establishes that water quality monitoring plans shall be submitted to the Department for approval. The specific citations to when a plan is required have been replaced by the more general reference to Chapter 290.

Subsection (b) establishes the content of water quality monitoring plans, including the location and design of upgradient and downgradient monitoring points, provisions for background sampling prior to placement of coal ash, and quarterly sampling after approval. The final-form regulations do not allow the Department to reduce the number of monitoring points or the frequency of water quality monitoring.

Subsection (c) establishes sources of quality assurance/quality control procedures for sampling and in the laboratory.

Subsection (d) establishes sources of analytical methods used for water quality monitoring and that the laboratory must be accredited.

Subsection (e) specifies the non-metal parameters to be determined in water monitoring samples. The final-form regulations require measurement of pH in both the field and laboratory.

Subsection (f) specifies the metal parameters to be determined in water monitoring samples and that water elevation at monitoring point be recorded.

Subsection (g) gives the Department the ability to require additional parameters based on site conditions. The final-form regulations also give the Department the ability to require additional parameters based on characteristics of the coal ash.

Subsection (h) specifies the minimum frequency and duration of water quality monitoring and allows the Department to require more frequent or longer water quality monitoring if results indicate contamination may be occurring.

Subsection (i) specifies the frequency that water quality monitoring data is to be submitted to the Department. The final-form regulations indicate that this data must be submitted quarterly until five years after final placement, when the frequency is reduced to annually for five additional years.

Subsection (j) establishes that attainment with groundwater remediation standards must be demonstrated if there is water degradation due to placement of coal ash.

Final-form § 290.302

Subsection (a) establishes parameters for the location and number of upgradient and downgradient groundwater monitoring points and that surface water monitoring points must be approved by the Department. The final-form regulations allow the Department to require upstream surface water monitoring where downstream surface water monitoring is required.

Subsection (b) establishes that the number, location and depth of monitoring points must be representative of water quality and located so as not to interfere with site operations. The subsection also specifies the maximum distance from the coal ash placement site. The final-form regulations allow the maximum distance to be measured from the coal ash placement site or the mining activity area, since the maximum distance from the placement area could be in the active mining area. It would be difficult to maintain the integrity of a monitoring well in an area where active mining is occurring. The final-form regulations allow the Department to approve ng points at greater distances if their locations are better for water quality monitoring purposes.

Subsection (c) establishes that upgradient monitoring points be located where they will not be affected by coal ash placement.

Subsection (d) establishes that downgradient monitoring points be located where they be affected by coal ash placement.

Subsection (e) establishes that well drillers must be licensed.

Subsection (f) specifies that well construction materials be decontaminated prior to inst

Final-form § 290 303

Subsection (a) establishes well standards, including casing, diameter, screening, filter packing, viability above ground, and angular space sealing and must be designed to prevent cross contamination. The section also allows alternative casing designs for wells located in stable formations. The final-form regulations allow the Department to approve alternatives to the filter packing requirements, since filter packing is not possible where the monitoring well is within a mine void. The final-form regulations have deleted the requirement for the monitoring wells to be clearly visible due to concerns with vandalism.

Subsection (b) establishes standards for protective casings around well casings, including strength, length above and below surface of ground, collar and grouting, labeling, protrusion above well casing, locked cap and material of construction. The final-form regulations have deleted the requirement for the monitoring wells to be painted in a highly visible color due to concerns with vandalism.

Final-form § 290.304

Subsection (a) establishes when an assessment plan is to be submitted based on monitoring data or data from public or private water supplies. The final-form regulations clarify that the changes in water quality that trigger the requirement for an assessment must be statistically significant degradation, not just any change. The methods for determining whether a change is statistically significant are specified by incorporating 40 CFR § 258.53(g) and (h) by reference.

Subsection (b) in the proposed regulations indicated an assessment is not required if resampling shows degradation is not occurring or if degradation is a result of seasonal variation or activities unrelated to coal ash placement. In the final-form regulations, the assessment is limited to data and a supporting narrative if it can be demonstrated that the degradation is a result of one of those reasons.

Subsection (c) establishes the elements of an assessment plan, including monitoring point location, design and construction information, sampling and analytical methods to be used, an implementation schedule, and identification of the abatement standard. The final-form regulations give the Department the ability to require biological assessment of surface water as part of the assessment plan.

Subsection (d) establishes Department approval and notification of public and private water supplies.

Subsection (e) establishes report contents, including data, analysis, and recommendations.

Subsection (f) establishes procedures for submission of a revised water quality monitoring plan when an abatement plan is not required.

Subsection (g) establishes that the Department may require abatement or water supply replacement prior to or concurrent with the assessment.

Final-form § 290.305

Subsection (a) requires that an abatement plan be submitted to the Department when certain conditions exist. An abatement plan is required when an assessment indicates groundwater or surface water degradation and the analysis under subsection (c) indicate that an abatement standard will not be met at the compliance points. A plan is also required when data from the Department or other person from one or more compliance points indicates an abatement standard has been exceeded. The final-form regulations also require abatement if a biological assessment of surface water indicates a detrimental effect on biota.

Subsection (b) establishes the elements of an abatement plan, including identification of the specific methods or techniques to be used to abate degradation and to prevent future degradation, and an implementation schedule.

Subsection (c) establishes standards for abatement. In the final-form regulations, the word "permitted" in permitted coal ash placement area was deleted, since only coal ash placement at mining activity sites require a permit. The guidelines used to assess health risk have been clarified in the final-form regulations by referencing the Department's Land Recycling Program Technical Guidance Manual. Flexibility has been built in by allowing use of other standard procedures commonly used in the environmental field.

Subsection (d) allows a compliance point to be set for secondary contaminants beyond 500 feet on land owned by the owner of the coal ash placement area.

Subsection (e) establishes a time limit for completion and submittal of abatement plans.

Subsection (f) establishes that the Department may modify inadequate plans.

Subsection (g) establishes a timeframe for implementation of the abatement plan after approval.

Subsection (h) establishes orders that may be issued by the Department if an abatement plan is inadequate after approval or implementation.

Final-form § 290.306

This section establishes recordkeeping requirements for water quality monitoring data.

Final-form § 290.307

This section is new in the final-form rulemaking. Subsection (a) establishes water quality monitoring requirements and transition times for sites where coal ash has and will continue to be beneficially used or stored that were previously not subject to water quality monitoring.

Subsection (b) establishes water quality monitoring requirements and transition times for sites where coal ash has and will continue to be beneficially used or stored that were previously subject to water quality monitoring.

Subchapter E. Coal Ash Storage

Final-form § 290.401

Subsection (a) establishes that best engineering design and construction practices are to be used for all phases of construction and operation.

Subsection (b) specifies that coal ash storage is not to exceed the design capacity of the storage facility.

Subsection (c) specifies that the Department may require a water quality monitoring system to be installed if coal ash storage has the potential to cause groundwater degradation.

Subsection (d) specifies that the person storing coal ash must periodically inspect the storage facility for evidence of failure and take any necessary immediate corrective actions. Records of inspections and corrective actions are to be maintained for 3 years.

Final-form § 290.402

Subsection (a) specifies general maximum storage time limits. The final-form regulations clarify what is meant by "previous year" by adding that the year commences on January 1st. In the final-form regulations, subsection (c) of the proposed regulations was incorporated into this subsection.

Subsection (b) in the proposed regulations, which specified a maximum storage time limit for bottom ash, was deleted from the final-form regulation.

Subsection (b) in the final-form rulemaking establishes that a person storing coal ash in a manner contrary to subsection (a) is presumed to be operating a disposal facility.

Subsection (c) establishes operational record storage retention to overcome the presumption of disposal in subsection (a) or (b).

Subsection (f) of the proposed regulations was deleted as being unnecessary.

Final-form § 290.403

Subsection (a) specifies minimization of surface water runoff from storage areas and storm water management.

Subsection (b) specifies minimization of surface water run-on to storage areas.

Subsection (c) specifies that coal ash is not to be stored in a manner to cause degradation of groundwater. The final-form regulation expanded this to include surface water protection.

Final-form § 290.404

Subsection (a) establishes siting restrictions for coal ash storage, other than in surface impoundments. Restrictions include distances from streams, water sources, bedrock outcrops, sinkholes and areas draining into sinkholes and wetlands. Siting restrictions for exceptional value waters and high quality waters have been added in the final-form regulations, since these are considered special protection waters. These siting restrictions do not apply where coal ash storage is totally enclosed and on an impermeable floor.

Subsection (b) establishes siting restrictions for coal ash storage in surface impoundments. Restrictions include distances from floodplains, streams, water sources, bedrock outcrops, occupied dwellings, property lines, sinkholes and areas draining into sinkholes, wetlands, schools, parks, and playgrounds, and areas underlain by limestone or carbonate formations or areas serving as habitat for endangered or threatened flora or fauna. Siting restrictions for exceptional value

waters and high quality waters have been added, since these are considered special protection waters. The provision for waiver of the siting restriction from public or private water sources by the owner of the water supply in the proposed regulations has been modified to only allow the waiver for private water sources in the final-form regulations. The waiver language for the distance from a school building, park or playground was deleted from the final-form regulations.

Subsection (c) has been added to the final-form regulations to establish siting restrictions for temporary coal ash storage piles (less than 2 weeks in duration). Restrictions include distances from streams and wetlands.

Final-form § 290.405

Subsection (a) establishes a requirement to minimize dispersion of coal ash from storage piles.

Subsection (b) establishes separation distance from the water table for coal ash stored in piles.

Subsection (c) establishes a requirement for berms around storage piles, collection of runoff and and when necessary, treatment of runoff and leachate. The final-form regulations do not require berms for temporary coal ash storage piles due to the short existence of these piles.

Subsection (d) establishes that the Department may require groundwater monitoring for coal ash storage piles without liner systems or pads.

Final-form § 290.406

Subsection (a) establishes that this section applies to storage of coal ash on liners or pads.

Subsection (b) establishes performance and design criteria for the liner system or pad and addresses leachate migration and collection, chemical and physical compatibility, integrity of liner or pad, permeability, constructed so there is no contact with groundwater or surface water, constructed of non-waste and non-coal ash materials, inspection during construction and installation, and, if required by the Department, have a monitoring system capable of detecting whether coal ash or leachate has penetrated the liner or pad.

Final-form § 290.407

Subsection (a) establishes that storage piles with a pad or liner system must have leachate and runoff collection and a leachate storage system. The final-form regulations clarify that the leachate and runoff can be directly sent to a treatment system instead of a leachate storage system.

Subsection (b) establishes design requirements for the leachate storage system that must consist of tanks or impoundments. The requirements address sizing, chemical compatibility, strength, cleanouts, and sealing.

Subsection (c) establishes that leachate treatment or disposal must be in accordance with the Clean Streams Law.

Final-form § 290.408

Subsection (a) establishes that this section and §§ 290.409-290.415 apply to surface impoundments used to store coal ash prior to beneficial use. The citations in the final-form regulations were expanded to include the sections for interim requirements.

Subsection (b) establishes that this section and §§ 290.409-290.415 apply to surface impoundments used to store only stormwater. The citations in the final-form regulations were corrected and expanded to include the sections for interim requirements.

Subsection (c) establishes a definition of stormwater for this section.

Final-form § 290.409

This section establishes that a coal ash surface impoundment must be permitted under the Clean Streams Law and comply with Chapter 105 requirements.

Final-form § 290.410

This section establishes design criteria for coal ash storage impoundments. The criteria include the linear system, subbase location in relation to water table, subbase performance criteria, leachate detection zone, liner performance criteria, protective cover performance criteria, leachate collection system performance criteria, leachate storage system, leachate collection and handling, and design, construction, operation and maintenance.

Final-form § 290.411

Subsection (a) establishes minimum distance to be maintained between the bottom of the liner system's subbase and the water table.

Subsection (b) specifies marking the edge of the liner.

Subsection (c) establishes that a fence or barrier be maintained around the impoundment and the leachate collection and treatment system.

Subsection (d) establishes fugitive air containment control measures for impoundments.

Subsection (e) establishes that water quality monitoring is required for impoundments.

Subsection (f) establishes coal ash removal performance requirements for impoundments and includes removal without damage to the impoundment, liner inspection, providing for the beneficial use of removed coal ash, and ensuring coal ash is not accumulated speculatively.

Final-form § 290.412

Subsection (a) establishes procedures and Department notification if impoundment fails.

Subsection (b) establishes procedures to restore to service impoundments that have failed.

Subsection (c) establishes closure for failed impoundments that cannot be cleaned up in a manner satisfactory to the Department.

Final-form § 290.413

This section establishes that the Department will inspect coal ash storage impoundments.

Final-form § 290 414

This section establishes closure of storage areas, including removal of coal ash and, if required by the Department, regrading and revegetation. The final-form regulations also require removal of other materials as part of closure.

Final-form § 290 415

ection is new in the final-form regulation and provides one year for storage sites previously meeting the requirements in § 299.153 to meet the new storage requirements, unless they are able to demonstrate that the existing storage is protective.

F. <u>Summary of Comments and Responses on the Proposed Rulemaking</u>

The Board received 285 comments regarding the proposed beneficial use of coal ash regulations during the public hearings and public comment period. The comments were received from over 1100 commentators, including 13 industry organizations, 7 environmental groups, the Pennsylvania Chamber of Business and Industry, and the Independent Regulatory Review Commission (IRRC). The commentators ranged from those who consider the current regulations to be sufficient to those who believe the beneficial use of coal ash should be stopped. Most commentators' opinions fell between these two views and many of their comments led to changes in the final-form regulations.

Many commentators noted that after decades of reclamation projects using ash, there have not been negative impacts to the environment. Therefore, implementation of additional requirements is unnecessary and burdensome to industry and may prevent further beneficial use. As stated in the purpose for this rulemaking, the Board saw that there was a need to codify policy into enforceable regulation. The Board also considered the improvements in water quality monitoring and coal ash characterization suggested by the National Academy of Sciences' study and public interest. The final-form regulations meet the stated purpose. Changes have been made to lessen the impact on industry. In § 290.1(c), ash from co-firing alternative fuels with coal can be managed as coal ash. § 290.104(f) provides flexibility for the management of ash from multiple small waste coal piles and the reclamation of those sites. Finally, the permit filing fee in § 290.104(c) has been reduced after coal ash placement is completed.

Some commentators see any requirement that may be waived or modified as a loophole and want them all eliminated. Others want the Department to have the ability to waive or modify

more of the regulatory requirements. Some ability to waive or modify specific requirements based on site conditions is necessary, as a "one-size fits all" approach will not be appropriate in all situations. However, the commentators raised some valid points that resulted in elimination, modification or the addition of waiver language. Examples include: elimination of the waiver in § 290.404(b)(10) of the siting restriction for distance to a public water supply for a coal ash storage impoundment; change from being able to modify the length of background water quality monitoring to only being able to require a longer period in § 290.301(b)(2); and addition of the ability to waive well filter-packing requirements in § 290.303(a)(4).

Some commentators believe that limiting the amount of coal ash to the amount of coal, coal refuse, culm or silt in proposed § 290.104(f) and water quality monitoring requirements proposed in § 290.301 will cause remediation of small piles to cease due to costs associated with water quality monitoring. The final-form regulations allow a greater quantity of ash to be beneficially used at a site if the site is part of a multiple-site project involving multiple coal refuse reprocessing sites. By allowing a greater quantity to be placed at one location of a multiple-site project, the water quality monitoring requirements can be limited to one site, rather than every small pile in the multi-site project.

Several commentators thought the definition of coal ash should be modified in the regulation to allow ash produced by co-combustion of coal with alternative fuels to be considered to be coal ash. However, changing the definition of coal ash to include ash when alternative fuels are used would broaden its definition beyond the coal ash definition in the Solid Waste Management Act. To accommodate the use of alternative fuels, the final-form regulations make allowances in § 290.2(c) for the beneficial use of coal ash produced from co-firing coal with alternative fuels.

Many commentators said that the eight-foot separation to groundwater should never be waived. While the Department had success with a demonstration project in which coal ash was placed directly into a water-filled surface mine, the National Academy of Sciences recommended that coal ash be kept out of direct contact with water. The Board agrees with this recommendation and has removed the waiver language in the final-form § 290.101(e). The eight-foot separation does not apply when coal ash is used for mine subsidence control, mine fire control or mine sealing in the final-form regulation, since the coal ash is required to undergo cementitious reactions for these uses, which will greatly reduce the leachability of the coal ash.

Several commentators suggested replacing leach testing using EPA Method 1312 (Synthetic Precipitation Leaching Procedure or SPLP) in proposed § 290.201(c)(5)(i) with a more costly (estimated by EPA to be $10,000 to $15,000 per sample) leaching procedure developed by Kosson at Vanderbilt University. EPA is currently working on developing this new procedure, which they call the "framework," into a standard procedure. Difficulties in adopting this "framework" procedure include that it has not been accepted as an approved, standard method; interpretation of the results is unclear; and it is a very costly procedure that would replace an inexpensive procedure that has proven itself to be protective. The Board recognizes that improved leaching procedures based on the "framework" or on other research could produce results that are better at predicting leaching of coal ash than SPLP may be developed into standard methods in the future. The final-form regulations specify use of SPLP unless a different leaching procedure is required by the Department.

There were many comments on what triggers the need for an assessment plan under § 290.304. Some commentators indicated a plan should be required when any increase above background occurs. Others indicated that a plan should be required only after an abatement standard is exceeded. Finally, others indicated that a plan should be required only when statistically-significant degradation occurs. Some changes that may exceed background levels are actually beneficial, such as an increase in alkalinity at a site impacted by acid mine drainage, and should not trigger an assessment. Abatement standards may already be exceeded prior to coal ash placement at mine sites. The final-form regulations indicate that an assessment plan is required when statistically significant degradation occurs. A citation to the methods that may be used to determine what is statistically significant has been added.

Some commentators thought liners should be required for any area where coal ash is placed. Coal ash meeting the strict chemical leaching standards for beneficial use in § 290.201 have not negatively affected ground or surface water resources. Liners are not required in the final-form regulations for sites where coal ash is to be beneficially used.

Some commentators indicated that financial assurance should be required for all sites where coal ash is to be beneficially used and that the financial assurance should be adequate upfront to cover the cost of corrective action. Since by statutory definition, beneficially-used coal ash is not solid waste, the Department's ability to require bonding upfront is limited to permitted mine sites. It also has been the Department's position not to require bonding to cover corrective action when problems are not expected to occur, which is the case with beneficial use. The Department does have the ability where degradation occurs to then require financial assurances to cover the Commonwealth's costs for corrective action in case the responsible party does not take sufficient corrective measures. The requested change was not made in the final-form regulations.

Since many of the requirements in these regulations are new, some commentators requested "grandfathering" existing requirements or a timeline for complying with new requirements. Interim requirements have been added in §§ 290.307 and 290.415 for water quality monitoring and storage requirements. Many of the new requirements in these regulations, such as coal ash certification, have already been implemented under Departmental policies, and transition provisions in these areas are unnecessary.

The Independent Regulatory Review Commission requested an explanation as to why the time frames in § 290.301 are appropriate and how the requirements will work with other DEP regulations. There are three timeframes for water quality monitoring in § 290.301: background sampling, sampling during coal ash placement, and sampling during post-placement.

Twelve months of background samples allows for the collection of a complete year of data, which will reflect seasonal variations. This approach allows for comparison with future monitoring results. This approach has worked well for establishing baseline conditions in the Remining Program (Chapter 87, Subchapter F and Chapter 88, Subchapter G).

Quarterly sampling during active placement is designed to capture seasonal variations, while limiting the cost of sampling. This has been the Bureau of Mining and Reclamation's standard

monitoring approach for other aspects of Pennsylvania's mining program and has worked effectively.

Regarding the 10 years of post-placement monitoring, comments received ranged from there should be no regulations (and presumably no monitoring) to suggesting that 30 years should be required. The length of post-placement monitoring is based on Department observations and experience with groundwater systems in coal-bearing rocks and coal mine settings.

G. Benefits, Costs and Compliance

Benefits

The citizens of the Commonwealth will be better served by the amendments being proposed in this rulemaking, which are summarized as follows:

- Increased coal ash monitoring to ensure coal ash meets certification criteria;
- Increased water quality monitoring for a longer duration to create a robust dataset to facilitate the evaluation and documentation of water quality at sites where coal ash is beneficially used;
- Requirement for minimum number of monitoring wells to characterize the groundwater or other water quality points;
- Requirement for recording a landowner consent for placement of coal ash for beneficial use;
- Improved reporting requirements to track volumes and location of sites where coal ash is beneficially used;
- Consistent operational and monitoring standards for all types of beneficial use;
- A centralized process to certify coal ash for beneficial use at mine sites;
- An annual fee payable to the Department to offset its costs for coal ash and water quality sampling and testing at mine sites where coal ash is beneficially used;
- Requirements for the storage of coal ash including provisions for design and operations.

Most of the coal ash beneficially used in Pennsylvania for mine reclamation is used in areas that have existing ground and surface water contamination due to mine drainage. The use of coal ash at these sites is intended to prevent further degradation and, where site conditions are conducive, to provide an overall improvement in groundwater quality. Generally, coal ash is not beneficially used in areas with high quality groundwater, except in special circumstances. For instance, coal ash may be mixed with Portland cement, sand and aggregate to create a grout material and injected into mine voids as a remediation measure for mine subsidence.

Compliance Costs

The Department has already implemented many of the measures that would be required in the regulations. Guidance documents have implemented the increased monitoring requirements, including sampling frequency, additional chemical parameters to be tested, and additional pre-ash placement and post-ash placement monitoring. Thus, most costs that would be associated with the regulations are already part of the Department's program.

The regulated community will be required to complete four water samples per year for each monitoring point. Typically, two to four monitoring points exist for each site resulting in a water monitoring cost of $2400-$4800 per year. Four ash dry weight/leachate samples are required every year from the generation site. This results in a cost of approximately $2000 per source. Compaction tests for use of coal ash as a structural fill and for mine reclamation must be conducted two times per year at a cost of approximately $150 per test.

These final-form regulations impose an annual assessment of a permit filing fee of $2000 during coal ash placement and $1000 post placement. This fee is required to assure that the Department has funds to conduct comparative sampling of the coal ash and water quality related to individual coal ash beneficial use sites. This fee amount covers the cost of one ash sample (~$500) and five water samples (~$300 x 5) per year.

Sampling requirements have increased from the previous regulations, and the filing fee adds these additional costs. These costs are justified in order to assure protection of human health and aquatic life and to ensure operational and performance standards for beneficial use of coal ash.

' ' than 11 million tons of coal ash has been beneficially used for mine reclamation each of the past several years. The estimated cost of disposing this material at a landfill would be at least $275 million per year. Costs of placement at mine sites are on the order of $55 million per year. Use of coal ash at mine sites as opposed to land filling the material is a savings to the industry of at least $220 million per year.

Compliance Assistance Plan

The public will be informed through Department publications, the Internet, and other mass media.

Paperwork Requirements

The Department has developed standard forms for applying for beneficial use at a mine site and for requesting certification of coal ash source for beneficial use. The operators and coal ash generators use these forms to report all monitoring.

The person beneficially using the coal ash is expected to retain documentation to show that the coal ash used at the approved site was a source that was certified by the Department. Annual reports are required for use as structural file, abandoned coal surface mine sites and at mining activity sites.

H. Pollution Prevention

The Federal Pollution Prevention Act of 1990 established a national policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. DEP encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials, or the incorporation of energy efficiency strategies. Pollution prevention practices can

provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance. This regulation has incorporated the following pollution prevention provisions and incentives:

The rulemaking will not modify the pollution prevention approach by the regulated community and maintains the multi-media pollution prevention approach of existing requirements in 25 Pa. Code.

I. Sunset Review

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

J. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on October 28, 2009, the Department submitted a copy of the notice of proposed rulemaking, published at 39 *Pa.B.* 6429, to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing these final-form regulations, the Department has considered all comments from IRRC, the Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act, on ___(blank)___, these final-form regulations were deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on ____(blank)____ and approved the final-form regulations.

K. Findings of the Board

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder at *1 Pennsylvania Code* §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law, and all comments were considered.

(3) These regulations do not enlarge the purpose of the proposal published at 39 *Pennsylvania Bulletin* 6429 (Saturday, November 7, 2009).

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

L. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department of Environmental Protection, *25 Pennsylvania Code,* Chapters 287 and 290, are amended to read as set forth in Annex A.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to the Independent Regulatory Review Commission and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.

(e) This order shall take effect immediately.

BY:

JOHN HANGER
Chairperson
Environmental Quality Board

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

ARTICLE IX. RESIDUAL WASTE MANAGEMENT

CHAPTER 287. RESIDUAL WASTE MANAGEMENT—GENERAL PROVISIONS

Subchapter A. GENERAL

§ 287.1. Definitions.

The following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Coal ash—**FOR PURPOSES OF CHAPTERS 287 AND 290,** **[~~Fly~~]** **FLY** ash, bottom ash or boiler slag resulting from the combustion of coal, that is or has been beneficially used, reused or reclaimed for a commercial, industrial or governmental purpose. The term includes such **[~~the~~]** materials that are stored, processed, transported or sold for beneficial use, reuse or reclamation. For purposes of **[~~this article~~]** **CHAPTER 288**, the term also includes fly ash, bottom ash or boiler slag resulting from the combustion of coal, that is not and has not been beneficially used, reused or reclaimed for a commercial, industrial or governmental purpose.

* * * * *

Solid waste—Waste, including, but not limited to, municipal, residual or hazardous waste, including solid, liquid, semisolid or contained gaseous materials. The term does not include coal ash that is beneficially used under **[Subchapter H]** **Chapter 290** (relating to beneficial use **of coal ash**) or drill cuttings.

* * * * *

Structural fill—The engineered use of coal ash **[~~material~~]** as a base or foundation for a construction activity that is completed promptly after the placement of the coal ash **[~~material~~]**, including the use of coal ash as **[a]** backfill **[material]** for retaining walls, foundations, ramps or other structures. The term does not include valley fills or the use of **[~~coal ash or~~]** solid waste to fill open pits from coal or noncoal mining.

* * * * *

[~~*Water table*~~—

~~(i) The top of the saturated zone.~~

~~(ii) The term includes the regional groundwater table, perched water tables, seasonal high water table and [the surface of] mine pools.~~]

* * * * *

Subchapter C. GENERAL REQUIREMENTS FOR PERMITS AND PERMIT APPLICATIONS

GENERAL

§ 287.101. General requirements for permit.

* * * * *

(b) A person or municipality is not required to obtain a permit under this article, [illegible] ply with the bonding or insurance requirements of Suchapter E (relating to bondir and insurance requirements) or comply with Subchapter B (relating to duties of generators) for one or more of the following:

* * * * *

(3) The beneficial use of coal ash under [~~Subchapter H~~] **CHAPTER 290** (relating to beneficial use **OF COAL ASH**).

Subchapter H. BENEFICIAL USE

SCOPE

§ 287.601. Scope.

(a) This subchapter sets forth requirements for the processing and beneficial use of residual waste**[, including coal ash, and sets forth requirements for certain beneficial uses of coal ash]**. Sections 287.611, 287.612, 287.621—287.625, 287.631, 287.632, 287.641—287.644, 287.651 and 287 652 establish procedures and standards for general permits for the beneficial use or processing of residual waste **[other than certain uses of**

coal ash, and § § 287.661—287.666 (relating to beneficial use of coal ash) establish procedures and standards for certain beneficial uses of coal ash].

* * * * *

[BENEFICIAL USE OF COAL ASH]

(*Editor's Note*: As part of this final rulemaking, the Board is rescinding the text of §§ 287.661—287.666 **AND § 299.153** which appear in 25 Pa. Code pages 287-140—287-150 **AND 299-18—299-19**, serial pages (273506) to (273516) **AND (273866 TO 273867**.)

§§	**287.661—287.666.**	**[Reserved.]**
§	**299.153**	**[RESERVED]**

(*Editor's Note*: This Chapter 290 under Article IX is new and printed in regular type to enhance readability.).

CHAPTER 290. BENEFICIAL USE OF COAL ASH

Subch.

A. GENERAL
B. BENEFICIAL USE OF COAL ASH
C. COAL ASH CERTIFICATION
D. WATER QUALITY MONITORING
E. COAL ASH STORAGE

Subchapter A. GENERAL

Sec.

290.1 DEFINITIONS
[~~290.1~~] 290.2 Scope.

§ 290.1 DEFINITIONS

THE FOLLOWING WORDS AND TERMS, WHEN USED IN THIS CHAPTER, HAVE THE FOLLOWING MEANINGS, UNLESS THE CONTEXT CLEARLY INDICATES OTHERWISE:

***TEMPORARY COAL ASH STORAGE PILE*—A PILE IN WHICH COAL ASH IS STORED FOR NOT MORE THAN 2 WEEKS.**

***WATER TABLE*—**

(i) THE TOP OF THE SATURATED ZONE.

(ii) THE TERM INCLUDES THE REGIONAL GROUNDWATER TABLE, PERCHED WATER TABLES, SEASONAL HIGH WATER TABLE AND MINE POOLS.

§ [~~290.1.~~] 290.2. Scope.

(a) This chapter sets forth requirements for beneficial use of coal ash. **FLY ASH, BOTTOM ASH OR BOILER SLAG RESULTING FROM THE COMBUSTION OF COAL THAT IS NOT BENEFICIALLY USED IN ACCORDANCE WITH THIS CHAPTER IS A RESIDUAL WASTE AND IS SUBJECT TO REGULATION UNDER OTHER CHAPTERS IN THIS ARTICLE.**

(b) If coal ash is mixed with residual waste [~~or ash produced by co-firing coal or waste coal with an alternative fuel~~], the beneficial use must be authorized by a permit issued under [**this article**] **CHAPTER 287, SUBCHAPTER H (RELATING TO RESIDUAL WASTE MANAGEMENT—GENERAL PROVISIONS, BENEFICIAL USE)** and the requirements of this chapter must be met.

(c) IF COAL ASH IS PRODUCED BY CO-FIRING COAL OR WASTE COAL WITH AN ALTERNATIVE FUEL:

(1) BENEFICIAL USE OF SUCH MATERIAL IS REGULATED UNDER THIS CHAPTER AS COAL ASH IF THE ALTERNATIVE FUEL IS LESS THAN 20% BY WEIGHT OF THE TOTAL FUEL MIXTURE, AS BURNED, AND CONTRIBUTES LESS THAN 10% BY WEIGHT OF TOTAL ASH QUANTITY.

(2) BENEFICIAL USE MUST BE AUTHORIZED BY A PERMIT ISSUED UNDER CHAPTER 287, SUBCHAPTER H AND THE REQUIREMENTS OF THIS CHAPTER MUST BE MET IF THE ALTERNATIVE FUEL IS EQUAL TO OR GREATER THAN 20% BY

WEIGHT OF THE TOTAL FUEL MIXTURE, AS BURNED, OR CONTRIBUTES EQUAL TO OR GREATER THAN 10% BY WEIGHT OF TOTAL ASH QUANTITY.

[~~(c)~~] **(d)** If coal ash is mixed with construction and demolition waste, the beneficial use must be authorized under a permit issued under Article VIII **(RELATING TO MUNICIPAL WASTE)** and the requirements of this chapter must be met.

[~~(d)~~] **(e)** Coal ash mixed with municipal waste, other than construction and demolition waste, shall not be beneficially used by direct placement into the environment. Other types of beneficial use of coal ash mixed with municipal waste may be authorized by a permit issued under Article VIII (relating to municipal waste) and any applicable requirements of this chapter must be met.

[~~(e)~~] **(f)** Beneficial use activities that are subject to and meet the requirements of this chapter are not required to obtain an individual disposal permit under this article.

Subchapter B. BENEFICIAL USE OF COAL ASH

Sec.

§ 290.101. General requirements for [~~the~~] beneficial use [~~of coal ash~~].

(a) Coal ash may be beneficially used without a permit from the Department under the act if the person proposing the use complies with this chapter. [~~Use of coal ash that is not consistent with this chapter is considered disposal and must be authorized under a disposal permit from the Department under the act and the regulations promulgated thereunder.~~]

(b) Chemical analysis must demonstrate that the coal ash does not exceed any of the maximum acceptable leachate levels in § 290.201(a) (relating to coal ash certification) **WHEN COAL ASH IS PROPOSED TO BE USED PURSUANT TO §§ 290.102--290.105, § 290.106(a)(3) OR § 290.106(a)(7)**. The minimum sampling and analysis procedures must satisfy the requirements in

§ 290.201[~~(c)~~]**(b) AND (d)** (relating to coal ash certification). [~~**The Department may waive or modify this requirement for uses under § 290.106 (b)(1)--(3) (relating to other beneficial uses of coal ash).**~~]

(c) The coal ash must satisfy the physical characteristics for the intended use in § 290.201(a) (relating to coal ash certification).

(d) A water quality monitoring plan in accordance with § 290.301 (relating to water quality monitoring) and, if applicable, Chapters 86—90 must be developed and implemented if either more than 10,000 tons of coal ash per acre [~~**is to be used on a project**~~] or more than 100,000 tons of coal ash in total will be used [~~**at a project**~~] **AS STRUCTURAL FILL, AT A COAL MINING ACTIVITY SITE, OR AT AN ABANDONED MINE LAND SITE**. Contiguous projects will be considered a single project for purposes of this section. The Department may require a water quality monitoring plan for projects involving lesser quantities of coal ash **or for other beneficial uses of coal ash** where site conditions warrant. [~~**The Department may waive or modify this requirement for uses under § 290.106(b)(1)-(6).**~~]

(e) Coal ash may not be placed within 8 feet of the water table, [~~**unless the Department approves placement within 8 feet at a coal mining activity site [based upon a demonstration that groundwater contamination will not occur]**~~] **EXCEPT WHERE COAL ASH IS USED FOR MINE SUBSIDENCE CONTROL, MINE FIRE CONTROL OR MINE SEALING PURSUANT TO § 290.106(a)(7).**

(f) Coal ash may not be used in a way that causes water pollution.

§ 290.102. Use [~~**of coal ash**~~] as structural fill.

(a) At least 60 days before using coal ash as structural fill, the person proposing the use shall submit a written **PROPOSAL** [~~**notice**~~] to the Department. The **WRITTEN PROPOSAL** [~~**notice**~~] must contain, at a minimum, the following information:

(1) A description of the nature, purpose and location of the project, including a topographic map showing the project and available soils maps of the area of the project.

(2) The estimated beginning and ending dates for the project.

(3) Construction plans for the structural fill, including a stability analysis when necessary, which shall be prepared by a [~~**registered**~~] **LICENSED** professional engineer in accordance with sound engineering practices and which shall be signed and sealed by the engineer.

(4) An estimate of the volume of coal ash to be used for the project.

(5) A [~~bulk~~] **TOTAL** chemical and leaching analysis **PURSUANT TO §§ 290.201(a)(1) AND (a)(2) (RELATING TO COAL ASH CERTIFICATION)** for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis and the analysis is not older than 1 year, the person may submit a copy of the analysis that was approved.

(6) A signed statement by the owner of the land on which the structural fill is to be placed, acknowledging and consenting to the **BENEFICIAL** use of coal ash as structural fill.

(7) The statement by the landowner in paragraph (6) shall be a recordable document for any project, or set of contiguous projects involving placement of more than 10,000 tons of coal ash per acre **OR MORE THAN 100,000 TONS OF COAL ASH IN TOTAL PER PROJECT**. Prior to beneficial use of more than 10,000 tons of coal ash per acre **OR MORE THAN 100,000 TONS OF COAL ASH IN TOTAL PER PROJECT** under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed coal ash beneficial use will take place.

(b) [~~The Department will publish a summary of each notice in the *Pennsylvania Bulletin*.~~]

[~~(c)~~] A person proposing to use coal ash as structural fill where more than 10,000 tons of coal ash per acre [~~is to~~] **WILL** be used on a project or more than 100,000 tons of coal ash in total will be used at a project shall place, at the time of filing a [~~request~~] **WRITTEN PROPOSAL** with the Department, [~~an advertisement~~] **A PUBLIC NOTICE** in a local newspaper of general circulation in the locality of the proposed coal ash beneficial use activities at least once a week for 3 consecutive weeks. Contiguous projects will be considered a single project for purposes of this section. **A COPY OF THE PUBLIC NOTICE SHALL BE PROVIDED TO THE LOCAL MUNICIPALITY AND PROOF OF PUBLIC NOTICE SHALL BE SUBMITTED TO THE DEPARTMENT.** [~~The Department may require public notice for projects involving less than 10,000 tons of coal ash per acre if the Department determines that the proposed beneficial use activities are of significant interest to the public or site conditions warrant.~~] At a minimum, the **PUBLIC** notice must contain the following information:

(1) The name and business address of the person proposing to beneficially use coal ash.

(2) A brief description of the location and scope of the proposed beneficial use.

(3) The location of the [~~public~~] **DEPARTMENT** office where a copy of the [~~request~~] **WRITTEN PROPOSAL** [~~that is being or was sent~~] **SUBMITTED** to the Department is available for public inspection.

(c) THE DEPARTMENT MAY REQUIRE PUBLIC NOTICE FOR PROJECTS INVOLVING LESS THAN 10,000 TONS OF COAL ASH PER ACRE OR LESS THAN 100,000 TONS OF COAL ASH IN TOTAL IF THE DEPARTMENT DETERMINES THAT THE PROPOSED BENEFICIAL USE ACTIVITIES ARE OF SIGNIFICANT INTEREST TO THE PUBLIC OR SITE CONDITIONS WARRANT.

(d) THE DEPARTMENT WILL PUBLISH A SUMMARY OF EACH WRITTEN PROPOSAL IN THE *PENNSYLVANIA BULLETIN.*

(e) AFTER RECEIVING THE INFORMATION REQUIRED BY SUBSECTION (a) THE DEPARTMENT WILL INFORM, IN WRITING, THE PERSON THAT PROVIDED THE INFORMATION WHETHER THE PROPOSED USE OF COAL ASH AS STRUCTURAL FILL IS CONSISTENT WITH THIS SECTION.

[~~(d)~~] **(f)** For coal ash [~~to be~~] **BEING** beneficially used as a structural fill, the following additional requirements must be satisfied:

(1) The pH of the coal ash as placed must be [~~in the range of 6.0 to 9.0~~] **7.0 OR ABOVE**, unless otherwise approved by the Department. Lime may be added to raise pH. **THE pH OF THE COAL ASH MUST NOT BE ABOVE 9.0 DURING PLACEMENT AND STORAGE AT THE SITE OF PLACEMENT UNLESS PUBLIC ACCESS IS RESTRICTED.**

(2) The slope of a structural fill may not be greater than 2.5 horizontal to 1.0 vertical. The Department may approve a greater slope based on a demonstration of structural stability.

(3) Coal ash shall be spread uniformly and compacted in layers not exceeding 2 feet in thickness. The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(4) Surface runoff from the fill area shall be minimized during filling and construction activity. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1--691.1001) and the regulations promulgated thereunder.

(5) Surface water shall be diverted away from the disturbed area during filling and construction activity.

(6) Coal ash shall be covered with 12 inches of soil, unless infiltration is prevented by other cover material.

(7) Coal ash must achieve a minimum compaction of 90% of the maximum dry density as determined by the Modified Proctor Test, or 95% of the maximum dry density as determined by the Standard Proctor Test. **[~~Ash from each source shall be tested individually. The Proctor Test shall be conducted by a certified laboratory.~~]**

(8) The offsite dispersion of dust from coal ash and other materials shall be minimized.

[~~(e)~~] **(g)** Coal ash used as structural fill may not be located:

(1) Within 100 feet of an intermittent or perennial stream **OR WITHIN 300 FEET OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1 (RELATING TO DEFINITIONS),** unless the structural fill is otherwise protected by a properly engineered diversion or structure that is permitted by the Department under the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27).

(2) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

(3) Within 25 feet of a bedrock outcrop, unless the outcrop is properly treated to minimize infiltration into fractured zones or otherwise approved by the Department.

(4) Within 100 feet of a sinkhole or area draining into a sinkhole.

(5) Within a 100-year floodplain of a water of this Commonwealth, unless a properly engineered dike, levee or other structure that can protect the structural fill from a 100-year flood is permitted by the Department in a manner that is consistent with the Flood Plain Management Act (32 P. S. §§ 679.101—679.601), the Storm Water Management Act (32 P. S. §§ 680.1—680.17) and the Dam Safety and Encroachments Act.

(6) In or within 100 feet of a wetland, other than an exceptional value wetland.

(7) In or within 300 feet of an exceptional value wetland.

[~~(f)~~] **(h)** **[~~Prior to January 31, any~~]** **A** person that **[~~placed~~]** **PROPOSED** more than 10,000 tons of coal ash per acre **OR MORE THAN 100,000 TONS OF COAL ASH IN TOTAL** at any project or contiguous projects **[~~in the previous calendar year~~]** shall submit **[~~a~~]** **TO THE DEPARTMENT PRIOR TO JANUARY 31 AN ANNUAL** report for the previous calendar year **[~~to the~~**

~~Department~~] that includes contact information, the location of the site where the coal ash was utilized, the identity of each source of coal ash, and the volume in cubic yards and the weight in dry tons for each source.

(i) A PERSON BENEFICIALLY USING COAL ASH UNDER THIS SECTION MUST NOTIFY THE DEPARTMENT WITHIN 72 HOURS OF ANY EVIDENCE THAT THE MATERIAL DOES NOT MEET THE CHEMICAL STANDARDS OR PHYSICAL PROPERTY REQUIREMENTS IN § 290.201 (RELATING TO COAL ASH CERTIFICATION).

§ 290.103. Use [~~of coal ash~~] as a soil substitute or soil additive.

(a) **[~~Coal ash may be beneficially used as a soil substitute or soil additive without a permit from the Department under the act if the person proposing the use complies with this section.~~**

At least 60 days before using coal ash as a soil substitute or soil additive, the person proposing the use shall submit a written **[~~notice~~]** **PROPOSAL** to the Department. The **[~~notice~~]** **WRITTEN PROPOSAL** must contain, at a minimum, the following information:

(1) A description of the nature, purpose and location of the project, including a topographic map showing the project area and available soils maps of the project area. The description must include an explanation of how coal ash will be stored prior to use, how the soil will be prepared for the application of coal ash, how coal ash will be spread and, when necessary, how coal ash will be incorporated into the soil.

(2) The estimated beginning and ending dates for the project.

(3) An estimate of the volume of coal ash to be used for the project, the proposed application rate and a justification for the proposed application rate.

(4) A **TOTAL** chemical and leaching analysis and pH **PURSUANT TO §§ 290.201(a)(1) AND (a)(2) (RELATING TO COAL ASH CERTIFICATION)** for the coal ash to be used in the project. If the coal ash was generated at a facility for which the Department has previously approved a chemical and leaching analysis and the analysis is not older than 1 year, the person may submit a copy of the analysis that was approved.

(5) A chemical analysis **FOR CONSTITUENTS LISTED IN SUBSECTION (e)** of the soil on which the coal ash is proposed to be placed.

(6) An analysis showing how the application of coal ash will be beneficial to the productivity or properties of the soil to which it is proposed to be applied. The analysis shall be prepared and signed by an expert in soil science.

(7) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the use of coal ash as a soil substitute or soil additive.

[~~(c)~~] **(b)** After receiving the information required by subsection [~~(b)~~] **(a)**, the Department will inform **IN WRITING** the person that provided the information whether the proposed use of coal ash as a soil substitute or soil additive is consistent with this section.

[~~(d)~~] **(c)** Coal ash used as a soil substitute or soil additive may not be considered a beneficial use unless the following requirements are met:

(1) The pH of the coal ash and the pH of the soil must be in the range of 6.5 to 8.0 when mixed together in the manner required by the project, as shown by field and laboratory testing. Lime may be added to raise pH.

(2) Chemical analysis demonstrates the coal ash satisfies the minimum calcium carbonate equivalency requirement in § 290.201(a) (relating to coal ash certification).

(3) Surface runoff from the project area shall be controlled during the project. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1--691.1001) and the regulations promulgated thereunder.

(4) Coal ash shall be incorporated into the soil within 48 hours of application, unless otherwise approved by the Department. The coal ash shall be incorporated into the top 1-foot layer of surface soil. If 1 foot of surface soil is not present, coal ash may be combined with the surface soil that is present until the layer of combined surface soil and coal ash is 1 foot. The coal ash required for the beneficial use is limited to the amount necessary to enhance soil properties or plant growth.

(5) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(6) Coal ash may not be applied to soil being used for agriculture where the soil pH is less than 5.5.

(7) Coal ash may not be applied if resultant chemicals or physical soil conditions would be detrimental to biota.

(8) The offsite dispersion of dust from coal ash and other materials shall be minimized.

[~~(e)~~] **(d)** Coal ash may not be used as a soil substitute or soil additive:

(1) Within 100 feet of an intermittent or perennial stream**, OTHER THAN EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1 (RELATING TO DEFINITIONS)**, or a wetland other than an exceptional value wetland.

(2) In or within 300 feet of an exceptional value wetland**, OR OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1**.

(3) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

(4) Within 100 feet of a sinkhole or area draining into a sinkhole.

Within 300 feet measured horizontally from an occupied dwelling, unless the current owner has provided a written waiver consenting to the activities closer than 300 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.

[~~(f)~~] **(e)** Coal ash may not be used as a soil substitute or soil amendment in amounts that exceed the following maximum cumulative loading rates:

[Contaminant] CONSTITUENT	**Cumulative [~~Contaminant~~] Loading Rate**
arsenic	36 lbs/acre (41 kg/hectare)
boron	60 lbs/acre (67.2 kg/hectare)
cadmium	34 lbs/acre (38 kg/hectare)
chromium	2,672 lbs/acre (3,104 kg/hectare)
copper	1,320 lbs/acre (1,490 kg/hectare)
lead	264 lbs/acre (296 kg/hectare)
mercury	15 lbs/acre (17 kg/hectare)
molybdenum	16 lbs/acre (18 kg/hectare)
nickel	370 lbs/acre (420 kg/hectare)
selenium	88 lbs/acre (99 kg/hectare)
zinc	2,464 lbs/acre (2,780 kg/hectare)

(f) A PERSON SUBJECT TO THE REQUIREMENTS OF THIS SECTION SHALL RETAIN RECORDS OF CHEMICAL AND PHYSICAL ANALYSES, THE QUANTITY OF COAL ASH UTILIZED, THE LOCATION OF PLACEMENT AND THE SOURCES OF COAL ASH FOR A MINIMUM OF 3 YEARS AFTER THE BENEFICIAL USE HAS CEASED. THE RECORDS SHALL BE MADE AVAILABLE TO THE DEPARTMENT UPON REQUEST.

(g) A PERSON BENEFICIALLY USING COAL ASH UNDER THIS SECTION MUST NOTIFY THE DEPARTMENT WITHIN 72 HOURS OF ANY EVIDENCE THAT THE MATERIAL DOES NOT MEET THE CHEMICAL STANDARDS OR PHYSICAL PROPERTY REQUIREMENTS IN § 290.201.

§ 290.104. Beneficial use [~~of coal ash~~] at coal mining activity sites.

(a) *Coal ash approval at coal mining activity sites.* Approval for the beneficial use of coal ash at coal mining activity sites as defined in § 86.1 (relating to definitions) will, at a minimum, be based on the following:

(1) Compliance with this section, The Clean Streams Law (35 P.S. §§ 691.1—691.1001) and the regulations promulgated thereunder, the Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1—1396.19a), the Coal Refuse Disposal Control Act (52 P. S. §§ 30.51—30.66), the applicable provisions of Chapters 86—90 (relating to surface and underground coal mining: general, surface mining of coal, anthracite coal, underground mining of coal and coal preparation facilities, and coal refuse disposal), and other applicable environmental statutes and regulations promulgated thereunder.

(2) Certification under § 290.201 (relating to coal ash certification) by the Department for the intended beneficial uses.

(3) Approval of a request submitted pursuant to subsection (b).

(b) *Request.* A person shall submit to the Department a request to beneficially use the certified coal ash at a specific coal mining activity site as part of the reclamation plan under the mining permit. This request must contain the permit filing fee in subsection (c) and, at a minimum, the following:

(1) A narrative description of the project, including an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.

(2) Information demonstrating that the coal ash has been certified for its intended use in accordance with § 290.201, including the identity of the generator and the **DEPARTMENT-ASSIGNED** certification **[~~number~~] IDENTIFIER, AS DESCRIBED IN § 290.201(c).**

(3) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash. This statement by the landowner shall be a recordable document. Prior to beneficial

use of coal ash under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed beneficial use of coal ash will take place.

(4) A monitoring plan that meets the requirements of Subchapter D (relating to water quality monitoring).

(c) *Permit filing fee.*

(1) A non-refundable permit filing fee payable to the "Commonwealth of Pennsylvania" for the beneficial use of coal ash at a coal mining activity site is to be paid annually in the amount of:

(i) $2,000 **FOR EACH COAL MINING ACTIVITY SITE APPROVED TO USE COAL ASH UNTIL THE YEAR FOLLOWING FINAL PLACEMENT OF COAL ASH AT THE SITE.** **[~~This annual filing fee is to be paid until final bond release for the coal mining activity site.~~]**

(ii) $1,000 FROM THE YEAR FOLLOWING FINAL PLACEMENT OF COAL ASH UNTIL FINAL BOND RELEASE HAS BEEN ISSUED FOR THE COAL MINING ACTIVITY SITE.

(2) Money received from the permit filing fee for the beneficial use of coal ash will be deposited in the Surface Mining Conservation and Reclamation Fund and will be used by the Department for the cost of reviewing, administering and enforcing the requirements of the authorization for beneficial use of coal ash under the coal mining activity permit.

(3) The Department will review the adequacy of the fees established in this section at least once every 3 years and provide a written report to the EQB. The report will identify any disparity between the amount of program income generated by the fees and the costs to administer these programs, and it shall contain recommendations to adjust fees to eliminate the disparity, including recommendations for regulatory amendments to adjust program fees.

(d) *Public notice* A person proposing to use coal ash at coal mining activity sites shall provide public notice pursuant to § 86.31 or § 86.54 (relating to public notices of filing of permit applications; and public notice of permit revision).

(e) *Operating requirements.* The beneficial use of coal ash for reclamation purposes at a coal mining activity site shall be designed to achieve an overall improvement in water quality or shall be designed to prevent the degradation of water quality. Coal ash shall only be beneficially used for reclamation at the following locations:

(1) The pit or area from which coal is extracted under a surface coal mining permit.

(2) Abandoned [~~coal mining areas~~] **MINE LANDS** located within the surface coal mining permit area.

(3) Coal refuse disposal sites and coal refuse reprocessing sites.

(4) [~~Other~~] **AREAS WHERE OTHER** beneficial uses that are part of the approved reclamation plan at the coal mining activity site **ARE BEING CONDUCTED**.

(f) *Additional operating requirements for the placement of coal ash at* ***PERMITTED*** *coal surface mining* ***ACTIVITY*** *[~~and coal refuse reprocessing~~] sites.* [~~The following applies to placement of coal ash at coal surface mining and coal refuse reprocessing sites~~] **PLACEMENT OF COAL ASH AT COAL SURFACE MINING ACTIVITY SITES SHALL COMPLY WITH THE FOLLOWING ADDITIONAL REQUIREMENTS**:

(1) The volume of coal ash placed at the site may not exceed the volume of coal, coal refuse, culm or silt removed from the site by the active mining operation on a cubic yard basis unless **OTHERWISE** approved by the Department. **THE DEPARTMENT MAY AUTHORIZE A GREATER VOLUME OF COAL ASH WHERE THE MINE OPERATOR DEMONSTRATES THAT RECLAMATION WILL BE ENHANCED OR WATER QUALITY WILL BE IMPROVED BY THE ADDITIONAL COAL ASH.**

(2) Placement of coal ash shall be accomplished by mixing with spoil material or by spreading in horizontal layers no greater than 2 feet thick unless otherwise approved by the Department. The reclamation plan of the approved mining permit must address the placement of the coal ash.

(3) The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(4) [~~Coal~~] **WHERE PLACEMENT OF COAL ASH IS NOT BEING ACCOMPLISHED BY MIXING WITH SPOIL, THE PLACED COAL** ash must achieve a minimum compaction of 90% of the maximum dry density as determined by the Modified Proctor Test, or 95% of the maximum dry density as determined by the Standard Proctor Test. [~~Ash from each source must be tested individually.~~] The Proctor Test shall be conducted [~~by a certified laboratory~~] on a semiannual basis unless the Department requires more frequent testing.

(5) [~~For coal refuse reprocessing sites where refuse material is presently deposited in large surface piles, the piles must not be rebuilt with coal ash. The placement of coal ash shall be accomplished in a manner that blends into~~

~~the general surface configuration, and complements the surface drainage pattern of the surrounding landscape.~~

~~(6)~~] For a project involving multiple refuse reprocessing sites, the Department may allow a greater volume of coal ash to be placed at an individual site than the volume of coal refuse removed from that site if the following conditions are met:

(i) [~~A single person shall control a project~~] **THE MULTIPLE SITES ARE A PROJECT** involving the coordinated use of multiple coal refuse reprocessing sites.

(ii) A reclamation plan is approved for each of the sites and each plan identifies the total cubic yards of coal ash that may be placed at each site.

(iii) The total cubic yards of coal ash placed on the sites is less than the total cubic yards of refuse, culm or silt removed from the **COMBINED** sites. [~~Only coal ash from the integrated project can be used.~~]

(iv) The [~~integrated~~] project shall be designed to achieve an overall improvement of surface water or groundwater quality at each site, where acid mine drainage is evident. If acid mine drainage is not evident, the project shall be designed to prevent degradation of the surface or groundwater quality.

(v) **ONLY COAL ASH FROM THE PROJECT CAN BE USED.**

(vi) The [~~integrated~~] project shall be accomplished in a manner that blends into the general surface configuration and complements the surface drainage pattern of the surrounding landscape.

[~~(7)~~] **(6)** The person shall maintain information identifying the sources and the volume in cubic yards and the weight in dry tons of coal ash used.

[~~(8)~~] **(7)** The site shall be monitored in accordance with the requirements of Subchapter D **AND ANY ADDITIONAL HYDROLOGIC TESTS SPECIFIED BY THE DEPARTMENT**.

[~~(9)~~] **(8)** The offsite dispersion of dust from coal ash and other materials shall be minimized.

(g) *Additional operating requirements for the beneficial use of coal ash as a soil substitute or soil additive.* The following apply to the beneficial use of coal ash as a soil substitute or soil additive:

(1) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(2) The coal ash that is applied will be part of the approved reclamation plan of the coal mining activity in order to increase the productivity or properties of the soil.

(3) The coal ash is not used in amounts that exceed the maximum cumulative loading rates in § 290.103[~~(f)~~](e) (relating to use of coal ash as a soil substitute or soil additive).

(4) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(h) *Additional operating requirements for the beneficial use of coal ash at coal refuse disposal sites.* The following apply to the beneficial use of coal ash at coal refuse disposal sites:

(1) Placement of coal ash as part of coal refuse disposal operations permitted under Chapters 86—90 must meet the following:

(i) The cubic yards of coal ash does not exceed the total cubic yards of coal refuse to be disposed based on uncompacted volumes of materials received at the site.

(ii) The coal ash has physical and chemical characteristics that meet the following requirements:

(A) Improve compaction and stability within the fill.

(B) Reduce infiltration of water into coal refuse.

(C) Improve the quality of leachate generated by the coal refuse.

(2) The offsite dispersion of dust from coal ash and other materials shall be minimized.

(i) *Additional coal ash sampling.* A person using coal ash at a coal mining activity site shall, each quarter that coal ash is being used at the site, sample the **COAL** ash after it has been placed at the site and such sample shall be analyzed in accordance with § 290.201[~~(e)(5)~~]. The results of the analysis shall be submitted quarterly to and in the format required by the Department. **A REDUCED FREQUENCY MAY BE APPROVED BY THE DEPARTMENT WHERE A COAL MINING ACTIVITY SITE IS RECEIVING COAL ASH FROM ONLY ONE SOURCE AND IS LOCATED AT ONE OF THE FOLLOWING:**

(1) ON THE SAME TRACT OF LAND WHERE THE COAL ASH WAS GENERATED.

(2) ON A TRACT OF LAND CONTIGUOUS TO THE TRACT WHERE THE COAL ASH WAS GENERATED.

(3) ON A TRACT OF LAND CONNECTED TO THE TRACT WHERE THE COAL ASH WAS GENERATED BY A RIGHT-OF-WAY CONTROLLED BY THE GENERATOR AND TO WHICH THE PUBLIC DOES NOT HAVE ACCESS.

(4) ON A TRACT OF LAND SEPARATED FROM THE TRACT WHERE THE COAL ASH WAS GENERATED BY ONLY A PUBLIC OR PRIVATE RIGHT-OF-WAY AND ACCESS BETWEEN THE TWO TRACTS IS BY CROSSING RATHER THAN TRAVELING ALONG THE RIGHT-OF-WAY.

(j) *Annual Report.* Prior to January 31, the permittee of a coal mining activity site where coal ash was placed in the previous calendar year shall submit a report for the previous calendar year to the Department that includes permit number, [illegible]g company contact information, the identity of each source of coal ash and its **DEPARTMENT-ASSIGNED** certification **[~~number~~]** **IDENTIFIER**, and the volume in cubic yards and the weight in dry tons for each source of coal ash that [illegible]laced at the site.

(k) A PERSON BENEFICIALLY USING COAL ASH UNDER THIS SECTION MUST NOTIFY THE DEPARTMENT WITHIN 72 HOURS OF ANY EVIDENCE THAT THE MATERIAL DOES NOT MEET THE CERTIFICATION REQUIREMENTS IN § 290.201.

§ 290.105. [~~Coal ash beneficial~~] BENEFICIAL use at abandoned [~~coal surface~~] mine [~~sites~~] LANDS.

(a) ***RECLAMATION CONTRACT WITH THE*** *Department* **[~~*Approval*~~]** Coal ash may be beneficially used **FOR THE PURPOSES OF RECLAMATION** at abandoned **[~~coal surface~~]** mine **[~~sites~~]** **LANDS, AS DEFINED IN § 86.252 (RELATING TO DEFINITIONS), ONLY** if the reclamation work is **[~~approved in writing by~~]** **PERFORMED PURSUANT TO A CONTRACT WITH** the Department. The beneficial use of coal ash at abandoned **[~~coal surface~~]** mine **[~~sites~~]** **LANDS** will, at a minimum, be based on the following:

(1) **[~~Beneficial use of the coal ash must comply~~]** **COMPLIANCE** with this section and the applicable environmental statutes and regulations promulgated thereunder.

(2) **[~~The coal ash is certified~~]** **CERTIFICATION** under § 290.201 (relating to coal ash certification) by the Department for the intended use.

(3) APPROVAL OF A CONTRACT PROPOSAL SUBMITTED PURSUANT TO SUBSECTION (b).

(b) [~~*Request.*~~] *CONTRACT PROPOSAL.* [~~The request~~] **A PROPOSAL** for the use of coal ash at abandoned mine [~~sites~~] **LANDS** must contain the following:

(1) A narrative description of the project, including an estimated beginning date and ending date for the project, an explanation of how coal ash will be placed, where and how coal ash will be stored prior to placement, identification of the sources of coal ash and an estimate of the cubic yards of coal ash to be used. For the beneficial use of coal ash as a soil substitute or additive, the proposed application rate and justification for the application rate shall also be included.

(2) Information demonstrating that the coal ash has been certified for its intended use in accordance with § 290.201, including the identity of the generator and the **DEPARTMENT-ASSIGNED** certification [~~identity number~~] **IDENTIFIER, AS DESCRIBED IN § 290.201(c)**.

(3) Reclamation plans, including a stability analysis, when necessary, prepared by a [~~registered~~] **LICENSED** professional [~~engineered~~] **ENGINEER** in accordance with sound engineering practice and signed and sealed by the engineer.

(4) A signed statement by the owner of the land on which the coal ash is to be placed, acknowledging and consenting to the placement of coal ash. This statement by the landowner shall be a recordable document. Prior to beneficial use of coal ash under this section, the statement by the landowner shall be recorded at the office of the recorder of deeds in the county in which the proposed coal ash beneficial use will take place.

(5) A water quality monitoring plan[~~, if applicable~~] **CONSISTENT WITH THE REQUIREMENTS IN § 290.101(d) (RELATING TO GENERAL REQUIREMENTS FOR BENEFICIAL USE)**.

(c) [~~(6)~~] *PUBLIC NOTICE.* **AS A CONDITION OF CONTRACT AWARD, A** [~~A~~] person proposing to use coal ash for reclamation involving use of more than 10,000 tons of coal ash per acre on a project or more than 100,000 tons of coal ash in total at any project shall place [~~at the time of filing a request with the Department,~~] an advertisement in a local newspaper of general circulation in the locality of the proposed coal ash beneficial use activities at least once a week for 3 consecutive weeks. Contiguous projects will be considered a single project for purposes of this section. The Department may require public notice for projects involving lesser amounts of coal ash if the Department determines that the proposed beneficial use activities are of significant interest to the public or site conditions warrant. **IF PUBLIC NOTICE IS REQUIRED, A COPY SHALL BE PROVIDED TO THE LOCAL MUNICIPALITY AND PROOF OF NOTICE SHALL BE SUBMITTED TO THE DEPARTMENT.** At a minimum, the notice must contain the following information:

(i) The name and business address of the person proposing to beneficially use coal ash.

(ii) A brief description of the location and scope of the proposed beneficial use.

(iii) The location of the public office where a copy of the **[~~request that is being or was sent~~]** **CONTRACT PROPOSAL SUBMITTED** to the Department is available for public inspection.

[~~(c) *Approved under contract* Contracts issued by the Department for the reclamation of abandoned coal surface mine sites may include the beneficial use of coal ash. The beneficial use of coal ash for the reclamation of abandoned coal surface mine sites will, at a minimum, be based on the conditions established in subsection (a).~~

(d) *Department notification.* The Department will publish a summary of each **[~~request or~~]** contract in the *Pennsylvania Bulletin*.

(e) *Operating requirements.* The use of coal ash as part of the reclamation activity at abandoned **[~~coal surface~~]** mine **[~~sites~~]** **LANDS** must satisfy the following additional requirements:

(1) **[~~The pH of the coal ash as placed must be in the range of 6.0 to 9.0, unless otherwise approved by the Department. Lime may be added to raise pH.~~**

~~(2)~~] The slope of the reclaimed area may not be greater than 2.5 horizontal to 1.0 vertical. The Department may approve a greater slope based on a demonstration of stability.

[~~(3)~~] **(2)** Coal ash shall be spread uniformly and compacted in layers not exceeding 2 feet in thickness **UNLESS OTHERWISE APPROVED BY THE DEPARTMENT**. The coal ash shall be spread and compacted within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

[~~(4)~~] **(3)** Surface runoff from the reclamation area shall be minimized during construction activity. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1--691.1001) and the regulations promulgated thereunder.

[~~(5)~~] **(4)** Surface water shall be diverted away from the disturbed area during construction activity.

[~~(6)~~] **(5)** Coal ash shall be covered with 12 inches of soil, unless infiltration is prevented by other cover material.

[~~(7)~~] **(6)** Coal ash must achieve a minimum compaction of 90% of the maximum dry density as determined by the Modified Proctor Test, or 95% of the maximum dry density as determined by the Standard Proctor Test. Ash from each source shall be tested individually. **[~~The Proctor Test shall be conducted by a certified laboratory.~~]**

[~~(8)~~] (7) The offsite dispersion of dust from coal ash and other materials shall be minimized.

[~~(9)~~] (8) Coal ash used for reclamation may not be [~~located~~] PLACED:

(i) Within 100 feet of an existing intermittent or perennial stream, unless the [~~reclamation area is otherwise protected by a properly engineered diversion or structure that is permitted by the Department under the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27) or the ash has been placed as a low permeability material to function as an aquatard as part of an engineered stream channel restoration~~] PERSON DEMONSTRATES TO THE DEPARTMENT'S SATISFACTION THAT ASH PLACEMENT WITHIN 100 FEET OF THE STREAM IS NECESSARY TO REMEDIATE ABANDONED MINE FEATURES LOCATED WITHIN 100 FEET OF THE STREAM.

(ii) WITHIN 300 FEET OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1 (RELATING TO DEFINITIONS), UNLESS THE PERSON DEMONSTRATES TO THE DEPARTMENT'S SATISFACTION THAT ASH PLACEMENT WITHIN 300 FEET OF THE WATERS IS NECESSARY TO REMEDIATE ABANDONED MINE FEATURES LOCATED WITHIN 300 FEET OF THE WATERS.

[~~(ii)~~] (iii) Within 300 feet of a water supply unless the person obtains, in a form acceptable to the Department, a written waiver from the owner of the water supply, allowing for another distance.

[~~(iii)~~] (iv) Within 100 feet of a sinkhole or area draining into a sinkhole.

[~~(iv)~~] (v) Within a 100-year floodplain of a water of this Commonwealth, unless a properly engineered dike, levee or other structure that can protect the reclamation area from a 100-year flood is permitted by the Department in a manner that is consistent with the Flood Plain Management Act (32 P. S. §§ 679.101—679.601), the Storm Water Management Act (32 P. S. §§ 680.1—680.17) and the Dam Safety and Encroachments Act.

[~~(v)~~] (vi) In or within 100 feet of a wetland, other than an exceptional value wetland.

[~~(vi)~~] (vii) In or within 300 feet of an exceptional value wetland.

[~~(10)~~] (9) The following apply to the beneficial use of coal ash as a soil substitute or soil additive:

(i) Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment.

(ii) The coal ash that is applied will be part of the approved reclamation plan in order to increase the productivity or properties of the soil.

(iii) The coal ash is not used in amounts that exceed the maximum cumulative loading rates in § 290.103[~~(f)~~]**(e)** (relating to use of coal ash as a soil substitute or soil additive).

(f) *Annual Report*. Prior to January 31, any person that placed coal ash at an abandoned mine **LAND** site in the previous calendar year shall submit a report for the previous calendar year to the Department that includes company contact information, the identity of the reclamation contract with the Department [~~or approval by the Department~~], the identity of each source of coal ash and its **DEPARTMENT-ASSIGNED** certification [~~identity number~~] **IDENTIFIER**, and the volume in cubic yards and the weight in dry tons for each source of coal h that was placed at the site.

(g) A PERSON BENEFICIALLY USING COAL ASH UNDER THIS TION MUST NOTIFY THE DEPARTMENT WITHIN 72 HOURS OF ANY EVIDENCE THAT THE MATERIAL DOES NOT MEET THE CERTIFICATION REQUIREMENTS IN § 290.201.

§ 290.106. Other beneficial uses [~~of coal ash~~].

(a) [~~This section sets forth beneficial uses of coal ash other than use as a structural fill, soil substitute or soil additive.~~

~~(b)~~] The following uses of coal ash are deemed to be beneficial and do not require a permit from the Department under the act provided the uses are consistent with the requirements of this section:

(1) The use of coal ash in the manufacture of concrete **OR CEMENT**. The coal ash shall be utilized within 24 hours of its delivery to the site unless stored in accordance with Subchapter E (relating to coal ash storage).

(2) The extraction or recovery of one or more materials and compounds contained within the coal ash if the following conditions are met:

(i) Storage of coal ash before and after extraction or recovery shall be subject to Subchapter E.

(ii) Disposal of the unrecovered fraction of coal ash shall be subject to the applicable requirements for residual waste.

(3) The use of fly ash as a stabilized product. Other uses of fly ash in which physical or chemical characteristics are altered prior to use or during placement

will be considered a beneficial use under this section if the following conditions are met:

(i) The person proposing the use has first given advance written notice to the Department.

(ii) The [~~coal~~] **FLY** ash is not mixed with solid waste, unless otherwise approved, in writing, by the Department prior to the use.

(iii) The use of the [~~coal~~] **FLY** ash results in a demonstrated reduction of the potential of the [~~coal ash~~] **MATERIAL** to leach constituents into the environment.

(iv) IF FLY ASH IS USED AS STRUCTURAL FILL, THE REQUIREMENTS OF § 290.102 (RELATING TO USE AS STRUCTURAL FILL) MUST BE MET.

(v) IF FLY ASH IS USED AS A SOIL AMENDMENT, THE REQUIREMENTS OF § 290.103 (RELATING TO USE AS A SOIL SUBSTITUTE OR SOIL ADDITIVE) MUST BE MET.

(4) The use of bottom ash or boiler slag as an antiskid material or road surface preparation material, if the use is consistent with Department of Transportation specifications or other applicable specifications. The use of fly ash as an antiskid material or road surface preparation material is not deemed to be a beneficial use.

(5) The use of coal ash as raw material for a product with commercial value, including the use of bottom ash in construction aggregate. Storage of coal ash prior to processing is subject to Subchapter E.

(6) The use of coal ash as [~~drainage material or~~] pipe bedding, if the person proposing the use has first given advance written notice to the Department, and has provided to the Department an evaluation of the pH of the coal ash and a chemical analysis of the coal ash.

(7) The use of coal ash for mine subsidence control, mine fire control and mine sealing, if the following requirements are met:

(i) The person proposing the use gives advance written notice to the Department.

(ii) [~~The pH of the coal ash is in a range that will not cause or allow the ash to contribute to water pollution.~~]

[~~(iii)~~] [~~The use~~] **IF A PROJECT IS FUNDED BY OR THROUGH THE DEPARTMENT, USE** of the coal ash [~~in projects funded by or through the~~

~~Department is~~] **SHALL BE** consistent with applicable Departmental requirements and contracts.

[~~(iv)~~] **(iii)** The coal ash shall be utilized within 24 hours of its delivery to the site unless stored in accordance with Subchapter E.

(iv) THE COAL ASH WILL UNDERGO CEMENTITIOUS REACTIONS AFTER PLACEMENT.

(8) THE USE OF COAL ASH AS A FUEL, PROVIDED IT HAS A MINIMUM HEATING VALUE OF 5,000 BTU/LB. STORAGE OF COAL ASH PRIOR TO USE AS A FUEL IS SUBJECT TO SUBCHAPTER E.

(b) A PERSON BENEFICIALLY USING COAL ASH UNDER THIS SECTION MUST NOTIFY THE DEPARTMENT WITHIN 72 HOURS OF ANY EVIDENCE THAT THE MATERIAL DOES NOT MEET APPROPRIATE CHEMICAL STANDARDS OR PHYSICAL PROPERTY REQUIREMENTS IN § 290.201 (RELATING TO COAL ASH CERTIFICATION).

(c) A PERSON SUBJECT TO THE REQUIREMENTS OF THIS SECTION SHALL RETAIN RECORDS OF CHEMICAL AND PHYSICAL ANALYSES, THE QUANTITY OF COAL ASH UTILIZED, THE LOCATION OF PLACEMENT AND THE SOURCES OF COAL ASH FOR A MINIMUM OF 3 YEARS AFTER THE BENEFICIAL USE HAS CEASED. THE RECORDS SHALL BE MADE AVAILABLE TO THE DEPARTMENT UPON REQUEST.

§ 290.107. Requests for information.

(a) The Department may request documents and other information from a person to demonstrate that the person is conducting or proposing to use coal ash in a manner that is compliant with this subchapter **AND THE PERSON SHALL MAKE THE DOCUMENTS AND INFORMATION AVAILABLE TO THE DEPARTMENT UPON REQUEST**.

(b) Failure to have documentation of compliance with this subchapter may lead to a presumption that the person is disposing [~~of~~] residual waste without a permit.

Subchapter C. COAL ASH CERTIFICATION

Sec.

§ 290.201. Coal ash certification.

(a) Certification standards are as follows:

(1) Maximum acceptable leachate levels for certification:

(i) For metals and other cations **OTHER THAN SELENIUM**, 25 times the waste classification standard for a contaminant.

(ii) **FOR SELENIUM, 10 TIMES THE WASTE CLASSIFICATION STANDARD.**

(iii) For **[~~contaminants~~]** **NONMETALS AND ANIONS** other than **[~~metals and cations~~]** **SULFATE AND FLUORIDE**, the waste classification standard for a contaminant.

(iv) FOR SULFATE, 10 TIMES THE WASTE CLASSIFICATION STANDARD.

(2) The pH of **[~~the~~]** coal ash must be **[~~above~~]** 7.0 **OR ABOVE** **[~~for mine backfilling, alkaline addition, or use as low-permeability material~~]**.

(3) For coal ash used as an alkaline additive, **[~~whether as a placement fill or as an alkaline soil additive,~~]** the calcium carbonate equivalency, as determined by the Neutralization Potential Test in the Department's *Overburden Sampling and Testing Manual* (Noll, et al., 1988) or other method approved by the Department, must be a minimum of 100 parts per thousand (10 % by weight).

(4) For coal ash used as a low permeability material, the hydraulic conductivity **[~~(permeability)~~]** of the coal ash must be 1.0×10^{-6} cm/sec or less based on hydraulic conductivity testing using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Perimeter) or other method approved by the Department. **[~~An additive may be used with the coal ash to meet this hydraulic conductivity.~~]** Hydraulic conductivity testing should use compaction and other preparation techniques that will duplicate the expected conditions at the mine site.

(5) THE DEPARTMENT MAY APPROVE THE ADDITION OF LIME OR CEMENT TO COAL ASH TO ACHIEVE THE REQUIREMENTS OF THIS SUBSECTION. USE OF THESE CONDITIONERS MUST BE DESIGNATED AS PART OF THE REQUEST IN SUBSECTION (b).

(b) **[~~Certification may be granted for use of a coal ash not meeting all the appropriate standards in subsection (a) if the following conditions are met:~~]**

~~(1) The coal ash will be used only at a specified mine site(s). The coal ash certification is limited for use only at the specified site.~~

~~(2) Only standards based on secondary MCLs (aluminum, chloride, iron, manganese, sulfate, silver and zinc) are exceeded. All other limits shall be met.~~

~~(3) The mine site operator can demonstrate that use of the coal ash at these levels will not adversely impact the surface water or groundwater quality and that the use of the coal ash will achieve an overall benefit in groundwater quality.~~

~~(c)~~] A request **BY THE GENERATOR** for coal ash certification must contain the following information on a form provided by the Department:

(1) The name and location of the generator of the coal ash.

(2) A designation of the beneficial use or uses for which certification is requested

(3) A description of the [~~coal ash~~] generation process specific to the generator, including the combustion **PROCESS,** and pollution control processes **THAT IMPACT THE CHEMICAL CHARACTERISTICS OR PHYSICAL PROPERTIES OF THE COAL ASH**, the fuel sources utilized, and the expected percentages of coal ash derived from different processes that will be incorporated into the final coal ash stream to be delivered to the beneficial use site.

(4) A description of the physical properties and chemical characteristics of any material mixed with the coal ash, the extent of mixing, and the mixing methods used.

(5) A detailed chemical analysis on at least four (4) representative samples spaced throughout a 2 ~~[-]~~ **TO** 6-month sampling period within the last year that fully characterizes the composition of the coal ash. [~~This analysis must include:~~] **THE CHEMICAL ANALYSIS MUST INCLUDE:**

(i) Total [~~and leachable~~] concentrations for aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, [~~sulfate~~] **SULFUR**, thallium, vanadium and zinc [~~and leachable concentrations for ammonia, chloride, fluoride, nitrate and nitrite~~] using methods found in EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA Publication No. SW-846) or comparable methods approved by the Department. [~~Leachate concentrations shall be determined using EPA Method 1312, the Synthetic Precipitation Leaching Procedure, or another leaching procedure approved by the Department.~~]

(ii) LEACHABLE CONCENTRATIONS FOR ALUMINUM, AMMONIA, ANTINOMY, ARSENIC, BARIUM, BERYLLIUM, BORON, CADMIUM, CALCIUM, CHLORIDE, CHROMIUM, COBALT, COPPER, FLUORIDE, IRON, LEAD, MAGNESIUM, MANGANESE, MERCURY, MOLYBDENUM, NICKEL, NITRATE, NITRITE, POTASSIUM, SELENIUM, SILVER, SODIUM, SULFATE, THALLIUM, VANADIUM, AND ZINC USING METHODS FOUND IN EPA'S "TEST METHODS FOR EVALUATING SOLID WASTE, PHYSICAL/CHEMICAL METHODS" (EPA PUBLICATION NO. SW-846) OR COMPARABLE METHODS APPROVED BY THE DEPARTMENT. LEACHATE CONCENTRATIONS MUST BE DETERMINED USING EPA METHOD 1312, THE SYNTHETIC PRECIPITATION LEACHING PROCEDURE, UNLESS ANOTHER LEACHING PROCEDURE IS REQUIRED BY THE DEPARTMENT.

(iii) pH USING THE SOIL AND WASTE pH METHOD FOUND IN EPA'S "TEST METHODS FOR EVALUATING SOLID WASTE, PHYSICAL/CHEMICAL METHODS" (EPA PUBLICATION NO. SW-846) OR COMPARABLE METHODS APPROVED BY THE DEPARTMENT.

[~~(ii)~~] **(iv)** Information to show that the laboratory making a chemical analysis for the application is in compliance with 27 Pa. C.S. Chapter 41 (relating to environmental laboratory accreditation).

(6) A laboratory analysis for optimum moisture content and dry density (Standard or Modified Proctor Test).

(7) An analysis of [~~permeability~~] **HYDRAULIC CONDUCTIVITY** reported in cm/sec.

(8) A determination of neutralization potential as determined by the Neutralization Potential Test in the Department's *Overburden Sampling and Testing Manual* (Noll, et al., 1988) or other method approved by the Department.

(9) A detailed description of the sampling methodology used, date the samples were taken, and name and contact information of the person performing the sampling.

(10) Other physical **OR CHEMICAL** testing results, if required [~~in subsection (a)~~] for the particular beneficial uses being proposed.

[~~(d)~~] **(c)** The Department will review the certification request and notify the generator in writing of the **DEPARTMENT-ASSIGNED** certification [~~identity number~~] **IDENTIFIER** or the reason that the source was not certified for beneficial use.

[~~(e)~~] **(d)** If the coal ash is certified, [~~a representative of~~] the [~~coal ash source~~] generator shall submit regular monitoring information to demonstrate that the coal ash continues to meet the requirements for certification. This information shall be submitted on dates specified by and on forms provided by the Department. At a minimum, monitoring requirements shall consist of the following:

(1) At least one representative sample analysis of the coal ash submitted every three months.

(2) [A] **COLLECTION OF A** representative sample **FOR** analysis [~~collected~~] whenever there is a change in operation of the combustion unit generating the coal ash or a [~~significant~~] change in the fuel source **THAT COULD RESULT IN A SIGNIFICANT INCREASE IN A COAL ASH CHEMICAL PARAMETER OR A CHANGE IN PHYSICAL PROPERTIES THAT COULD ADVERSELY IMPACT SLOPE STABILITY, COMPACTION CHARACTERISTICS OR SITE HYDROLOGY**.

(3) Prior to January 31, a yearly report that includes [~~the volume in cubic yards and~~] the weight in dry tons of **COAL** ash produced for beneficial use in the previous calendar year, **AN ESTIMATE OF THE VOLUME IN CUBIC YARDS** and the locations, such as mine sites, where the **COAL** ash was delivered.

[~~(f)~~] **(e)** The coal ash generator [~~and the person beneficially using the coal ash~~] must notify the Department of any changes to the information filed in the certification application or of any evidence that the coal ash may not meet certification requirements.

§ 290.202. Revocation of certification.

(a) The Department will revoke certification for a source of coal ash if any of the following occur:

(1) The generator fails to comply with monitoring requirements as described in § 290.201[~~(e)~~]**(d) (RELATING TO COAL ASH CERTIFICATION)**.

(2) The [~~results from the analyses of the~~] coal ash [~~consistently exceed the~~] **EXCEEDS** certification [~~criteria~~] **STANDARDS AND THE GENERATOR FAILS TO MAKE AN ACCEPTABLE DEMONSTRATION AS DESCRIBED IN § 290.203 (RELATING TO EXCEEDANCE OF CERTIFICATION REQUIREMENTS)**.

(3) There are physical or chemical characteristics that make the coal ash unsuitable for beneficial use.

(b) If certification is revoked, the coal ash cannot be used at a coal mining activity site or an abandoned [~~coal surface~~] mine **LAND** site in the

Commonwealth unless the [~~coal ash~~] generator requests re-certification under subsection (c) and the coal ash is re-certified by the Department.

(c) The generator of coal ash that had its certification revoked may request re-certification. For certification to be reinstated, the generator shall demonstrate to the Department's satisfaction that:

(1) A detailed chemical analysis on three recent monthly representative samples establish that the coal ash meets the certification requirements.

(2) There are no other physical or chemical characteristics that make the coal ash unsuitable for beneficial use.

§ 290.203. Exceedance of certification requirements.

(a) If the coal ash sample analysis results exceed any certification [~~requirement~~] STANDARD, [~~this source may continue to be used if the person can demonstrate to the Department's satisfaction that the exceedance was a rare event and is not a typical representation of the coal ash as a whole.~~], THE GENERATOR MUST SUBMIT TO THE DEPARTMENT WITHIN 30 DAYS OF RECEIVING THE RESULTS OF EXCEEDANCE THE FOLLOWING: [~~This demonstration must include comparisons with prior coal ash analyses, a new sampling strategy and new sample analyses. The demonstration must explain the cause of any high value and how this type of event will be avoided in the future.~~]

(1) IN THE CASE OF LABORATORY ERROR, DOCUMENTATION AND AN EXPLANATION FROM THE LABORATORY OF THE TYPE OF ERROR. THIS INFORMATION SHALL BE ACCOMPANIED BY A CORRECTED SAMPLE ANALYSIS OR ADDITIONAL SAMPLE RESULTS DEMONSTRATING THAT THE COAL ASH MEETS THE REQUIREMENTS OF § 290.201(a) (RELATING TO COAL ASH CERTIFICATION).

(2) A DEMONSTRATION THAT THE SAMPLE ANALYSIS IS ANOMALOUS BY PROVIDING ALL OF THE FOLLOWING:

(i) A COMPARISON OF THE ANOMALOUS SAMPLE WITH PRIOR COAL ASH SAMPLES.

(ii) ADDITIONAL SAMPLE RESULTS DEMONSTRATING THAT THE COAL ASH MEETS THE CRITERIA.

(iii) A PLAN FOR TEMPORARY INCREASE IN COAL ASH MONITORING.

(iv) AN EXPLANATION OF THE CAUSE OF THE EXCEEDANCE AND HOW FURTHER EXCEEDANCES WILL BE AVOIDED.

(b) IF THE GENERATOR DEMONSTRATES TO THE SATISFACTION OF THE DEPARTMENT THAT THE EXCEEDANCE IS AN ANOMALY, THE COAL ASH MAY CONTINUE TO BE BENEFICIALLY USED. FAILURE TO PROVIDE THIS DEMONSTRATION WILL RESULT IN REVOCATION OF BENEFICIAL USE CERTIFICATION FOR THE SOURCE.

Subchapter D. WATER QUALITY MONITORING

Sec.

§ 290.301. Water quality monitoring.

(a) A water quality monitoring plan shall be submitted to the Department for approval prior to placement or storage of coal ash **WHERE REQUIRED BY THIS CHAPTER.** **[~~at the sites identified in §§ 290.101(d), 290.104, 290.405(d) or 290.411(c).~~]**

(b) At a minimum, the **WATER QUALITY MONITORING** plan must include the following information:

(1) The location and design of downgradient and upgradient monitoring points.

(2) A minimum of 12 background samples from each monitoring point taken at monthly intervals prior to placement of coal ash, unless a **[~~different~~]** **GREATER** number or frequency is **[~~approved~~]** **REQUIRED** by the Department.

(3) The samples to be taken quarterly after approval from each monitoring point, unless a **[~~different~~]** **GREATER** number or frequency is **[~~approved~~]** **REQUIRED** by the Department.

[~~(b)~~] **(c)** The person taking the samples and the laboratory performing the analysis required by subsection (a) shall employ the quality assurance/quality control procedures described in the EPA's "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" (EPA 600/4-79-019) or "Test Methods for Evaluating Solid Waste" (SW-846).

[~~(c)~~] (d) The analytical methodologies used to meet the requirements of **THIS SECTION** [~~subsection (a)~~] must be those in the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846), "Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020), "Standard Methods for Examination of Water and Wastewater," prepared and published jointly by the American Public Health Association, American Waterworks Association, and Water Pollution Control Federation or a comparable method approved by the EPA or the Department. The laboratory making any chemical analysis for water quality monitoring must be in compliance with 27 Pa. C.S. Chapter 41 (relating to environmental laboratory accreditation).

[~~(d)~~] (e) Samples shall be analyzed for pH (determined in the field **AND IN THE LABORATORY**), temperature (determined in the field), specific conductance (at 25° C; determined in the field), alkalinity, acidity, sulfate, chloride, fluoride, nitrate, nitrite, ammonia, and total suspended solids without filtration.

[~~(e)~~] (f) Samples shall be analyzed for total and dissolved aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. In addition, the static water elevation for monitoring wells and the flow for springs, seeps and mine discharges must be measured.

[~~(f)~~] (g) Additional parameters may be required by the Department based on conditions at the site **AND THE SPECIFIC CHARACTERISTICS OF THE COAL ASH BEING BENEFICIALLY USED**.

[~~(g)~~] (h) Water quality monitoring shall continue quarterly for a minimum of 5 years after final placement or storage of coal ash at the site, and annually thereafter from the end of year 5 through 10 years after final placement or storage of coal ash at the site. The Department may require more frequent or longer water quality monitoring if the results of water quality monitoring indicate that contamination may be occurring.

[~~(h)~~] (i) Water quality monitoring data shall be submitted quarterly to and in the format required by the Department. **WATER QUALITY MONITORING DATA SHALL BE SUBMITTED TO THE DEPARTMENT ANNUALLY FROM THE END OF YEAR 5 THROUGH 10 YEARS AFTER FINAL PLACEMENT OR STORAGE OF COAL ASH AT THE SITE.**

[~~(i)~~] (j) The person required to develop and implement a water quality monitoring plan in accordance with § 290.101(d) (relating to general requirements for [~~the~~] beneficial use [~~of coal ash~~]) shall demonstrate attainment with applicable groundwater or surface water remediation standards as required in the event of groundwater or surface water degradation attributable to the placement of the coal ash. The applicable groundwater remediation standards are identified in §§ 290.304 and 290.305 (relating to assessment plan; and abatement plan).

§ 290.302. Number, location and depth of monitoring points.

(a) The water quality monitoring system shall accurately characterize groundwater **AND SURFACE WATER** flow, groundwater **AND SURFACE WATER** chemistry and flow systems on the site and adjacent area. The system must consist of the following:

(1) At least one monitoring **[~~well~~]** **POINT** at a **[~~point~~]** **POSITION** hydraulically upgradient from the coal ash placement area in the direction of increasing static head that is capable of providing representative data of groundwater not affected by placement of coal ash, except when the coal ash placement area occupies the most upgradient position in the flow system. In that case, sufficient downgradient monitoring points shall be placed to determine the extent of adverse effects on groundwater from the coal ash placement.

(2) At least three groundwater monitoring points hydraulically downgradient in the direction of decreasing static head from the area in which coal ash has been or will be placed. The Department at its discretion may accept two downgradient monitoring points on small sites that can be well represented by two points. The Department may allow one or more springs, seeps and mine discharges to substitute for wells if these points are hydraulically downgradient from the area in which coal ash has been or will be placed and if these points will be as effective or more effective at monitoring the **COAL** ash placement area than wells. Downgradient monitoring points must be hydrologically connected to the area of **COAL** ash placement, and must be located and constructed so as to detect any chemical influence of the **COAL** ash placement area. The downgradient points must be proximate enough to detect contaminants within the life of the placement operation. All monitoring points must be developed and protected in a manner approved by the Department. **[~~In addition to groundwater monitoring points, the Department may require downstream monitoring where downstream monitoring is likely to show any chemical influence that the ash placement area may have on the hydrologic regime.~~]**

(3) Surface water monitoring points **[~~approved by the Department~~]** **WHERE SURFACE WATER MONITORING IS LIKELY TO SHOW ANY CHEMICAL INFLUENCE THAT THE COAL ASH PLACEMENT AREA MAY HAVE ON THE HYDROLOGIC REGIME.**

(b) The upgradient and downgradient monitoring **[~~wells~~]** **POINTS** shall be:

(1) Sufficient in number, location and depth to be representative of water quality.

(2) Located so as not to interfere with routine operations at the site.

(3) Located within 200 feet of the coal ash placement area **OR MINING ACTIVITY AREA,** except as necessary to comply with subsections (c) **AND (d).** **[~~, and located at the points of compliance.~~]** **THE DEPARTMENT MAY APPROVE LOCATION AT**

A GREATER DISTANCE BASED ON THE HYDROLOGY OF THE COAL ASH PLACEMENT AND ADJACENT AREAS.

(c) In addition to the requirements of subsection (b), upgradient monitoring points shall be located so that they will not be affected by effects on groundwater or surface water from the **COAL** ash placement area.

(d) In addition to the requirements of subsection (b), downgradient monitoring points shall be located so that they will provide early detection of effects on groundwater or surface water from the coal ash placement area.

(e) Wells drilled under this section shall be drilled by drillers licensed under the Water Well Drillers License Act (32 P. S. §§ 645.1—645.13).

(f) The well materials shall be decontaminated prior to installation.

§ 290.303. Standards for wells and casing of wells.

(a) A monitoring well shall be cased as follows:

(1) The casing must maintain the integrity of the monitoring well borehole and be constructed of material that will not react with the groundwater being monitored.

(2) The minimum casing diameter shall be 4 inches unless otherwise approved by the Department in writing.

(3) The well must be constructed with a screen that meets the following requirements:

(i) The screen must be factory-made.

(ii) The screen may not react with the groundwater being monitored.

(iii) The screen must maximize open area to minimize entrance velocities and allow rapid sample recovery.

(4) The well must be filter-packed with chemically inert clean quartz sand, silica or glass beads**, UNLESS OTHERWISE APPROVED BY THE DEPARTMENT**. The material must be well-rounded and dimensionally stable.

(5) The casing must **[~~be clearly visible and protrude~~] EXTEND** at least 1 foot aboveground, unless the Department has approved flush mount wells.

(6) The annular space above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

(7) The casing must be designed and constructed to prevent cross contamination between surface water and groundwater.

(8) Alternative casing designs for wells in stable formations may be approved by the Department.

(b) Monitoring well casings must be enclosed in a protective casing that must:

(1) Be of sufficient strength to protect the well from damage by heavy equipment and vandalism.

(2) Be installed for at least the upper 10 feet of the monitoring well, as measured from the well cap, with a maximum stick up of 3 feet, unless otherwise approved by the Department in writing.

(3) Be grouted and placed with a concrete collar at least 3 feet deep to hold it firmly in position.

(4) Be numbered for identification with a label capable of withstanding field conditions **[~~and painted in a highly visible color~~]**.

(5) Protrude above the monitoring well casing.

(6) Have a locked cap.

(7) Be made of steel or other material of equivalent strength.

§ 290.304. Assessment plan.

(a) A person shall prepare and submit to the Department an assessment plan within 60 days after one of the following occurs:

(1) Data obtained from **WATER QUALITY** monitoring by the Department or the person indicates **[~~a~~]** **STATISTICALLY** significant **DEGRADATION** **[~~change in the quality of groundwater or surface water from background levels determined under § 290.301(a)(2) (relating to water quality monitoring) at any downgradient monitoring point~~]**. **STATISTICAL EVALUATION OF WATER QUALITY MONITORING DATA SHALL BE MADE USING ONE OR MORE OF THE METHODS IN 40 CFR §§ 258.53(g) AND (h).**

(2) Laboratory analysis of one or more public or private water supplies indicates groundwater or surface water contamination that could reasonably be attributed to the coal ash placement is occurring.

(b) [~~The person is not required to conduct an~~] **AN** assessment under this section **SHALL CONSIST OF CHEMICAL DATA AND A SUPPORTING NARRATIVE,** if one of the following applies:

(1) Within 10 working days after receipt of sample results indicating groundwater or surface water degradation, the person resamples the affected monitoring points and analysis from resampling shows, to the Department's satisfaction, that groundwater or surface water degradation has not occurred.

(2) Within 20 working days after receipt of sample results indicating groundwater or surface water degradation, the person demonstrates that the degradation was caused [~~entirely~~] by seasonal variations or activities unrelated to coal ash placement.

(c) The assessment plan shall specify the manner in which the person will determine the existence, quality, quantity, areal extent and depth of groundwater or surface water degradation and the rate and direction of migration of contaminants. An assessment plan shall be prepared and sealed by [~~an expert in the field of hydrogeology who is a licensed~~] **A** professional geologist **LICENSED TO PRACTICE** in the Commonwealth. The plan must contain the following information:

(1) For wells, lysimeters, borings, pits, piezometers, springs, seeps, mine discharges and other assessment structures or devices, the number, location, size, casing type and depth, as appropriate. If the assessment points are wells, they shall be constructed in accordance with §§ 290.302 and 290.303 (relating to number, location and depth of monitoring points; and standards for wells and casing of wells).

(2) The sampling and analytical methods for the parameters to be evaluated.

(3) The evaluation procedures, including the use of previously gathered groundwater or surface water quality and quantity information, to determine the concentration, rate and extent of groundwater or surface water degradation from the facility.

(4) **A BIOLOGICAL ASSESSMENT OF SURFACE WATER, IF REQUIRED BY THE DEPARTMENT.**

(5) An implementation schedule.

[~~(5)~~] **(6)** Identification of the abatement standard that will be met.

(d) The assessment plan shall be implemented upon approval by the Department in accordance with the approved implementation schedule, and shall be completed in a reasonable time not to exceed 6 months, unless otherwise approved by the Department. If the Department determines that the proposed plan is inadequate, it may modify the plan and approve the plan as modified. If the groundwater or surface water assessment indicates that contamination is leaving the coal ash placement site, the person shall notify, in writing, each owner of a private or public water supply that is located within

1/2-mile downgradient of the coal ash placement area that an assessment has been initiated.

(e) Within 45 days after the completion of the assessment plan, the person shall submit a report containing the new data collected, analysis of the data and recommendations on the necessity for abatement.

(f) If the Department determines after review of the assessment report that implementation of an abatement plan is not required by § 290.305 (relating to abatement plan), the person shall submit a revised water quality monitoring plan to the Department for approval that contains any necessary changes to the plan and an application for permit modification, if applicable. The person shall implement the modifications within 30 days of the Department's approval.

(g) This section does not prevent the Department from requiring or the person from conducting abatement or water supply replacement concurrently with or prior to implementation of the assessment.

§ 290.305. Abatement plan.

(a) The person that is required to conduct water quality monitoring as part of coal ash beneficial use or storage shall prepare and submit to the Department an abatement plan whenever one of the following occurs:

(1) The assessment plan prepared and implemented under § 290.304 (relating to assessment plan) shows the presence of groundwater or surface water degradation for one or more contaminants at one or more monitoring points and the analysis **[~~under § 290.304(c)~~]** indicates that an abatement standard **[~~under subsection (c)~~]** will not be met **AT THE COMPLIANCE POINTS**.

(2) Monitoring by the Department or person shows the presence of an abatement standard exceedance from one or more compliance points **[~~as indicated in subsection (c)~~]** even if **[~~a~~]** **AN** assessment plan has not been completed. The person is not required to implement an abatement plan under this paragraph if the following apply:

(i) Within 10 days after receipt of sample results showing an exceedance of an abatement standard at a point of compliance **[~~described in subsection (c)~~]**, the person resamples the affected monitoring points.

(ii) Analysis from resampling shows to the Department's satisfaction that an exceedance of an abatement standard has not occurred.

(3) A BIOLOGICAL ASSESSMENT OF SURFACE WATER IMPLEMENTED UNDER § 290.304(c)(4) SHOWS A DETRIMENTAL EFFECT ON BIOTA IS OCCURRING.

(b) An abatement plan shall be prepared and sealed by **[~~an expert in the field of hydrogeology who is a licensed~~] A** professional geologist **LICENSED TO PRACTICE** in this Commonwealth. The plan shall contain the following information:

(1) The specific methods or techniques to be used to abate groundwater or surface water degradation at the facility.

(2) The specific methods or techniques to be used to prevent further groundwater or surface water degradation from the facility.

(3) A schedule for implementation.

(c) If abatement is required in accordance with subsection (a), the person shall demonstrate compliance with one or more of the following standards at the identified compliance points:

(1) For constituents for which statewide health standards exist, the statewide health standard for that constituent at and beyond 500 feet of the perimeter of the **[~~permitted~~]** coal ash placement area or at and beyond the property boundary, whichever is closer.

(2) The background standard for constituents at and beyond 500 feet of the perimeter of the **[~~permitted~~]** coal ash placement area or at and beyond the property boundary, whichever is closer. Load-based standards at groundwater discharge points are acceptable if **[~~the~~] A** permit was issued under Chapter 87, Subchapter F or Chapter 88, Subchapter G (relating to surface coal mines: minimum requirements for remining areas with pollutional discharges; and anthracite surface mining activities and anthracite bank removal and reclamation activities: minimum requirements for remining areas with pollutional discharges).

(3) For constituents for which no primary MCLs under the Federal and State Safe Drinking Water Acts (42 U.S.C.A. §§ 300f—300j-18; and 35 P. S. §§ 721.1—721.17) exist, the risk-based standard at and beyond 500 feet of the perimeter of the **[~~permitted~~]** coal ash placement area or at and beyond the property boundary, whichever is closer, if the following conditions are met:

(i) The risk assessment used to establish the standard assumes that human receptors exist at the property boundary.

(ii) The level is derived in a manner consistent with **[~~Department guidelines~~] THE HEALTH RISK ASSESSMENT PORTIONS OF THE DEPARTMENT'S LAND RECYCLING PROGRAM TECHNICAL GUIDANCE MANUAL (253-0300-100) OR OTHER STANDARD PROCEDURES COMMONLY USED IN THE ENVIRONMENTAL FIELD** for assessing the health risks of environmental pollutants.

(iii) The level is based on scientifically valid studies conducted in accordance with good laboratory practice standards (40 CFR Part 792 (relating to good laboratory practice

standards)) promulgated under the Toxic Substances Control Act (15 U.S.C.A. §§ 2601—2692) or other scientifically valid studies approved by the Department.

(iv) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level of 1×10^{-5} at the property boundary

(d) For measuring compliance with secondary contaminants under subsections (c)(1) or (c)(3). the Department may approve a compliance point beyond 500 feet on land owned by the owner of the coal ash placement area.

(e) The abatement plan shall be completed and submitted to the Department for approval within 90 days of the time the obligation arises under this section unless the date is otherwise modified, in writing, by the Department.

(f) If the Department determines that the proposed plan is inadequate, the Department may modify the plan and approve the plan as modified or require the submission of an approvable modification.

(g) The abatement plan shall be implemented within 60 days of approval by the Department in accordance with the approved implementation schedule.

(h) If, after plan approval or implementation, the Department finds that the plan is incapable of achieving the groundwater or surface water protection contemplated in the approval, the Department may issue one or more of the following:

(1) An order requiring the person to submit proposed modifications to the abatement plan.

(2) An order requiring the person to implement the abatement plan as modified by the Department.

(3) Another order the Department deems necessary to aid in the enforcement of the acts.

§ 290.306. Recordkeeping.

A person subject to the requirements of this subchapter shall retain records of analyses and evaluations of monitoring data and groundwater elevations required under this subchapter for a minimum of 3 years after water quality monitoring ceases and shall make the records available to the Department upon request

§ 290.307. <u>INTERIM WATER QUALITY MONITORING REQUIREMENTS.</u>

<u>THIS SECTION APPLIES TO SITES WHERE COAL ASH HAS BEEN STORED OR PLACED FOR BENEFICIAL USE PRIOR TO *(Insert date of*</u>

publication) AND CONTINUES TO BE STORED OR PLACED FOR BENEFICIAL USE FOLLOWING (*Insert date of publication).*

(a) FOR SITES NOT PREVIOUSLY SUBJECT TO WATER QUALITY MONITORING REQUIREMENTS:

(1) A WATER QUALITY MONITORING PLAN MEETING THE REQUIREMENTS OF § 290.301(b)(1) AND (3) (RELATING TO WATER QUALITY MONITORING) SHALL BE SUBMITTED TO THE DEPARTMENT BY (*Editor's Note: Insert date twelve months after the date of publication).*

(2) THE WATER QUALITY MONITORING PLAN SHALL BE IMPLEMENTED WITHIN ONE YEAR OF THE DEPARTMENT'S APPROVAL OF THE PLAN.

(b) FOR SITES PREVIOUSLY SUBJECT TO WATER QUALITY MONITORING REQUIREMENTS:

(1) NEW MONITORING POINTS AND REPLACEMENT WELLS CONSTRUCTED AFTER ((*Editor's Note: Insert date of publication)* MUST COMPLY WITH THE REQUIREMENTS IN §§ 290.302(b)-(f) AND 290. 303 (RELATING TO NUMBER, LOCATION AND DEPTH OF MONITORING POINTS; AND STANDARDS FOR WELLS AND CASING OF WELLS).

(2) ALL WATER QUALITY MONITORING AFTER (*Editor's Note: Insert date three months after the date of publication)* SHALL INCLUDE ALL PARAMETERS IN § 290.301(e) AND (f) AND ANY PARAMETERS ADDED BY THE DEPARTMENT BASED ON SITE CONDITIONS IN ACCORDANCE WITH § 290.301(g).

Subchapter E. COAL ASH STORAGE

Sec.

290.410. Storage impoundments—design requirements.
290.411. Storage impoundments—operating requirements.
290.412. Storage impoundments—failure.
290.413. Storage impoundments—inspections.
290.414. Storage areas—closure.
290.415. INTERIM REQUIREMENTS FOR SITES WHERE COAL ASH HAS BEEN STORED.

§ 290.401. Design and operation.

(a) A person storing coal ash shall employ best engineering design and construction practices for all phases of construction and operation

(b) A person may not store coal ash in a manner that exceeds the design capacity of the storage facility.

(c) The Department may require a person to install a water quality monitoring system in accordance with Subchapter D (relating to water quality monitoring) if storage of the coal ash has the potential to cause groundwater degradation.

(d) A person storing coal ash shall routinely inspect the facility, its equipment and the surrounding area for evidence of failure and shall immediately take necessary corrective actions. The person shall maintain records of inspections and corrective actions that were taken for a minimum of 3 years, and make the records available to the Department upon request.

§ 290.402. Duration of storage.

(a) [~~Except as provided in subsection (b) or (c), coal ash may not be stored at the immediate area where it will be put to beneficial use for a longer period of time than necessary to complete the project or 90 days, whichever is less, unless the Department approves a different period in writing.~~] COAL ASH MAY NOT BE STORED AS FOLLOWS:

(1) FOR MORE THAN 1 YEAR UNLESS A MINIMUM OF 75% OF THE VOLUME OF THE COAL ASH BEING STORED IS USED OR PROCESSED FOR BENEFICIAL USE IN THE PREVIOUS CALENDAR YEAR COMMENCING ON JANUARY 1ST.

(2) FOR MORE THAN 90 DAYS UNLESS IT IS STORED ON AN IMPERMEABLE FLOOR OR PAD AND EITHER IN AN ENCLOSED FACILITY OR IN AN AREA WHERE RUNOFF IS COLLECTED AND TREATED. THE DEPARTMENT MAY WAIVE OR MODIFY, IN WRITING, THIS REQUIREMENT IF THERE IS NO RUNOFF FROM THE STORAGE.

(b) [~~Bottom ash being stored for use as antiskid material may be stored in areas adjacent to roads or highways for a period of more than 90 days without Department approval if the following conditions are met:~~

~~(1) A significant quantity of the bottom ash is used annually for antiskid material.~~

~~(2) Bottom ash is stored on an impermeable floor or pad, and it is stored either in an enclosed facility or an area where runoff is collected or treated. The Department may waive or modify, in writing, this requirement if there is no runoff from the storage.~~

~~(c) Coal ash may not be stored at another area as follows:~~

~~(1) For more than 1 year unless a minimum of 75% of the volume of the ash being stored is processed for beneficial use in the previous year.~~

~~(2) For more than 90 days unless it is stored on an impermeable floor or pad and either in an enclosed facility or in an area where runoff is collected and treated. The Department may waive or modify, in writing, this requirement if there is no runoff from the storage.~~]

[~~(d)~~] The Department will presume that a person storing coal ash contrary to subsection[s] (a)[~~-(c)~~] is operating a waste disposal facility and is subject to the applicable requirements of the act and regulations thereunder for waste disposal.

[~~(e)~~] (c) A person that stores coal ash shall maintain for a minimum of 3 years accurate operational records that are sufficiently detailed to demonstrate to the Department that coal ash is being stored under subsection[s] (a)[~~-(c)~~]. The records shall be made available to the Department upon request. The presumption in subsection [~~(d)~~] (b) may be overcome by the operational records required by this subsection.

[~~(f) Nothing in this section supersedes a regulation or other requirement providing for a storage period of less than 1 year.~~]

§ 290.403. Surface and groundwater protection.

(a) Surface water runoff from storage areas shall be minimized. Storm water shall be managed in accordance with The Clean Streams Law (35 P.S. §§ 691.1-691.1001) and the regulations promulgated thereunder.

(b) Surface water run-on to storage areas shall be minimized.

(c) Coal ash may not be stored in a manner that causes groundwater **OR SURFACE WATER** degradation.

§ 290.404. Areas where coal ash storage is prohibited.

(a) Coal ash storage areas, other than **AREAS WHERE THE COAL ASH IS TOTALLY ENCLOSED AND STORED ON AN IMPERMEABLE FLOOR, TEMPORARY COAL ASH STORAGE PILES OR** storage impoundments, may not be operated as follows, unless otherwise authorized by the Department in writing:

(1) Within 100 feet of an intermittent or perennial stream**, OTHER THAN EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1 (RELATING TO DEFINITIONS)**.

(2) WITHIN 300 FEET OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1.

[~~(2)~~] **(3)** Within 300 feet of a groundwater water source.

[~~(3)~~] **(4)** Within 1;000 feet upgradient of a surface drinking water source.

[~~(4)~~] **(5)** Within 25 feet of a bedrock outcrop, unless the outcrop is properly treated to minimize infiltration into fractured zones.

[~~(5)~~] **(6)** Within 100 feet of a sinkhole or area draining into a sinkhole.

[~~(6)~~] **(7)** Within 100 feet of a wetland, other than an exceptional value wetland.

[~~(7)~~] **(8)** In or within 300 feet of an exceptional value wetland.

(b) Coal ash storage impoundments may not be operated as follows:

(1) In the 100-year floodplain of waters of this Commonwealth.

(2) In or within 100 feet of a wetland other than an exceptional value wetland.

(3) In or within 300 feet of an exceptional value wetland.

(4) In an area where the operation would result in the elimination, pollution or destruction of a portion of an intermittent stream or perennial stream.

(5) Within 100 feet of an intermittent stream or perennial stream**, OTHER THAN EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1**.

(6) WITHIN 300 FEET OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1.

[~~(6)~~] (7) In areas underlain by limestone or carbonate formations, where the formations are greater than 5 feet thick and present at the topmost geologic unit. These areas include areas mapped by the "Pennsylvania Geological Survey" as underlain by these formations, unless competent geologic studies **CERTIFIED BY A PROFESSIONAL GEOLOGIST LICENSED TO PRACTICE IN THIS COMMONWEALTH** demonstrate the absence of limestone and carbonate formations under the site.

[~~(7)~~] (8) Within 900 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the coal ash storage impoundment being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner. A closed coal ash storage impoundment that submits an application to reopen and expand shall also be subject to this paragraph.

[~~(8)~~] (9) Within 100 feet of a property line, unless the current owner has provided a written consent to the coal ash storage impoundment being closer than 100 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.

[~~(9)~~] (10) Within ¼ mile upgradient, and within 300 feet downgradient, of a private or public water source, except that the Department may waive or modify [~~these~~] **THE** isolation distances **TO A PRIVATE WATER SOURCE** if the person demonstrates and the Department finds, in writing, that the following conditions have been met:

(i) The owners of the [~~public or~~] private water sources in the isolation area have consented, in writing, to the location of the proposed the coal ash storage impoundment.

(ii) The person storing coal ash and each water source owner have agreed, in writing, that the person will construct and maintain at the person's expense a permanent alternative water supply of like quantity and quality at no additional cost to the water source owner if the existing source is adversely affected by the coal ash storage impoundment.

(iii) The person storing coal ash has demonstrated that a replacement water source is technically and economically feasible and readily available for every [~~public or~~] private water source in the isolation area.

[~~(10)~~] (11) [~~*At a school, park or playground as follows:*~~

—~~(i)~~] Within 900 feet of the following:

[~~(A)~~] (i) A building that is owned by a school district or school and used for instructional purposes.

[~~(B)~~] (ii) A park.

[~~(C)~~] (iii) A playground.

[~~(ii) The current property owner of a school building, park or playground may waive the 900-foot prohibition by signing a written waiver.~~

~~(11)~~] (12) In areas that serve as habitat for fauna or flora listed as "threatened" or "endangered" under the Endangered Species Act of 1973 (7 U.S.C.A. § 136; 16 U.S.C.A. §§ 4601-9, 460k-1, 668dd, 715i, 715a, 1362, 1371, 1372, 1402 and 1531-1543), the Wild Resource Conservation Act (32 P. S. §§ 5301-5314), 30 Pa.C.S. (relating to the Fish and Boat Code) or 34 Pa.C.S. (relating to the Game and Wildlife Code), unless the applicant demonstrates compliance with applicable Federal and State requirements that would allow operations in such areas.

(c) TEMPORARY COAL ASH STORAGE PILES MAY NOT BE OPERATED AS FOLLOWS:

(1) WITHIN 100 FEET OF AN INTERMITTENT OR PERENNIAL STREAM, OTHER THAN EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1.

(2) WITHIN 300 FEET OF EXCEPTIONAL VALUE OR HIGH QUALITY WATERS AS DEFINED IN § 93.1.

(3) WITHIN 100 FEET OF A WETLAND, OTHER THAN AN EXCEPTIONAL VALUE WETLAND.

(4) IN OR WITHIN 300 FEET OF AN EXCEPTIONAL VALUE WETLAND.

§ 290.405. Storage piles—general requirements.

(a) A person storing coal ash in piles shall [~~prevent~~] MINIMIZE the dispersal of coal ash by wind or water erosion.

(b) The coal ash being stored shall be separated from the water table by at least 4 feet without the use of a groundwater pumping system. The Department may waive, in writing, this requirement.

(c) A person storing coal ash in a pile, OTHER THAN A TEMPORARY COAL ASH STORAGE PILE, shall design, install and maintain berms around the storage area and other structures or facilities to collect and, when necessary,

treat runoff or leachate, or both, from the storage area. The Department may waive, in writing, the berm requirement when other collection methods are in place.

(d) For storage piles without a liner system or storage pad, the Department may require the person to install and implement water quality monitoring in accordance with Subchapter D (relating to water quality monitoring) where site conditions warrant.

§ 290.406 Storage piles—storage pad or liner system.

(a) A person that installs a storage pad or liner system to prevent groundwater degradation shall meet the requirements of this section. This section does not preclude a person from using other means to prevent groundwater degradation, such as enclosure in a building.

(b) The storage pad or liner system must meet the following requirements:

(1) Prevent the migration of leachate through the storage pad or liner system.

(2) May not be adversely affected by the physical or chemical characteristics of coal ash, coal ash constituents or leachate from the coal ash storage piles.

(3) Be designed, constructed and maintained to protect the integrity of the pad or liner during the storage of coal ash.

(4) Be designed to collect leachate and runoff.

(5) Be constructed of non-solid waste and non-coal ash material.

(6) Be no less permeable than 1×10^{-7} cm/sec., as demonstrated by field and laboratory testing.

(7) Be inspected for uniformity, damage and imperfections during construction and installation.

(c) The person shall install and operate a monitoring system capable of verifying whether coal ash or leachate has penetrated the pad or liner, if required by the Department.

(d) Coal ash may not be stored where continuous or intermittent contact could occur between the coal ash and groundwater or surface water.

§ 290.407. Storage piles—leachate and runoff control.

(a) A person that installs a storage pad or liner system shall collect leachate and runoff from the coal ash pile and divert it into a leachate storage **OR TREATMENT** system.

(b) A leachate storage system must consist of a collection tank or surface impoundment. The tank or impoundment must be:

(1) Sized for the anticipated leachate and runoff flow, including a 30-day reserve capacity.

(2) Chemically compatible with the leachate.

(3) Of sufficient strength to withstand expected loads.

(4) Equipped with cleanouts, if necessary.

(5) Sealed to prevent the loss of leachate and runoff.

(c) Collected leachate shall be treated or disposed in a manner that complies with the act, The Clean Streams Law (35 P.S. §§ 691.1--691.1001), and the regulations promulgated thereunder.

§ 290.408. Storage impoundments—scope.

(a) This section and §§ 290.409—**[~~290.413~~]** **290.415** apply to persons that store coal ash in surface impoundments prior to beneficial use.

(b) This section and §§ **[~~290.408—290.413~~]** **290.409--290.415** do not apply to the storage impoundments that are designed for the express purpose of storing stormwater runoff and that store runoff composed entirely of stormwater. Impoundments that store stormwater runoff must comply with the applicable requirements of The Clean Streams Law (35 P.S. §§ 691.1--691.1001), section 13 of the Stormwater Management Act (32 P. S. § 680.13) and Chapters 92, 102 and 105 (relating to national pollutant discharge elimination system permitting, monitoring and compliance; erosion and sediment control; and dam safety and waterway management).

(c) For purposes of this section, ''stormwater'' means drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

§ 290.409. Storage impoundments—general requirements.

A person that operates a storage impoundment to hold coal ash shall meet the following conditions:

(1) Hold a valid permit from the Department for the storage under sections 308 and 402 and other applicable provisions of The Clean Streams Law (35 P.S. §§ 691.1-691.1001), Chapter 91 (relating to general provisions) and other applicable regulations promulgated thereunder, and shall comply with the permit.

(2) Comply with Chapter 105 (relating to dam safety and waterway management).

§ 290.410. Storage impoundments—design requirements.

Impoundments used to store coal ash must meet the following minimum design criteria:

(1) The liner system for a coal ash storage impoundment must include the following elements:

(i) The subbase, which is the prepared layer of soil or earthen material upon which the remainder of the liner system is constructed.

(ii) The leachate detection zone, which is a prepared layer placed on top of the subbase and upon which the liner is placed, and in which a leachate detection system is located.

(iii) The composite liner, which is a continuous layer of synthetic material over earthen material, placed on the leachate detection zone. The upper component is no more permeable than 1.0×10^{-7} cm/sec. based on laboratory testing. The composite component is no more permeable than 1.0×10^{-6} cm/sec., based on laboratory testing and field testing.

(iv) The protective cover and leachate collection zone, which is a prepared layer placed over the liner in which a leachate collection system is located.

(2) The bottom of the subbase of the liner system cannot be in contact with the water table without the use of groundwater pumping systems.

(3) The subbase must meet the following performance standards. The subbase must:

(i) Bear the weight of the liner system, coal ash, and equipment operating on the coal ash storage impoundment without causing or allowing a failure of the liner system.

(ii) Accommodate potential settlement without damage to the liner system.

(iii) Be a barrier to the transmission of liquids.

(iv) Cover the bottom and sidewalls of the coal ash storage impoundment.

(4) The leachate detection zone must meet the following performance standards. The leachate detection zone must:

(i) Rapidly detect and collect liquid entering the leachate detection zone, and rapidly transmit the liquid to the leachate treatment system.

(ii) Withstand chemical attack from coal ash or leachate.

(iii) Withstand anticipated loads, stresses and disturbances from overlying coal ash and equipment operation.

(iv) Function without clogging.

(v) Prevent the liner from puncturing, cracking, tearing, stretching or otherwise losing its physical integrity.

(vi) Cover the bottom and sidewalls of the coal ash storage impoundment.

(5) The liner must meet the following standards of performance:

(i) The liner must prevent the migration of leachate through the liner to the greatest degree that is technologically possible.

(ii) The effectiveness of the liner in preventing the migration of leachate may not be adversely affected by the physical or chemical characteristics of the coal ash or leachate from the coal ash storage impoundment.

(iii) The liner must be resistant to physical failure, chemical failure, and other failure.

(iv) The liner must cover the bottom and sidewalls of the coal ash storage impoundment.

(6) The protective cover must meet the following performance standards. The protective cover must:

(i) Protect the primary liner from physical damage from stresses and disturbances from overlying coal ash and equipment operation.

(ii) Protect the leachate collection system within the protective cover from stresses and disturbances from overlying coal ash and equipment operation.

(iii) Allow the continuous and free flow of leachate into the leachate collection system within the protective cover.

(iv) Cover the bottom and sidewalls of the coal ash storage impoundment.

(7) The leachate collection system within the protective cover must meet the following performance standards. The leachate collection system must:

(i) Ensure that free flowing liquids and leachate will drain continuously from the protective cover to the leachate treatment system.

(ii) Withstand chemical attack from leachate.

(iii) Withstand anticipated loads, stresses and disturbances from overlying coal ash and equipment operation.

(iv) Function without clogging.

(v) Cover the bottom and sidewalls of the coal ash storage impoundment.

(8) An onsite leachate storage system shall be part of each leachate treatment method used by the person. The storage system shall contain impoundments or tanks for storage of leachate. The tanks or impoundments shall have a storage capacity at least equal to the maximum expected production of leachate for a 30-day period. No more than 25% of the total leachate storage capacity may be used for flow equalization on a regular basis. Leachate storage capacity may not be considered to include leachate that may have collected in or on the liner system.

(9) Leachate may be collected and handled by one of the following:

(i) Onsite treatment and discharged into a receiving stream under a permit issued by the Department under The Clean Streams Law (35 P.S. §§ 691.1--691.1001) and regulations thereunder, if the Department approves this method in the permit.

(ii) Direct discharge into a permitted publicly-owned treatment works, following pretreatment, if pretreatment is required by Federal, State or local law or by discharge into another permitted treatment facility.

(iii) Transport to an offsite treatment facility that is operating in compliance with The Clean Streams Law (35 P.S. §§ 691.1--691.1001) and regulations thereunder, and is otherwise capable of accepting and treating leachate from the coal ash storage impoundment.

(10) Impoundments must be designed, constructed, operated and maintained in accordance with the following:

(i) An impoundment must have sufficient freeboard to prevent overtopping, including overtopping caused by the 24-hour precipitation event in inches to be expected once in 25 years. The freeboard may not be less than 2 feet.

(ii) The dike must have sufficient structural integrity to prevent failure. The liner system of the impoundment may not be considered in determining the structural integrity of the dike.

(iii) The inside slope shall be designed and constructed with sufficient protective cover to prevent wind and water erosion, and to preserve the structural integrity of the dike.

(iv) The dike must be capable of withstanding anticipated static and dynamic loadings with a minimum safety factor for the most critical failure surface of 1.5 for static loading and 1.2 for dynamic loading.

(v) The outside slopes of the dike may not exceed 25% unless the following requirements are met:

(A) A horizontal terrace with a minimum width of 10 feet is constructed at each 20-foot vertical rise of the slope, or the Department approves in the permit a terrace with different dimensions.

(B) Surface water on the terrace is collected and discharged so that it does not erode or otherwise adversely affect the stability of the dike.

(C) The final slope does not exceed 50%.

(vi) Dikes and berms must be free of burrowing mammals and plants with root systems capable of displacing earthen materials upon which the structural integrity of the dikes or berms is dependent.

(vii) An impoundment must be surrounded by structures sufficient to prevent surface runoff from a 25-year, 24-hour precipitation event from entering the impoundment.

§ 290.411. Storage impoundments—operating requirements.

(a) At least 8 feet shall be maintained between the bottom of the subbase of the liner system and the top of the confining layer or the shallowest level below the bottom of the subbase where groundwater occurs as a result of upward leakage from natural or other preexisting causes. The integrity of the confining layer may not be compromised by excavation.

(b) The edge of the liner shall be clearly marked.

(c) A fence or other suitable barrier shall be maintained around the coal ash storage area, including impoundments, leachate collection and treatment systems sufficient to prevent unauthorized access, unless the Department approves, in the permit, an alternative means of protecting access to the area that afford an equivalent degree of protection.

(d) The person shall implement fugitive air contaminant control measures and otherwise prevent and control air pollution in accordance with the Air Pollution Control Act (35 P. S. § § 4001—4015); Article III (relating to air resources) and § 289.228

(relating to nuisance minimization and control). Minimization and control measures must include the following:

(1) Ensuring that operation of the coal ash storage impoundment will not cause or contribute to an exceedance of an ambient air quality standard under § 131.3 (relating to ambient air quality standards).

(2) Minimizing the generation of fugitive dust emissions from the coal ash storage impoundment.

(e) The person shall implement water quality monitoring, as required under Subchapter D.

(f) A person that stores coal ash in a coal ash storage impoundment shall remove coal ash from the impoundment as follows:

(1) Without damage to the impoundment.

(2) Inspect the liner to ensure its integrity, and make necessary repairs prior to returning the impoundment to service.

(3) Provide for the beneficial use of the removed coal ash in accordance with this Chapter.

(4) Removal from the impoundment shall be sufficient such that the coal ash is not accumulated speculatively.

§ 290.412. Storage impoundments—failure.

(a) If a coal ash storage impoundment fails, the person storing coal ash shall immediately:

(1) Stop adding coal ash to the impoundment.

(2) Contain any discharge that has occurred or is occurring.

(3) Empty the impoundment in a manner approved by the Department, if leaks cannot be stopped.

(4) Notify the Department of the failure of the impoundment and the measures taken to remedy the failure.

(b) A coal ash storage impoundment that has been removed from service due to failure may not be restored to service unless the following conditions are met:

(1) The impoundment has been repaired.

(2) The repair has been certified to the Department, in writing, by a registered professional engineer.

(3) The Department has approved, in writing, the restoration of the impoundment to service.

(c) If a storage impoundment fails and the impoundment or surrounding area cannot be cleaned up in a manner that is satisfactory to the Department, the impoundment shall be closed in accordance with this section.

§ 290.413. Storage impoundments—inspections.

The Department will inspect storage impoundments in accordance with the Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27).

§ 290.414. Storage areas—closure.

Upon cessation of coal ash storage, the person storing coal ash shall remove coal ash and materials containing coal ash, and shall provide for the beneficial use or disposal of the coal ash **AND MATERIALS** under the act and the regulations promulgated thereunder. The person shall also regrade and revegetate the site as required by the Department.

§ 290.415. INTERIM REQUIREMENTS FOR SITES WHERE COAL ASH HAS BEEN STORED.

FOR STORAGE SITES PREVIOUSLY SUBJECT TO § 299.153 (RELATING TO STORAGE AND CONTAINMENT OF COAL ASH), THE REQUIREMENTS OF THIS SUBCHAPTER MUST BE MET BY *(Editor's Note: Insert date twelve months after the date of publication)* UNLESS THE PERSON STORING THE COAL ASH DEMONSTRATES TO THE DEPARTMENT'S SATISFACTION THROUGH WATER QUALITY MONITORING DATA THAT THE EXISTING STORAGE IS PROTECTIVE OF PUBLIC HEALTH, SAFETY AND THE ENVIRONMENT.

MUNICIPAL AND RESIDUAL WASTE PROGRAM
FINAL RULEMAKING AMENDMENTS
BENEFICIAL USE OF COAL ASH

COMMENT AND RESPONSE DOCUMENT

INTRODUCTION

In assembling this document, the Department of Environmental Protection ("DEP") has addressed all pertinent and relative comments associated with this package. For the purposes of this document, comments of similar subject material have been grouped together and responded to accordingly.

During the public comment period, the Environmental Quality Board ("Board") received comments from over 1100 commentators, including 13 industry organizations, 7 environmental groups, the Pennsylvania Chamber of Business and Industry, and the Independent Regulatory Review Commission (IRRC). The following table lists these organizations and individuals. The Commentator ID number is found in parentheses following the comments in the comment/response document.

Several comments concerned current practice or past DEP actions involving coal beneficial use, comments on technical guidance implementation, and specific sites where coal ash had been placed or disposed. These comments were not considered to be relevant to the proposed regulations. As such, they were not included in this document. It is recommended that commentators who included these issues either contact their legislators to propose changes to the existing laws or DEP to register complaints about specific sites or request changes to the pertinent guidance documents.

Table of Commentators

ID	Name	Affiliation	City
1	Mike Bodnar	I and I Engineering	Pottsville
2	Neill Andritz	Roaring Run Watershed Association	Apollo
3	Steve Hinderliter	CME Management LLC	Latrobe
4	Mark McClellan	Evergreen Environmental, Inc.	Harrisburg
5	Bruce Dickie		Madison, WI
6	Mariko Kaonohi		Matteson, IL
7	Harrison Bertram		Schaumburg, IL
8	Dr. Sarah Emily Labance		Vernon, NJ
9	Roger Hannah		Round Lake Beach, IL
10	Dean Thomas Leh		San Francisco, CA
11	L.Gols		Natick, MA
12	Mr. and Mrs. Danny Watson		Kirkland, WA

13	Daisely Rice	Santa Barbara, CA
14	Ryan McIntyre	Chicago, IL
15	Julia Burwell	Bellevue, WA
16	Emerald Ducoeur	Doylestown
17	Mary Shaw	Norristown
18	Bob Johnson	Pittsburgh
19	Kris Harker	Lancaster
20	S.Smith	West Chester
21	Gary Scott	Du Bois
22	Patti Byra	York Haven
23	Noah Sandler	Bethel Park
24	Pamela Fritzsche	Coatesville
25	Joy Boonin	Swarthmore
26	Nancy Crane	State College
27	William Scott	Mansfield
28	Dr. Greg Skutches	Bethlehem
29	Mr. and Mrs. Paul Smith	Exton
30	Maggie Smith	Hollidaysburg
31	Norma Dupire	Pittsburgh
32	Jeff Erwin	Chalfont
33	Robert Abel	Lehighton
34	John Rossi	Chadds Ford
35	Sylvia Yoder	Paoli
36	William Hesse	Venetia
37	Kevin Doughtery	Media
38	Christina Rodriguez	Dingmans Ferry
39	Natalie Greene	Glenside
40	Brian Denton	Carlisle
41	Michael Gadomski	Sterling
42	Richard Inglis	Kennett Square
43	Rob Belke	Doylestown
44	Robin Wilson	Hawley
45	Rose Ann Mancini	Newtown Square
46	Lisa Rochelle	Easton
47	Javan Deloach	Mechanicsburg
48	James Kendall	Pittsburgh
49	Geoffrey Thulin	Cashtown
50	Craig Silbert	Hilltown
51	Robert Kiefer	Southampton
52	James Rohan	Bensalem
53	Jay Harter	Susquehanna
54	Dr. Alison Anderson	Philadelphia
55	Timothy Esposito	Elkins Park
56	Karen Vasily	Norristown
57	Emily Fertig	Pittsburgh
58	Andrea Liu	Swarthmore

59	Howard Rife	Reading
60	Nancy Crane	State College
61	Stephen Haynes	Irwin
62	Amy Edelman	Bala Cynwyd
63	Dr. Peter Mayes	Narberth
64	Mike Dellpenna	Malvern
65	BJ Searcy	Monessen
66	Tom Campbell	Allison Park
67	Dr. Fred Schultz	Ligonier
68	Tiffany Reed	N. Smithfield, RI
69	Nowell Smith	York
70	Mark Peterson	Erie
71	Mr. and Mrs. Andrew Summa	Scranton
72	Naomi Winch	Whitehall
73	Arthur DiBonaventura	Philadelphia
74	Dave Cooksley	
[illegible]	Mary Ballard	Wayne
76	Homer Wood	Gettysburg
77	Shirley Nitka	Philadelphia
78	Brenda Flores	Pittsburgh
79	Lynn Casella	Bridgevill
80	Richard Allebach	West Reading
[illegible]	Glenn Schlippert	Etters
82	Brad Krueger	West Chester
83	Caro Liu	Philadelphia
84	Dan Cush	Aspinwall
85	J. Draper	Philadelphia
86	Sarah Puleo	Philadelphia
87	Brian Fink	Philadelphia
88	Renee Ebert	East Stroudsburg
89	Carolyn Weber	State College
90	Ed Villanueva	Philadelphia
91	Reserved	
92	T. Bell	Pittsburgh
93	Dr. Carol Gold	State College
94	David Fiedler	Bensalem
95	William Walter	Pittsburgh
96	Brian Murr	Elizabethtown
97	Daniel Shearer	Halifax
98	Mr. and Mrs. Lynda Farrell	Downingtown
99	Diane Jackson	East Liberty
100	Angela Miller Mcgraw	Pittsburgh
101	Oliver Inslee	Downingtown
102	Elizabeth Shirey	State College
103	Ruth Roberts	Irwin
104	Becky Wells	Nottingham

105	Monika Skonieczny	Pittsburgh
106	George Manney	Philadelphia
107	Greta Aul	Lancaster
108	Karen Chady	Harrisburg
109	Kurt Dunkel	Shippensburg
110	Bill & Lynne Starrett	Lansdale
111	Diane Astleford	Drums
112	Damon Ealy	Pittsburgh
113	Christina Link	Willow Street
114	Trent Eisenhart	York
115	Gary Thornbloom	Julian
116	Pam Dull	Ambler
117	Richard Headley	Pittsburgh
118	Melissa May	State College
119	Frances Hoenigswald	Philadelphia
120	Kerri Lacharite	Pittsburgh
121	Jennifer Riley	Royersford
122	Dennis Fisher	Broomall
123	Lisa Scherer	Marianna
124	Reserved	
125	K. Landes	Doylestown
126	Kimberly Maser	Lewisburg
127	Eileen Potts-Smith	Oakdale
128	Francis Palmarino	Drexel Hill
129	Brigitta Arden	Pittsburgh
130	Dennis Winters	Philadelphia
131	Jessica Kolber	Yardley
132	Gregory Flory	Lancaster
133	M. Denise Carroll	Devon
134	Pamela Utterback	Pottstown
135	Devin Curran	Honey Brook
136	Carol Drelbelbis	Port Matilda
137	Brian Taussig-Lux	Media
138	Dr. Rosemary Caolo	Scranton
139	Dr. Alice Kelley	Strafford
140	Selma Mayman	Kennett Square
141	David Clemens	Milton
142	Douglas Durlan	Swarthmore
143	Michael Gulash	McAdoo
144	James Meenan	Manheim
145	John Cooke	Haverford
146	Dr. James Browne	Philadelphia
147	Lauren Samay	Natrona Heights
148	Jeanne Zang	Leetsdale
149	Danielle Friend	Pittsburgh
150	Gary Crowder	Quakertown
151	Jane Leshinsky	Holland
152	Gretchen Hulse	Pittsburgh

153	Arlene Mercurio	New Kensington
154	W. Deal	Factoryville
155	Steven Silberman	Pittsburgh
156	Lynne Daub	Marietta
157	David Niklas	Clairton
158	Tracy Horter	Wayne
159	Wilfrido Ortega-Leon	Collegeville
160	Becky Eshelman	Fountain Hill
161	Elizabeth McCormick	Royersford
162	Dr. & Mrs. Jeffrey Kosterich	Wayne
163	Gabrielle Corso	Coopersburg
164	Dean Kendall	Leesport
165	Bob Bingham	Pittsburgh
166	Linda Potemken	Wynnewood
167	Larry and Gimone Hall	Ottsville
[illegible]	Jane Munley	Mountain Top
[illegible]	Cheryl Piperberg	Marietta
170	Joseph Erdeljac	West Chester
171	Michael Waskovich	Dalton
172	Jolynn Davis	Trout Run
173	James Flesher	Philadelphia
[illegible]	Karen Skorski	Bloomburg
175	Bruce Barr	Winfield
176	David Stanger	Pittsburgh
177	Michael Miller	Erie
178	Mark Dixon	Pittsburgh
179	Debbie Boesenberg	Oakdale
180	Paula Fall	Bear Creek Township
181	Josette Novorosky	Dunmore
182	Michele Cyprych	McDonald
183	Patricia Reich	Allentown
184	Kristian Glover	Philadelphia
185	Deborah Kear	Allentown
186	June Reich	Danville
187	Louis & Patricia Connell	Chambersburg
188	Mary Mester	Milford
189	Cary Bohl	Murrysville
190	Adam Marks	Phoenixville
191	Mr. & Mrs. Bernard Rubb	Sewickley
192	John Feissel	Philadelphia
193	Glenn Treichler	Northampton
194	Randy Francisco	Pittsburgh
195	Jed Williams	Philadelphia
196	Marilyn Cooper	Berwyn
197	Mrs. M. Vlah	Ellwood City

198	Matt Dallos	Boalsburg
199	Barbara Steele	Littlestown
200	Melissa Sealie	Reading
201	Carol Jaworski	Canonsburg
202	C. Smith	Bethlehem
203	Joe Elsinger	Ephrata
204	Mr. & Mrs. Ben Sauder	Columbia
205	Arnold Schlichter	Conshohocken
206	Dr. Harry Hochheiser	Pittsburgh
207	Margaret Sedlack	Pittsburgh
208	Mary Leitch	Philadelphia
209	Signe Hall	Downingtown
210	Linda Sall	Villanova
211	Linda Romeo	Warren
212	Louise Larkin	Pittsburgh
213	Barbara Supplee	Berwyn
214	Mark Puskar	Pittsburgh
215	Nancy Geist	Avondale
216	Dr. Edward Silverman	Reading
217	Dannie Walker	Brookville
218	Allyson de Groat	Wayne
219	Kathy Gates	Lemoyne
220	Joy Harbeson	Philadelphia
221	Richard Ludlow	Yardley
222	Lynn Glorieux	Pittsburgh
223	Steve Kunz	Phoenixville
224	Sean Rearick	Saegertown
225	Robert Silverman	Philadelphia
226	Ariel Weimer	Manhatan
227	Ellen Smith	Havertown
228	John Jones	Pittsburgh
229	James Mcclister	Kittanning
230	John Fullen	Jeannette
231	Joseph Bertz	Lancaster
232	Dr. Jennifer Iriti	Imperial
233	Kiran Mull	Doylestown
234	Pat Laughlin	Etna
235	Eugenia Eden	East Stroudsburg
236	Kate Potter	Summit Station
237	Lauren McCarty	Glenside
238	Kathleen Reifke	Pottstown
239	Gary Finney	Erie
240	Dr. and Mrs. Sam Keiser	Kutztown
241	Dr. Jon Piersol	Wexford
242	Mr. and Mrs. Kevin Heffernan	Philadelphia
243	Joseph Devito	Pittsburgh

244	Arthur Soifer	Glenside
245	Fred Gillespie	Glen Mills
246	Anthony Panetta	Oil City
247	Mr. and Mrs. Stephen Smith	Bethlehem
248	Fran Interrante	Downingtown
249	Sasha Shyduroff	Pittsburgh
250	William Ridgeway	Scranton
251	Rosellen OSullivan	Bryn Athyn
252	Reserved	
253	Christopher Roche	Reading
254	Ronald Nordstrom	Rector
255	Robert Triplett	Hummelstown
256	Marcie Perchinsky	Scenery Hill
257	Jeff Lowry	Johnstown
258	Ronald Smith	Morrisville
259	Alison Greifenstein	Havertown
260	Gayle Shisler	Doylestown
261	Anne Swigart	West Chester
262	Mr. and Mrs. Robert Steininger	Phoenixville
263	Susan Crowle	Auburn
264	Jaynie Beard	Harrisburg
265	Vicki Nosal	Evans City
266	Lisa Long	Mechanicsburg
267	Jill Gleeson	Philipsburg
268	John Christian	Bloomsburg
269	Edmund Weisberg	Philadelphia
270	Attilia Shumaker	Sycamore
271	Weenta Girmay	Pittsburgh
272	Bonita Perry	Wynnewood
273	Torey Verts	Pittsburgh
274	Benita Campbell	Burgettstown
275	Alexandra O'Neill	Wynnewood
276	Sheila Roseman	East Petersburg
277	Diana Patsey	Oakmont
278	Ingrid Mc Millen	Audubon
279	Danielle Watson	Harrisonburg, VA
280	Caleb Banas	Williamsport
281	Keith Knecht	Pittsburgh
282	Deborah Lonsdorf	Narberth
283	Phil Landis	Shrewsbury
284	Judy Arnal	McKeesport
285	Terri Davin	Waynesburg
286	Nancy Hosford	Monroeville
287	Dr. Hilary Aquino	Lancaster
288	David Gaiter	West Mifflin
289	Elanor Bagenstose	Hamburg
290	Jo Ann Moore	Lansdale

291	Janet Crowther		Dalton
292	Sonia Kudalsky		Dalton
293	Laurel Falkenstein		Boiling Springs
294	Rhea Richardson		Wayne
295	Mr. and Mrs. Ann & Robert Buzzell		Du Bois
296	Deborah Geary		New Cumberland
297	Michelle Hoff		Kintnersville
298	Steve Paylor		Ardmore
299	Adam Faja		Philadelphia
300	Angela Wiley		Pittsburgh
301	Bruce Moyer		Souderton
302	Martha Raak		Pittsburgh
303	Reserved		
304	Jacqueline Shock		Pittsburgh
305	Fernando Maldonado	Swarthmore College	Swarthmore
306	Shannon Elliot		Bensalem
307	Thomas Nunn		Allentown
308	Dr. Michael Balsai		Philadelphia
309	F. Leslie		Fayetteville
310	Jennifer Elam		Downingtown
311	Jeanie Nunn		Allentown
312	Carolyn Hughey		Montoursville
313	Keri Leaman		York
314	Brian Lewis		Elizabethtown
315	Jill Babore		Philadelphia
316	Charles Long		Pittsburgh
317	Jessie Skiffen		Greensburg
318	Helene Katz		Jim Thorpe
319	Dr. and Mrs. Tom Owens		Indiana
320	Jorge Arauz		Philadelphia
321	Janice Horn		Clarion
322	Jeffrey and Stephanie Rupertus		Philadelphia
323	Dr. Lucinda Hart-Gonzalez	Paradise Gardens and Farm	Reynoldsville
324	Lloyd Goodman		Radnor
325	Richard Pearce		Jenkintown
326	Sherry Frost		Wayne
327	Alana Davis		Berwyn
328	Crystal Hoffman		Nanty Glo
329	Joanne Rheinlander		Marysville
330	Dr. Deborah Krupp		Huntingdon Valley
331	Beverly Williamson-Pecori		McKees Rocks
332	Patrick McDaniel		Mercersburg
333	Marlene Kauffman		New Hope

334	Bryon Gliem	Pottsville
335	Libby Goldstein	Philadelphia
336	Karen Wagner	Philadelphia
337	June Gollatz	Bethlehem
338	Sandra Bonitt	Cheltenham
339	Reserved	
340	Judith Wood	Pittsburgh
341	Keith Britton	Cheltenham
342	Finn Hornum	Philadelphia
343	Colleen Fitzgerald	Stony Run
344	Janet and John Stoner	Akron
345	Kathleen Rengert	Unionville
346	Deanne O'Donnell	Greensburg
347	Natalie Defee Mendik	Jeannette
	Bernard Lisowski	Upper Darby
349	Alice Logan	Pittsburgh
350	Lisa Hodaei	Jenkintown
	Erich Freimuth	St. Davids
352	Patrick Ryan	Media
353	Amelia Schwendt	Landenberg
354	Danna Cornick	Nottingham
355	Dr. & Mrs. Herbert Skolnick	Monroeville
	Barbara Litt	Pittsburgh
357	Barbara Walters	Cranberry Township
358	Marianna Sokol	Benton
359	Dr. Cynthia Gilman	Narberth
360	Katelyn Warner	Cranberry Township
361	Frederick Rosen	Lower Gwynedd
362	Mr. & Mrs. Todd Nixon	Croydon
363	Joan Kyler	Philadelphia
364	Amy Anna	Media
365	Dr. Marta Guttenberg	Philadelphia
366	Jennifer Filiault	Newton, MA
367	Dr. Barbara Benson	Coopersburg
368	Agnes Schwenk	Monongahela
369	David Laforest	Bangor
370	Dr. Tim Wadkins	Downingtown
371	Charles Younger	Dushore
372	Anthony Capobianco	Bethel Park
373	Jean Barker	Kennett Square
374	Dr. Tim Pearce	Pittsburgh
375	Virginia Harden	Middletown
376	Joe Hatcher	Camp Hill

377	Christina Glessner	Carbondale
378	Mary Lou Kleinbach	Mertztown
379	Gudrun Weinberg	Swarthmore
380	Dr. Frederick Reif	Pittsburgh
381	Severina Kluizenaar	West Grove
382	Rajan Wadhwani	Philadelphia
383	Barbara Vanhorn	Duncannon
384	John Furlong	Trevose
385	Mr. & Mrs. Edward Sinkler	Fountain Hill
386	Dr. Dwayne Haus	State College
387	Gregory Garansi	Wampum
388	Suzanne Hall	Mont Alto
389	Lynn Cowell	Meadville
390	Nancy Jennings	Fort Washington
391	Gary Bater	State College
392	Lisa Bleicher	Jim Thorpe
393	David Thinnes	Pittsburgh
394	Phil Starr	Lancaster
395	Jim Miller	Philadelphia
396	Jeri Schatz	Philadelphia
397	Natalie Greene	Pittsburgh
398	Thomas O'Donnell	Poyntelle
399	Miriam Parson	Pittsburgh
400	Samuel Wingard	Dayton
401	Dr. Kyoichi Haruta	Bethlehem
402	Mary Hart	Dalton
403	Michael D'Angelo	Lansdowne
404	Emily Wallace	Bethlehem
405	Dr. Helen Faller	Philadelphia
406	Cheryl Redfern	Philadelphia
407	Eric Fanning	Lititz
408	Robert Gibb	Homestead
409	Dr. G. Chapman	Bethlehem
410	Jennifer Feder	Warrington
411	Loretta Bengivenga	Pen Argyl
412	Kim Comer	Philadelphia
413	Tamara Barker	Monongahela
414	Sue Croll	Doylestown
415	Peter Wray	Pittsburgh
416	Mr. and Mrs. Larry Dejohn	Reynoldsville
417	Christopher Wright	Philadelphia
418	Robin Butler	Harrisburg
419	Dr. Chad Sethman	Carmichaels
420	Dr. and Mrs. Alfred Burgo	Pittsburgh
421	Daniel Behl	Erdenheim
422	Roger Horn	Clarion
423	Nicole Skeltys	Pittsburgh

424	Paula Capaldo		Bensalem
425	Jason Bohenek		Jessup
426	Dr. Ellen Perchonock		Haverford
427	Mr. and Mrs. John Inserra		Pittsburgh
428	Michael McCullough		Biglerville
429	Reserved		
430	Mary Peterson		Honeybrook
431	Sophia Bender		Corapolis
432	Howard Gittler		Lords Valley
433	Diane Brown		Lewisberry
434	Natalie Burford		Pittsburgh
435	Frank Whalen		Pittston
436	Wendy Futrick		Shillington
[illegible]	Dr. and Mrs. Gregory Milbourne		Swarthmore
438	Elizabeth Pugh		Pittsburgh
439	John Kane		Philadelphia
[illegible]	Jeff Schmidt	Sierra Club	Harrisburg
441	Stephen Carl		Lansdale
442	Gary Ribovic		Wilcox
443	Richard Stokes		North Wales
444	Dr. Sterling Delano		Blue Bell
445	Joyce Zimmer		Exton
446	Elizabeth Shober		Blue Bell
447	Reserved		
448	William Montgomery		Pottstown
449	William Bromyard		Mount Pleasant
450	Brian Evarts		Malvern
451	Dave Leibert		Catasauqua
452	Mr and Mrs. Ronald Horiszny		Bethlehem
453	Clare Ellinwood		Glenside
454	Dr. Steve Gallop		Glen Mills
455	Kenneth Bickel		Pittsburgh
456	Nicholas Sabetto		Fort Loudon
457	James Vogt		Saylorsburg
458	Eric Wagner		Harleysville
459	Michael LaMark		Pittsburgh
460	Mingyuan Song		Meadville
461	Jeffrey Katrencik		Eighty Four
462	Connie Halls		United
463	John and Joann Flynn		Washington Crossing
464	Gary Smith		Harrisburg
465	Mr. and Mrs. Vladislav Mikijanic		Spring Grove
466	Kristen Toole		Dillsburg
467	Barbara Spiegelberg		Pequea
468	Karen Battaglia		Pittsburgh

469	Dr Richard Iano	Wyncote
470	Eric Probola	East Pittsburgh
471	Madeline Cabano	Philadelphia
472	Margaret Yaggie	Roaring Branch
473	Laura Plunkett	Mars
474	Jamie Harkins	Breinigsville
475	Susanne Whitehead	Jenkintown
476	David Somerville	Southampton
477	Jeanette Godlewski	Hanover Township
478	Brian Sesack	Pittsburgh
479	Reserved	
480	Dr Patrick Hurley	Royersford
481	Dawn Mason	Pottsville
482	John Yuknavage	Pottsville
483	James Kelvington	Erie
484	Welibor Santic	Pittsburgh
485	Andy Weber	Bellefonte
486	Darla Barnshaw	Morton
487	JoAnn Chromicky	Brodheadsville
488	Thomas Hudson	Coatesville
489	Donna Meyers	Stowe
490	Jane Kamel	Drexel Hill
491	Mr and Mrs Daryl Lesko	Bethel Park
492	Kim Fackler	Boyertown
493	Milt Weisman	Clearfield
494	Shannon Burke	University Park
495	Michael Mcquown	Philadelphia
496	Joanna Woomer	Tyrone
497	Diane Law	Pittsburgh
498	Jim Black	Philadelphia
499	Dr Christopher Smith	Birdsboro
500	Melissa Elder	Mifflin
501	John Lawson	Penn Valley
502	Robert Jordan	Cresco
503	Barbara Ostrowski	Erie
504	Reserved	
505	Lukas Rogers	Philadelphia
506	Joseph Werzinski	New Hope
507	Anita Hamilton	Philadelphia
508	Michael Voltz	Exton
509	Whitney Harlow	Harrisburg
510	Dr and Mrs Richard Wilson	Wynnewood
511	John Mansky	Lansford
512	Barbara Jones	Pittsburgh
513	Mary Toomey	Mount Wolf
514	Dr E Unger	Beth Township

515	Reserved	
516	Ron Kauffman	State Line
517	Sara Brown	Warminster
518	Dr. Michael Sinclair	Allentown
519	Eric & Judith White	Lansdowne
520	Alice Robbins	Chesterbrook
521	Rex Jordan	Olyphant
522	Joshua Zorich	Pittsburgh
523	David Larson	Oxford
524	Jamie Fredrick	West Homestead
525	Mr. and Mrs. Craig Rhoads	Whitehall
526	Emily Mcdonald	Scranton
527	Kishore Jayakumar	McKees Rocks
528	Evelyn Haas	Philadelphia
529	Elsa Lichtenberg	Kennett Square
530	Mr. and Ms. Steven Lehman	Pittsburgh
531	Meredith Stone	Philadelphia
532	Robert Sasser	Pittsburgh
533	David Sublette	Erie
534	Kelley Socling	Jersey Shore
535	Alex Hallowell	Wayne
536	Dr. Jeffrey Bedrick	Newtown Square
537	Ming Pan	State College
538	Dr. Rosemarie Chinni-Edwards	Fleetwood
539	Norman Cook	Wyndmoor
540	Kim Neff	Altoona
541	Paul Herbert	Phoenixville
542	Carson Lane	Pittsburgh
543	Larry Trout	Havertown
544	Beth Dennis	Howard
545	Dr. Paul Rice	Elizabethtown
546	Arati Shah-Yukich	Bethlehem
547	Merian Soro	Philadelphia
548	Dana Williams	Pen Argyl
549	Mr. and Mrs. Dominic Spadaccino	Langhorne
550	Paul Gamble	Kennett Square
551	Dave King	Pen Argyl
552	Frank Sabatini	Exeter
553	Mara Wolfgang	Philadelphia
554	Bob Welch	Dallas
555	John Zorich	Pittsburgh
556	Ai Mahoney	Philadelphia
557	Paul Kalka	Conshohocken
558	Kyle Donnelly	State College

559	Kelly Thompson	Royersford
560	Meredith Donahue	Philadelphia
561	Michele Remenar	Nanticoke
562	Dr. Paul Shane	Philadelphia
563	Pat Dengel	Hummelstown
564	Cynthia Bauer	Pittsburgh
565	William Fridey	Hatfield
566	Lauren Raheja	Brooklyn, NY
567	Terry Aunkst	Turbotville
568	Jeremy Stork	Fort Washington
569	Elsa Peterson	Doylestown
570	Chuck Oatman	Drumore
571	Mary Legge	Flourtown
572	Kimberly Seger	Kittanning Pennsylvania
573	Andrew Mckinnon	Furnace
574	Dr. Lisa Allarde	Green Lane
575	Reserved	
576	Khrys Myrddin	Pittsburgh
577	Thomas Moore	Philadelphia
578	Kate Hollos	Strafford
579	Timothy Cimino	Pittsburgh
580	Lisa and Steve Schnell	Kutztown
581	Patricia Libengood	Erie
582	Samuel Rothermel	Elizabethtown
583	Rosemary Delpino	Butler
584	Polly Bech	Swarthmore
585	Eileen O'Neill	Philadelphia
586	Van Knox	Lancaster
587	Meredith Withelder	Morton
588	Adrianne Puza	Harrisburg
589	Judy Mcaulèy	Sewickley
590	Jeff Nutkowitz	Trevose
591	Charlotte Turner	Philadelphia
592	Holly & Paul Williams	Lancaster
593	Kurt Fisher	Wyndmoore
594	Robert Smith	Wexford
595	Charles Dorsaneo	Philadelphia
596	Scott Whittaker	Carbondale
597	Edward Higgins	Bensalem
598	Kate Jamal	Philadelphia
599	David Madden	Shamokin
600	Gina Williams	Aston
601	Jeanne Smith	Mansfield
602	Reserved	
603	Tina Thomas	Catasauqua
604	Janelle Jesikiewicz	Pittstown
605	Mr. & Mrs. Dianne	Charleroi

	Shepard		
606	Shannon Cummins		New Castle
607	Travis Harvey		Upper Chichester
608	Mrs. B. Rae		Hellertown
609	Carol Thompson		South Park
610	Elaine Tomko		Bear Creek Township
611	Naomi Swerdlow		Pittsburgh
612	Abigail Myers		Weatherly
613	Martha Kirby		Philadelphia
614	Walter Ebmeyer		King of Prussia
615	Michelle Sheehan		Fountain Hill
616	Brad Hirschhorn		Rockledge
617	Kenneth Yonek		Eighty Four
618	Joan Knudson		Glenmoore
19	Doris Fiorentino		Lansdale
620	Mary Corbett		Philadelphia
621	Dean Chia		Devon
.2	Linda O'Neill		Schwenksville
623	Henry Thomas		State College
624	Fawn Hanna		New Providence
625	Jerry Fisher		Philadelphia
626	Mary Hartley		Pittsburgh
627	Amelia Garrett		Collegeville
628	Maria Kydonieus		Philadelphia
629	Rita Craze		Kingston
630	Tom McCartney		Pittsburgh
631	Bonnie Reeves		Dublin
632	Dr. & Mrs. R. Leonard		Girard
633	Elaine Lopata		Pittsburgh
634	Rebecca Condict		Elkins Park
635	Sandy Kemp		New Oxford
636	Mr. & Mrs. Lois Knepp		Bigler
637	Cynthia Maize		Eighty Four
638	Michael Zuckerman		Philadelphia
639	Andrea Carman		Douglassville
640	Robert Donlen		Levittown
641	Kelsey Eggert	Arcadia University	Glenside
642	Winona Wise		Philadelphia
643	Charles Leiden		Altoona
644	Mr. & Mrs. Carol Gelfand		Pittsburgh
645	Susan Duncan		Lebanon
646	Judith Bohler		Ephrata
647	David Sorkin		Philadelphia
648	Dr. Paula Michal-Johnson		Fountain Hill

649	Edward Rafferty	Levittown
650	Elena Rippel	Pittsburgh
651	Christopher Croft	Brookhaven
652	Mary Davidson	Pittsburgh
653	Sarah Selph	Upper Chichester
654	Leigh Desantis	Philadelphia
655	Ned Leight	Souderton
656	Michael Wagner	Harrisburg
657	Courtney Davis	Macungie
658	Daniel Isenberg	Whitehall
659	Catherine Anderson	Elizabeth
660	G. DeAnnuntis	Philadelphia
661	Rose Cripps	Slippery Rock
662	David Adams	Harmony
663	Sarah Kolb	Philadelphia
664	Mrs. E. Smith	Oakdale
665	Massimo Paris	Broomall
666	Carol Paris	Broomall
667	Rosemary Hoff	Monroeville
668	Frances Sawyer	Reading
669	Kathryn Feeney	Philadelphia
670	Wayne Almond	Morrisville
671	Rebecca Glenn	Harrisburg
672	Natasha Bloom	Waynesboro
673	Samantha Meers	Birdsboro
674	Keely McCaskie	Pittsburgh
675	Jeremy Styers	Lock Haven
676	Suzanne Holler	Philadelphia
677	Gene Hillegass	Reading
678	Katherine Oxenreiter	Pittsburgh
679	Seneca Green	Lititz
680	Andrea Groppe	Wayne
681	Daniel Shertzer	Lancaster
682	Lawrence Pearson	Pittsburgh
683	Helaine Greenberg	Philadelphia
684	Bryan Richard	Morton
685	Justina Carroll	Uniontown
686	Rebecca Lawson	Mechanicsburg
687	Susan Thompson	Philadelphia
688	Michael Lawrence	Harrison City
689	Linda Partridge	Fleetwood
690	David LaVerne	Dickson City
691	Barbara Duffy	Wyncote
692	Deborah Gouge	Pittsburgh
693	Katherine Jueds	Philadelphia
694	Charlene Rush	Allison Park
695	Lois Kendall	Ft. Washington
696	Mary Aull	Pittsburgh
697	Thomas Brenner	Hollidaysburg
698	Mary Finegold	Wallingford

699	E. Buzzell	Dubois
700	Mary Barczyk	Ruffs Dale
701	John Hallenburg	North East
702	Lori Cooper-Ott	York
703	Jason Wittenbrader	Lake Ariel
704	Dr. Alicia Long	Pittsburgh
705	Gerald Mistal	Bethlehem
706	Randy Moore	Beaver
707	David Moore	Morton
708	Sandra Hurst	Narvon
709	Michael Miller	Philadelphia
710	Robert Pope	Audubon
711	Mr. and Mrs. Ron Simasek	McAdoo
712	Anita Cunningham	East Berlin
713	Jennifer Danner	Nazareth
	Daniel Karaczun	Pittsburgh
715	Jean Morgano	Nazareth
716	Henry Pyatt	Reeders
	Sioux Adams	Bethlehem
718	Daniel Greider	Lancaster
719	Jean Sweitzer	Cranberry Township
720	Mary Ann Kahl	Uniontown
721	Kathryn Thompson	Philadelphia
722	Allyson Hamm	Allentown
723	Miriam Kiss	Whitehall
724	Amy Guskin	Malvern
725	Charles Yankel	Bridgeville
726	Mark and Eileen F. Barbash	Philadelphia
727	Alexis Chontos	West Mifflin
728	Joan Sasso	Pittsburgh
729	Paul Smith	Downingtown
730	Judith Springer	Exton
731	Malcolm Seaholm	Pittsburgh
732	Michael Leeling	Souderton
733	Marion Schwartz	State College
734	Holly Peck	Pittsburgh
735	Mr. and Mrs. Michael Peale	Aston
736	Theresa Knapp	Towanda
737	James Fitch	Pittsburgh
738	Gloria Puel	Carnegie
739	Fay Gitman	Pottsville
740	Eva Monheim	Cheltenham
741	Alyson Giantisco	Philadelphia
742	Ivan Russell	Carnegie
743	Tyler Jackson	State College
744	Smita Wagh	Bethlehem
745	Frank Bartell	Philadelphia

746	Mr. and Mrs. John Bush	Malvern
747	Dr. Sandi & Peter Behrens	Pittsburgh
748	Kathy Guentner	Glenshaw
749	Kathy Lynn Dabanian	Sellersville
750	Jason Palo	Glen Mills
751	Kate Ritter	Tobyhanna
752	Mark Lazaran	East Millsboro
753	Dr. and Mrs. Gary Halstead	Pottstown
754	Troy Schreiber	Millersburg
755	Robert Rhodes	Mercersburg
756	Casey McCarthy	Phoenixville
757	Garry Doll	Williamsport
758	Greg Manning	Newtown
759	Laura Brennan	Philadelphia
760	Paloma Vila	Elkins Park
761	Andrea Leshak	State College
762	Rosemary Hennessy	Pittsburgh
763	Georgann Kovacovsky	New Bethlehem
764	Hazel Pelletreau	Lansdowne
765	Andrew Wilson	Philadelphia
766	Patricia Fiedler	Levittown
767	Carole Ostfeld	Allentown
768	Barbara Osada	Philadelphia
769	Clifford Hritz	Philadelphia
770	Donald Leonard	Media
771	Michelle Miller	Ephrata
772	Ellen Butkus	Russell
773	Dr. David Kline	Holland
774	Christa Cooke	Hickory
775	Dawn Dippre	Scranton
776	Lance Arnold	Newport
777	Kathleen Schmick	Wallingford
778	Lucinda Boudreau	Philadelphia
779	David Dunkleberger	Doylestown
780	Sarah Cutler	Orrtanna
781	C. Dougherty	Media
782	Richard Eddy	Reading
783	Mr. & Mrs. W. Bible	Abbottstown
784	Nancy Cohn	Ardmore
785	George Geiges	Newfoundland
786	Idyle Nestler	New Tripoli
787	Mindi Baurer	Lansdale
788	Mike Bengston	Easton
789	John Higgins	White Haven
790	Sally Bishop	Plymouth Meeting
791	Sally McDermott	Uniontown

792	Yuri Romaniuk	Narberth
793	Joanne Kosloski	Wernersville
794	Mr. & Mrs. Stephen Dieringer	Parkesburg
795	Beverly Fine	Johnstown
796	Helen Walker	Gwynedd
797	Mr. & Mrs. Stan Siegel	West Newton
798	Jean Wiant	Philipsburg
799	Theresa Barton	Cheswick
800	Marty Kelly	Shenandoah
801	Carol Troisi	Unityville
802	Jon Levin	Macungie
803	Mark Gormel	Landenberg
804	Lester Care	Birdsboro
805	Thomas Wheeler	South Abington Township
806	Sherri Fryer	Clymer
807	Randolph Eck	Temple
808	Susan Horiszny	Bethlehem
809	Barbara Gibson	Philadelphia
810	Catherine Fusco	Bushkill
811	Carolyn Auwaerter	Malvern
812	Kim Mcclure	Lancaster
813	Jean Kozel	Eagleville
814	Teana Van Meter	Stroudsburg
815	Ben Breuninger	West Grove
816	Susanne Shaffer	Spring Grove
817	Kathy Booth	Moon Township
818	Steve Gilbert	Norristown
819	Warren Getchell	Meadville
820	Elizabeth Pankoe	New Britain
821	Tonia O'Connor	Saylorsburg
822	Mr. and Mrs. Charles Frost	Wayne
823	Heidi Pandolfi	Pittsburgh
824	Stella Barrett	Greenville
825	Connie Prundeanu	Jamison
826	John Cairns	Plymouth Meeting
827	Jason Gulvas	Dubois
828	Richard Firestine	Myerstown
829	Nicole Caruso	Hershey
830	Dr. and Mrs. Michael Benning	Allentown
831	Judith Frank	Garnet Valley
832	Kristen Bryant	Allentown
833	Glenn Lyons	West Chester
834	Mr. and Mrs. Christopher Seymour	Pittsburgh

835	Estelle Maisel	Philadelphia
836	Laura Ray	Bethlehem
837	Lynn Stehr	Bridgeville
838	Chloe Mekinc	Philadelphia
839	Eela Thakrar	Bethlehem
840	John Antonio	Wellsboro
841	Garth Dellinger	Pittsburgh
842	Debra Wontor	Lords Valley
843	Vivienne Spector	Jenkintown
844	David Danner	Freeport
845	Deborah Hansen	Swarthmore
846	Cass Peluso	Williamsport
847	Julia Stone	Birchrunville
848	Monica Held	Washington
849	Kimm Tynan	Philadelphia
850	John & Karol Patsy	Clinton
851	Roy Laplante	Wynnewood
852	Linda Blythe	Philadelphia
853	Tim Hreha	Pittsburgh
854	Ellen Dietrich	Lehighton
855	Marie Holland	Chadds Ford
856	Timothy Shaw	Nanticoke
857	David and Lani Frank	Berwyn
858	George Adams	Ambler
859	Christine Sandvik	Collegeville
860	Daryl Rice	Perkasie
861	Elinor Daley	Greenfield Township
862	Robert Coon	Cochranton
863	Mrs.Vincent Young	Little Meadows
864	Paris Ligi	Jessup
865	Robert Drummey	Collegeville
866	David Dagney	Philadelphia
867	Corinne Mayland	Lansdale
868	Thomas Cronin	Philadelphia
869	Bob and Carmen Riggs	Bethlehem
870	Linda Leghart	Jacobs Creek
871	Edward Thornton	Swarthmore
872	Brenda DePersico	West Chester
873	Dr. Michael Soso	Pittsburgh
874	Darwin Aurand	Harrisburg
875	Stephanie Reed	Oley
876	Susan Markowitz	Lahaska
877	Linda Huber	Hanover
878	Lawrence Zappaterrini	Malvern
879	Elizabeth Brooking	Unionville
880	Lisa Widawsky	Washington, DC

881	Anna Mates	Pittsburgh
882	Katherine Hackney	Pittsburgh
883	Robert McClellan	Bryn Mawr
884	Gail Sieg	Pittsburgh
885	Dr. Rise VanFleet	Boiling Springs
886	Carol Silverman	Elkins Park
887	Ruth Woodcock	York
888	Jay Erb	Pottstown
889	Dr. and Mrs. Bruce Rockwood	Bloomsburg
890	Ron Slabe	New Kensington
891	Diane Grandstrom	Reading
892	Alvin Leonard	Ebensburg
893	Dr. Joann Seaver	Philadelphia
894	Rachel Chaput	Dingmans Ferry
895	Barbara Rosenzweig	Southampton
896	Joan Schoff	Allison Park
[illegible]	Dr. Maren Cooke	Pittsburgh
898	Laurie Goodrich	Orwigsburg
899	James Martin	Camp Hill
900	Elizabeth Black	Pittsburgh
901	Larry Menkes	Warminster
902	Daniel Gallagher	Ephrata
903	Lisa Brock	Wyncote
904	Laurie Wolfe	Lansdowne
905	Reserved	
906	Judith Pennington	Bath
907	Don Baun	Pittsburgh
908	James & Judith Fordham	Coburn
909	Mr. and Mrs. David Cutler	Holland
910	Trish Swanson	Valencia
911	Clyde Putnam	Philadelphia
912	Jim Lynch	Philadelphia
913	Brian Leyde	State College
914	Andi New	Blue Bell
915	Dr. Barbara Grover	Pittsburgh
916	Bernard Martin	Dayton
917	Theresa Reiff	Norristown
918	Steve Sears	Hatboro
919	Amanda Barker	Camp Hill
920	Dr. Robert Adams	Clayton, NC
921	Michael Ryan	Philadelphia
922	Dr. Cecil Ault	Indiana
923	Anna Mccartney	North East
924	Christopher Ray	Swarthmore
925	Donna Haney	Bethlehem
926	Gary Swartz	

927	Robert Gadinski		Ashland
928	Dennis Finotti	Piney Creek Limited Partnership	
929	C. L. "Skip" Missimer	Glatfelter	Spring Grove
930	Joseph Dawson		McDonald
931	Tom and Barb Martincic		
932	Jeff Hironimus		McDonald
933	Reserved		
934	Christiana Dietzen		Philadelphia
935	Delores Columbus	Executive Director	Ebensburg
936	Anita Hanrahan		Imperial
937	Matthew Ziemniak		Oakdale
938	Jo Post		
939	Wayne Anderson		Oakdale
940	Keely McCaskie		
941	Ricky Reedy		
942	Gary Swartz		
943	Lee Gorny		
944	Erik, Kim, Vaughn, and Adeline Schutzman		McDonald
945	Daniel Traynor	Northampton Generating Company, L P	Northampton
946	Cathy Lodge		Bulger
947	Robert Smith		
948	Josie Gaskey	Pennsylvania Coal Association	Harrisburg
949	Randy Lindenmuth	Lehigh Engineering, LLC	Pottsville
950	Bruce Payne, PhD	Department of Environmental Engineering and Earth Sciences	Wilkes-Barre
951	Julie Alwine		Imperial
952	Randy Alwine		Imperial
953	Raina Rippel	Center for Coalfield Justice	Washington
954	Richard Taylor	RNS Services, Inc.	Blossburg
955	Reserved		
956	Lisa Graves-Marcucci	Environmental Integrity Project	Jefferson Hills
957	Sam Flenner		Indianapolis, IN

958	Richard Shaffer	Scrubgrass Generating Co. L.P.	
959	Steve Weyandt, P.E.	The Pennsylvania State University	University Park
960	Jeff McNelly	ARIPPA	Camp Hill
961	Chris Wentlent	AES Beaver Valley, AES Thames, and AES Westover	
962	Glenn Amey, P.G.		Allentown
963	Stephen Dixon	RRI Energy, Inc.	Canonsburg
964	Sharon Barbour		Harrisburg
965	Duane Feagley		
966	William Gorton, III		
967	Stephanie Wissman	PA Chamber of Business and Industry	Harrisburg
968	Claudia Kirkpatrick	Allegheny Group, Sierra Club	
969	Joe Osborne	Group Against Smog and Pollution, Inc.	Pittsburgh
970	Robert Grimm	North Fayette Township	
971	Abigail Dillen	Earthjustice	New York, NY
972	Thomas Schmaltz, Ph.D.	Headwaters Incorporated	Bogart, GA
973	Pauline Williams		
974	Ronald Bennett		Hastings
975	Paul and Carol Reed		Oil City
976	Michael Whitting		Kennerdell
977	Myrtle Reed		Oil City
978	Virginia Stover		Oil City
979	Mary and Robert Boyles		Oil City
980	Robert and Sally Stover		Oil City
981	Evan Heeter		Parker
982	Steve Reed		Oil City
983	Charles Mahle		Strattanville
984	James Snow		Emlenton
985	Jonas Pipher		Parker
986	Jeff Irwin		Cranberry
987	David Peters		Sligo
988	John Harknes		Knox
989	James Welton		Karns City
990	Ken Yelland		Butler
991	Randy Miller		Seneca

992	Karen Pirie	Knox
993	Robert Martin	Franklin
994	Blair Bundy	Emlenton
995	Jamie Mahle	Strattanville
996	Michael Summerville	Shippenville
997	Thomas Bell	Foxburg
998	Justin Reinard	Kennerdell
999	Jack Egley	Grove City
1000	Emily Egley	Grove City
1001	Robert Braden	Knox
1002	Dennis Adams	Knox
1003	Steve Hines	Kennerdell
1004	Stephen Schwabenbauer	Knox
1005	Robert Griswold	Franklin
1006	Steve Sumner	Oil City
1007	Jeff Hindman	Grove City
1008	Michael Tacey	Parker
1009	Floyd Simmons	Knox
1010	Robert McCauley	Oil City
1011	Thomas Fairley	Emlenton
1012	Greg Ort	Emlenton
1013	Jeff Young	Oil City
1014	Aaron Lemmon	Emlenton
1015	Frank Lominski	Boyers
1016	Edgar Bailey	Parker
1017	Ryan Witzel	Knox
1018	Mike Barkley	Polk
1019	Edward Reeher	Kennerdell
1020	Bryan Butler	Emlenton
1021	Albert Renwick	Bruin
1022	Walter Best	Strattanville
1023	Billy Gilbert	Oil City
1024	Mr Guff	St Petersburg
1025	Brian Campbell	Knox
1026	Rodney Wise	Oil City
1027	George Gurtwin	Summerville
1028	David Linamen	Turkey City
1029	Diana O'Neil	Seneca
1030	Christopher Kapp	Oil City
1031	Mike Lauer	Fryburg
1032	William Allmendinger	Knox
1033	James Rhodes	Sandy Lake
1034	Richard Day	Slippery Rock
1035	Samuel Bucholz	Knox
1036	Kenneth Stalh	Boyers
1037	G Flinspach	Oil City
1038	Jason McCorkle	Knox
1039	Joni Saylor	Callensburg
1040	Viola Fulmer	Callensburg

1041	Charles Runyan		Callensburg
1042	Charlotte Runyan		Callensburg
1043	Debra Schwabenbauer		Knox
1044	Ralph Cattas		
1045	Joseph Carr		
1046	Richard Dunn		
1047	Angie Gyorko	Savage Service, Inc.	Morgantown, WV
1048	Jim Ruby		
1049	James Gile		
1050	David Schmidt		
1051	Bud Cobb, Sr.		
1052	Thomas Eruin		
1053	Mike Lee		
1054	James Louis		
1055	Bill Reily		
1056	Max Scott		
1057	Heather Harkmess		Knox
1058	John Geary, Jr.		
1059	Vern Alden		Cranberry
1060	Matthew Wholey		Pittsburgh
1061	Duane Feagley	Pennsylvania Anthracite Council	Pottsville
[illegible]	Ruth Alden		Cranberry
1063	John Finet		
1064	Sherry Reed		Oil City
1065	Gerald Wetzel		Knox
1066	Michael Chicka		Saltsburg
1067	Mable Seger		Clarksburg
1068	Jerry Swartz		Saltsburg
1069	Melvin Way		Shippenville
1070	Sherry Wonderly		Leeper
1071	Brenda Chicka		Saltsburg
1072	Peggy Carnahan		Saltsburg
1073	Thomas Stover		Fryburg
1074	W. Ray Bailey, Sr.		Parker
1075	Joseph Bechtel		Eau Claire
1076	Joan Peters		Sligo
1077	Rose Stover		Fryburg
1078	Keith Kline		Tionesta
1079	Wilda Cotton		Franklin
1080	Loraine Hepler		Sligo
1081	Daniel Peters		Sligo
1082	Greg Berteotti		Emlenton
1083	Karen Lauer		Fryburg
1084	Sheila Lauer		Clarion
1085	Dakota Lauer		Clarion
1086	Michael Peters		Rimersburg
1087	Kimberly Butler		Emlenton

1088	Tim Fulmer		Callensburg
1089	Peg Wetzel		Knox
1090	Terry Stover		Fryburg
1091	Craig Roberts	Borough of Bangor	Bangor
1092	Jennifer and David Detar		Fryburg
1093	April Milburn-Knizner	Babst Calland Clements Zomnir	Pittsburgh
1094	Robert Lake		Coraopolis
1095	Steve Dixon	Electric Power Generation Association	
1096	Richard Shaffer	Scrubgrass Generating Co.	Kennderdell
1097	Joe Osborne	Group Against Smong and Pollution	Pittsburgh
1098	John Foreman	US Environmental Research Service	Altoona
1099	Randy Francisco	Sierra Club	Pittsburgh
1100	Jeff Chesler	Savage Services Corporation	
1101	Russ Forsythe	AES Beaver Valley, LLC	Monaca
1102	Rachel Martin		Pittsburgh
1103	Phil Coleman	Pigeon Creek Poets	
1104	Dennis Simmers		Ebensburg
1105	Van Plocus	Coal Valley, LLC	Punxsurtawney
1106	Gary Anderson	Ebensburg Power Company	Ebensburg
1107	John Foreman	US Environmental Research Service	Altoona
1108	Karen Giles		Portage
1109	Robert Piper, Jr.	Cambria County Conservation District	Ebensburg
1110	Etta Albright		Cresson
1111	Shawn Simmers		Ebensburg
1112	Arthur Rose		State College
1113	Larry LaBuz	PPL Generation	Allentown
1114	Randy Lindenmuth	Lehigh Engineering,	Pottsville

		LLC	
1115	Thomas Brown	Northampton Generating Co	Northampton
1116	Michael Sinclair		Allentown
1117	Doug Biden	Electric Power Generation Association	Harrisburg
1118	Reserved		
1119	Wendy Taylor		Camp Hill
1120	Kim Kaufman	Independent Regulatory Review Commission	Harrisburg
1121	Cindy Tibbot	United States Department of the Interior, Fish and Wildlife Service	State College

Acronyms

Board or EQB – Environmental Quality Board
CFB – Circulating Fluidized Bed
DEP – Department of Environmental Protection
HSCA – Hazardous Sites Cleanup Act
NAS – National Academy of Sciences
SHS – Statewide Health Standard
SMCRA - Surface Mine Conservation and Reclamation Act
SWMA – Solid Waste Management Act

General Comments

1. Comment:

The commentators support the continued beneficial use of coal ash in PA without imposing additional requirements and regulations. With all the reclamation projects that have been completed in PA, there has not been a single problem. There appears to be no deficiencies in the existing regulations as they stand. (2, 926, 942, 973-1059, 1062-1090, 1092, 1109, 1115)

The PA Chamber of Business and Industry (PCBI) requests the Board and DEP to carefully consider whether the universe of proposed regulatory changes are necessary in the first instance and, if warranted by deficiencies in the existing regulations, are appropriately and narrowly tailored to address those deficiencies in the least intrusive manner that is practical. The evolutionary process with respect to the beneficial use of

coal ash would appear to warrant a light touch at this juncture given the fact that the existing program has a proven positive track record. (967)

Response:

The proposed regulations contain key provisions of Department guidance and adopt recommendations from the National Academy of Sciences 2006 report, which can be located at the following link: http://www.nap.edu/catalog.php?record_id=11592#toc. During the process of amending the Department's technical guidance, "Certification Guidelines for the Chemical and Physical Properties of Coal Ash Beneficially Used at Mines" (Document Number 563-2112-224) and "Mine Site Approval for the Beneficial Use of Coal Ash" (Document Number 563-2112-225), the most frequent public comment was that the content of the technical guidance should be placed in regulations. DEP agrees.

The key provisions and recommendations establish operating requirements for the beneficial use of coal ash, certification guidelines for the beneficial use of coal ash at active and abandoned mine sites, water quality monitoring and storage requirements for coal ash stored in piles and surface impoundments. These provisions clarify the procedures and standards that apply to coal ash and that will be enforced by DEP.

2. Comment:

Clearly, the proposed regulations are reflective of the findings and recommendations contained in the NAS report. Many of the safeguards identified in the NAS report already exist in the current regulations. Rather than a dramatic overhaul, the proposed changes to PA's beneficial program require only targeted "upgrades." We support those proposed regulations in Chapter 290 that are designed to address the NAS recommendations. (963, 1093, 1095)

Response:

Many of the recommended standards from the NAS report have been incorporated into the ash program in Pennsylvania through the guidance documents. This effort is intended to implement the requirements through regulations.

3. Comment:

Is it possible to separate coal ash from fluidized bed ash? The composition of the fluidized bed ash is completely different from normal boiler ash. (3)

Response:

The definition of "coal ash" in the Solid Waste Management Act, as amended, does not distinguish between these types of coal ash.

4. Comment:

Under proposed Chapter 290, no provisions for a period are provided to the requirements for current sites where coal ash is actively being stored or used prior to adoption of these regulations. There is no indication as to the effective date on which the new requirements in these regulations are applicable. (4, 961, 963, 966, 972, 1120)

Response:

Interim requirements have been added in 290.307 and 290.415 for water quality monitoring and storage requirements. Many of the new requirements in these regulations, such as coal ash certification, have already been implemented under Departmental policies and transition provisions in these areas are considered unnecessary. In other areas, the Department will need to use its discretion to make decisions on a case-by-case basis how to transition specific requirements.

5. Comment:

We recommend "grandfathering" such that the new requirements do not apply to previously approved projects and ongoing projects for a period of two years after the effective date of these regulations. (962)

Response:

Interim requirements have been added in 290.307 and 290.415 for water quality monitoring and storage requirements. Many of the new requirements in these regulations, such as coal ash certification, have already been implemented under Departmental policies and transition provisions in these areas are considered unnecessary. In other areas, the Department will need to use its discretion to make decisions on a case-by-case basis how to transition specific requirements

6. Comment:

We oppose the regulation of fly ash into PA mines. (931)

Response:

The opposition is acknowledged.

7. Comment:

Coal ash is filled with toxic chemicals and heavy metals. PA is the third largest producer of this waste. We shouldn't allow this toxic substance anywhere near our drinking water. Coal combustion waste is contaminating water sources across America and in PA. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925)

Response:

Coal ash used for beneficial use must meet stringent physical and chemical requirement for the intended uses. The final rulemaking includes setback distances from beneficial use sites and storage sites to drinking water supplies that are protective of human use. The final rulemaking also includes water quality monitoring requirements to gauge the effects of the placement and use of coal ash. The Department considers the leachate limits and other requirements in Chapter 290 to be protective of human health and the environment, including drinking water sources

8. Comment:

This toxic coal ash should be sealed with the use of composite liners and guidelines that ensure isolation from groundwater. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925, 941, 1102)

Response:

Modeling used to develop the leachate standards in these regulations is designed to protect the groundwater without the need of liners. The regulations generally require an eight-foot separation of the coal ash from groundwater except where the coal ash is specifically used as a cement-like material for mine subsidence control, mine fire control or mine sealing.

9. Comment:

The commentator compared ash from the TVA Kingston site and spill with Pennsylvania generated ash and sites, pointing out ash from PA is collectively worse. (927)

Response:

The Department does not consider this comparative analysis to be relevant to the proposed regulations. The ash proposed for beneficial use in this regulation is newly generated ash often associated with cleaner burning technologies. The request to bring TVA Kingston ash to Pennsylvania was denied because that material would not pass the Department's certification standards or satisfy the regulations.

10. Comment:

The proposed regulations fall short because nearly all of the requirements listed can be waived by DEP at its discretion, without any showing why the waiver will not compromise adequate protection of human health and the environment. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925, 930, 932, 935, 936-940, 943, 946, 947, 951-953, 970, 971, 1060, 1094, 1102, 1119)

The primary purpose of placing the guidance document provisions into a regulatory framework is to create enforceable, nondiscretionary requirements. This purpose is defeated by the numerous provisions reserving discretion for DEP to diverge from these regulatory requirements, often without even describing the criteria or factors to be considered in allowing a requirement to be waived. (969)

Response:

To clarify the Department's intent, the regulations have been amended to require minimum requirements for the testing and monitoring protocols, but allows the Department to increase those requirements where warranted.

11. Comment:

The public should be permitted to participate in the entire permitting process. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574. 576-601, 603-904, 906-925)

Response:

Permitted mining activities require public notice and allow for public participation. These final-form regulations require public notification through newspaper advertisements for projects involving placement of more than 10,000 tons of coal ash per acre or more than 100,000 tons of coal ash in total as structural fill at mining activity sites and at abandoned coal mine sites. In addition to permitted mining activities, there are other public notification requirements for other beneficial uses of coal ash.

12. Comment:

Any company that cannot obtain the requisite financial assurances to cover remediation of potential environmental impacts should not be allowed to engage in the risky business of minefilling. The rules fail to include any financial assurance requirements in light of the known risks associated with ash placement. Under the Resource Conservation and Recovery Act ("RCRA"), hazardous waste disposal facilities are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities. Companies that use mines as disposal facilities for coal ash should be subject to similar requirements. Before issuing any beneficial use certification, companies should be required to comply with upfront bonding requirements that are set at an amount sufficient to cover the cost of long-term monitoring and potential remediation costs. (971)

A new section requiring financial assurance in the form of bonds or similar instruments should be included in these regulations requiring financial assurance to be posted by operators before permit issuance and maintained throughout required monitoring at a site in amounts sufficient to monitor and abate pollution from the ash. Such assurance should

not be released until monitoring has verified that ground waters and surface waters have not been contaminated and are not likely to be contaminated by that placement. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925, 930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 969, 970, 1060, 1094, 1108)

Response:

The Department does not believe that beneficially using ash for mine reclamation is risky business, that coal ash is hazardous waste or that the use of certified coal ash for mine reclamation will result in pollution and necessitate remediation. Coal ash has been used for mine reclamation within the Commonwealth for more than 20 years without any adverse impacts to the environment. Accordingly, there has not been a need to secure additional financial means at a coal ash beneficial use site. The known risks of ash beneficial use are addressed through implementation of procedures required in the regulations and permit decisions-making. In addition, the Department has increased responsibility of the coal ash generators through requirements in the certification section in § 290.201. Financial assurances are required for mining permits.

13. Comment:

IRRC notes that several commentators believe bonds should be required to address long-term water quality problems and to protect taxpayers from potentially expensive cleanup costs. The Board should explain how the regulation adequately protects PA from any long-term financial obligations if the placement of coal ash causes water quality problems. (1120)

Response:

Certification standards and operating requirements are designed to be protective of public health and safety and the environment. In the unlikely event that water quality problems would occur, both the generators and the site operators may be held liable.

Financial assurances are required for mining permits. For permitted coal mine sites, the Department has the authority under the mining laws to require an increase in bonding to cover remedial costs if conditions warrant.

14. Comment:

Financial assurance should not be released until monitoring results verify that no contamination to groundwater or surface water has occurred or is likely to occur. (1102)

Response:

For permitted coal mine sites, the Department has the authority under the mining laws to extend financial assurance beyond ten years if conditions warrant.

15. Comment:

The commentator does not believe that the ash being beneficially used is actually coal ash. In 1986, the Department of Environmental Resources Secretary said that this is the same stuff that comes out of people's stokers. You cannot burn cement kiln dust, carbonaceous shale, or lime kiln dust in your stoker. (927)

Response:

This rulemaking regulates the beneficial use of coal ash, which is defined in Chapter 290.

16. Comment:

The project that is used to justify the dumping of all these wastes in PA goes back to Bark Camp. I could not find one map showing a potentiometric surface of water in that area, the groundwater. Based on the data they do not have one downgradient well based on structural geology and mining in the area. Is this what we are basing this regulation on? (927)

Response:

Results from the studies at Bark Camp were not used as a basis for this rulemaking.

17. Comment:

In the last 30 years, coal users have developed many beneficial uses for coal ash instead of simply disposing of it in landfills. Coal ash is now considered a valuable commodity The proposed rulemaking regarding beneficial use of coal ash is an important step maintaining the use of coal and the beneficial use of coal ash. (929)

PCBI supports the efforts of DEP and the Board to ensure coal ash can be beneficially used in a broad array of ways. (967)

Response:

The Department acknowledges the supportive comment.

18. Comment:

The following terms are not specific and create difficulty in understanding the guidelines: "Conventional alkaline materials," "quality standards," "change in fuel source" and "stand-alone alkaline additive." (935)

Response:

This comment pertains to technical guidance documents and not these regulations. These terms are not used in these regulations.

19. Comment:

The guidelines provide host and municipalities the opportunity to review and comment on the possible beneficial use of coal ash. A period of not more than 30 days should be included so that the process keeps moving forward. (935)

Response:

This comment pertains to technical guidance documents and not these regulations. Public comment periods are part of the permitting process for mining activities and are not specified in these regulations.

20. Comment:

Please consider the people you are going to affect and protect them with more stringent regulation. (936, 937)

Response:

These regulations are being enacted to protect human health and safety and the environment.

21. Comment:

We need to have real, enforced regulations of hazardous waste. (941)

Response:

The chemical composition of coal ash that is beneficially used in PA is significantly well below the criteria for materials that are classified as hazardous waste.

22. Comment:

Regular checks on water quality in the area and a course of action for compromised areas are necessary for the safety of the citizens. (941)

Response:

These regulations increase the frequency and duration of water quality monitoring at coal ash placement sites and expand the list of constituents required to be monitored. They also contain provisions for assessment and abatement.

23. Comment:

I hope the Board will vote against this proposition and for safer restrictions. (944)

Response:

The comment has been noted.

24. Comment:

I believe the responsibility for ash disposal and utilization sites and any environmental impacts they may cause should be a permanent obligation of the site owners/operators (950)

Response:

Site owners and operators must comply with the provisions of Chapter 290.

25. Comment:

If the proposed regulations eventually stand without addressing this commentator's issues, then the regulations should at least require fully developed emergency response and environmental corrective action plans to address future impacts. (950)

Response:

Emergency response plans are designed to cover incidents that require swift action, such as fires or spills. The required water quality monitoring ensures that problems can be identified and addressed before they become emergencies.

Environmental corrective action plans are developed after the nature of the problem is known. The regulations in § 290.305 require development of abatement plans in the event water quality degradation occurs.

26. Comment:

We support those proposed regulations that are designed to address the concerns in the NAS report and, where necessary, strengthen the existing beneficial use regulations. However, this must be done in a manner that recognizes the specific characteristics of the ash to be beneficially used, how the ash is intended to be used, and the specific characteristics of the site where the material is to be placed. Discrete changes in the chemical characterization of the coal ash or in water quality cannot serve as the basis for making operational or regulatory changes. (691, 963, 1117)

Such decisions must be based on statistically significant changes that are supported by clear trends. (961)

Response:

The final-form regulations are compatible with statistical data treatment of trends and recognize specific ash characteristics, intended ash use and site characteristics.

27. Comment:

Since this chapter of the residual waste regulations is being modified on a separate track from the other solid waste regulations, we are concerned that there are references in the proposed regulations to other chapters or requirements of the solid waste regulations that could be modified or developed at a future date. (961, 963)

Response:

All regulations are subject to modifications in the future. Like this rulemaking, a public comment period would be held at the proposed stage to allow input to be provided by the regulated community and other interested parties.

28. Comment:

The independent power industry relies on pre-negotiated power purchase agreements for fixed costs. The industry is very concerned about the increase in administrative costs associated with environmental regulation with no apparent benefit to the environment. (966, 1105, 1115)

These regulations will, in no doubt, place an additional financial burden on an already heavily regulated industry. (1100)

Beneficial use of waste coal-fired ash should be encouraged and not made to be even slightly more financially burdensome or punitive. (1104)

The cost of environmental compliance has become overbearing. These unfair cost burdens are life-threatening to the waste coal plants due to their fixed-price contracts, their small size, and the high cost associated with waste coal plant operations. (1105)

Response:

Adopting the NAS recommendations and other changes will benefit the environment and is a reasonable course of action.

The concern of increased cost is valid; however, the beneficial use program results in a cost-savings to the industry.

29. Comment:

Because coal ash contains very serious contaminants, it is crucial that contaminants at each site be fully characterized. All coal ash sites must be monitored with sufficient frequency, and the monitoring must be continued over the long term. (968)

Response:

These regulations have addressed upgrades to both source and site characterizations. For example, the regulations increase the monitoring frequency and number of chemical parameters measured in both coal ash characterization and water quality monitoring for ash sites exceeding 10,000 tons per acre or 100,000 tons in total per project. The duration of water quality monitoring has also been increased to ten years after final coal ash placement.

30. Comment:

It is crucial that coal ash be completely isolated from surface water. (968)

Response:

The regulations contain isolation distances from bodies of water in Subchapter B (related to beneficial use of coal ash).

31. Comment:

The NAS report "recommends that secondary uses (of coal combustion wastes) that pose minimal risks to human health and the environment be strongly encouraged." DEP policy should likewise encourage safer alternatives where possible, and the regulations should contain a statement to this effect. (969)

Response:

These regulations provide the basis foundation for the safe, beneficial use of coal ash while being protective of human health and safety and the environment.

32. Comment:

The proposed regulations, particularly those relating to certification, must reflect the diversity of the actual beneficial use. Certainly, ash to be incorporated into a product, such as concrete, should not be assessed in the same manner as ash being placed directly on the ground – as in large structural fills and mine reclamation projects. (963)

Response:

These regulations reflect the diversity of possible beneficial uses. The chemical analysis requirements for coal ash used in concrete or cement (§ 290.106(b)(1)) can be waived or modified by DEP (290.101(b)).

33. Comment:

The proposed rulemaking should include a technical correction to § 285.115(c). (1093)

Response:

Section 285.115(c) relates to residual waste landfills and disposal impoundments and is outside the scope of this rulemaking.

34. Comment:

The Board should explain how it selected the various limits in these regulations and how they protect the public health, safety and welfare. (1120)

Response:

Many of the limits in this rulemaking already existed in the residual waste regulations or DEP technical guidance for the beneficial use of coal ash. For example, the chemical limits and separation distance from the water table in this rulemaking were developed through fate and transport modeling and risk assessment. Additional changes were made at the suggestion of the National Academy of Sciences.

35. Comment:

We are concerned with the importing of waste coal and coal ash into PA. Importing of waste coal and coal ash could effectively compromise the environmental benefits for PA by slowing the reduction of coal piles within PA while another state receives the environmental benefits. Therefore, we request an explanation of whether out-of-state waste coal and coal ash will be imported into PA and the impact on the benefits of beneficial use of coal ash if waste coal and coal ash is imported. (1120)

Response:

Transportation costs are a key factor in importing/exporting. While there are some ash sources that import into Pennsylvania, this percentage is very small compared to the very local sources of fuel used to produce ash that is beneficially used at a nearby site.

Any attempt to prohibit the importation of out-of-state waste coal or coal ash through these regulations may raise concerns with the Interstate Commerce Clause of the US Constitution.

36. Comment:

In §§ 290.104(a)(1), 290.105(a)(1) and 290.409(1) the reference to "other applicable statutes and regulations promulgated thereunder" is vague. We recommend more specific references be included in the final-form regulations. (1120)

Response:

A comprehensive detailed list of all applicable provisions of other environmental statutes and regulations that may be applicable is impractical, and the phrase is intended to make clear that the listing of citations in each of these sections is not a limitation.

37. Comment:

Under §§ 290.304(c) and 290.305(b), how would one know if a person is an "expert" in the field of hydrogeology? We recommend that a more precise standard be included in the final-form regulation. (1120)

Response:

These subsections have been revised in the final-form regulations to specify that a PA licensed professional geologist must prepare the assessment plan and abatement plan.

38. Comment:

Sections 290.102(e)(4), 290.103(e)(2), 290.105(e)(9), and 290.404(a)(7) and (b)(3) should also include a 300-foot setback from exceptional value or high quality waters as defined in § 93.1. (1121)

Response:

The Department agrees and has added the suggested language in the final-form regulations.

39. Comment:

Sections 290.102(e)(4) and 290.105(e)(9)(iii) contains a 100-foot setback from a sinkhole or an area draining into one. If the sinkhole is a result of geomorphic features, establishing a distance from the sinkhole will not be protective when a new sinkhole develops under the coal ash. We believe coal ash should not be used as fill or stored (§ 290.404) unless the underlying geomorphic features are stable. (1121)

Response:

The Department agrees that coal ash should not be used as fill or stored unless the underlying geomorphic features are stable.

40. Comment:

I think this is a step in the right direction that we support. (1101)

Response:

The Department acknowledges and the supportive comment.

41. Comment:

The use of coal ash is not beneficial. (1103)

Response:

The beneficial use of coal ash for a wide variety of applications has been successfully demonstrated. The regulations are intended to further support the beneficial use of coal ash while assuring the protection of the public health and safety and the environment.

42. Comment:

The watershed associations did not even get a footnote in the proposed rulemaking despite their importance in watershed health. These volunteer organizations have no means of creating economic wealth and therefore cannot afford to construct, maintain, sample or analyze water from projects that exceed the 100,000 ton limit. (1098)

Response:

Watershed groups have proven to be a valuable resource in restoring and maintaining the watersheds. However, the requirements for water quality monitoring at sites where large quantities of coal ash are placed are designed to establish a long-term scientific record demonstrating the effective use of the material.

43. Comment:

In the current format, the property owner's determination of appropriate land use and desirable environmental restoration is subjugated and only the Commonwealth gets to decide whether beneficial coal ash is necessary. (1098)

Response:

Property owners can decide whether to allow certified coal ash to be beneficially used on their properties.

44. Comment:

In the oral testimony, there is not an existence of trust and not the kind of collaboration that I would expect among the government (DEP), the businesses and industry and the citizens, like the Sierra Club. We need to do tremendous work on that. (1110)

Response:

The Department agrees. In developing the proposed regulations and the technical guidance documents on beneficial use of coal ash at mine sites, the Department met with a wide range of stakeholders, including the Pennsylvania Chamber of Business and Industry, the Electric Power Generating Association, ARIPPA, the Pennsylvania Coal Association, the Pennsylvania Anthracite Council, the Sierra Club, Environmental Integrity Project, and Earthjustice.

45. Comment:

The utilization of coal fly ash to amend and mitigate coal refuse has foreseeable benefits with regard to water quality. However, there are few such sites that have a sufficiently [illegible] history to determine whether the available alkalinity in the added ash is sufficient to maintain an elevated pH over the long term. There are methods for estimating long-term acid/base balance for such sites; however, various methods used have been criticized for underestimating the amount of alkalinity needed over the long term. Neither the existing nor the proposed regulations effectively address this issue. (950)

Response:

The Department has 20 years of monitoring data on some permitted coal refuse reprocessing sites that have received coal ash. These sites have not shown negative effects from use of coal ash, and in fact, there are documented instances of water quality improvements through time.

46. Comment:

The *de minimus* [sic] or insignificant concept is missing from these regulations. These regulations should only be effective for projects where more than a certain quantity is involved. (949)

Response:

Although not all projects are subject to all of the requirements in this Chapter, the Department has not developed de minimis thresholds for beneficial use.

47. Comment:

Throughout these regulations, the term "minimized" is used. "Minimized" does not establish a binding standard that can evenly be applied to all members of the regulated community or give enough guidance to the regulated community so that they will know

how to comply. A standard should be provided in these regulations that can be clearly understood. (1120)

Response:

The Department disagrees. "Minimized" is an appropriate term and has been used in other sections of the residual waste regulations. It is defined in the dictionary as to estimate or make appear to be of the least possible amount.

48. Comment:

We will learn a lot as we put these new regulations in place. We should plan to review the pitfalls and varying interpretations of these regulations and take corrective or clarifying action to revise them as needed after a year or so. (949)

Response:

The Department continuously reviews its programs and makes adjustments through technical guidance and changes in regulations.

49. Comment:

The increased cost for beneficial use of coal ash that is being proposed severely restricts the operators from hundreds, if not thousands, of small piles unless there is a place to put the ash. (1106)

Response:

The final-form regulations have been amended to provide options and flexibility for remediating small waste coal piles.

50. Comment:

Each permit application requires the application to be prepared by or under the supervision of a PA registered professional engineer. Should there be challenges within the professional engineer process, there currently exists a process to address those issues. PCA believes additional DEP review if redundant and unnecessary and negates the need for an annual fee. (948)

Response:

Permit applications and plans should be reviewed by qualified Department staff to ensure completeness and compliance with all regulatory requirements.

<u>§ 287.1</u>

51. Comment:

The proposed modification of the definition of "coal ash" is in direct conflict with the statutory definition contained in Section 103 of the SWMA. (4)

The proposed regulations change the definition of "coal ash." The existing definition should be consistent and used in this rulemaking. (948)

Response:

For purposes of Chapter 290, these regulations adopt the definition of coal ash enacted by the General Assembly as part of a comprehensive set of amendments to SWMA involving the beneficial use of coal ash.

52. Comment:

The definition of "coal ash" should be broadened to include ash from combustion of coal [illegible]omass or other alternative fuels, as well as materials added to coal to reduce pollution during the combustion process, such as limestone. (929, 935, 945, 972, 1093, 1095)

Allow ash produced by burning an alternative fuel with coal or coal refuse to be beneficially used as coal ash under the Chapter. (928, 929, 961)

Limit the alternative fuel to less than 20 percent of the heat input of the boiler. (928)

What consideration has been given to co-firing wood and coal? (935)

Provided that the ash generated from coal or waste coal serving as the predominant [illegible] ash meeting the certification limits should be authorized for beneficial use without a permit. (1093, 1095)

Response:

The final-form regulations allow ash from co-firing to be used as coal ash, provided the alternative fuel makes up no more than 20 percent by weight of the total fuel and contributes no more than ten percent by weight to the quantity of ash and the quality of the resulting ash meets the certification requirements.

53. Comment:

DEP has proposed amending the definition of "structural fill" by replacing "coal ash" with "material." We believe this reference equates coal ash with solid waste and does not include use of coal ash to fill open pits from mining. We believe the current definition should be restored. (1093, 1095)

Response:

The definition of "structural fill" has been restored in the final-form regulations.

54. Comment:

The term "water table" should not include isolated saturated zones that do not interact with the regional groundwater table. (1093, 1095)

Response:

The Department determined that coal ash should be kept out of all saturated zones with the following limited exceptions that include mine subsidence control, mine fire control and mine sealing.

§ 290.1

55. Comment:

The new guidelines do not recognize CFB ash as a unique material. A differentiation must be made between CFB ash and crushed coal ash. (935, 966)

The ash from CFB stations is quite different from the ash from a pulverized coal plant. (1112)

Response:

"Coal ash," as defined in the SWMA, includes CFB ash. Generally, the quality of the coal ash from CFB generating stations presents more options for beneficial use than coal ash from pulverized coal generating stations under these regulations. The ash quality standards apply to any coal ash being beneficially used.

56. Comment:

We suggest including language that coal ash that has been stored or impounded and meets the applicable ash qualification or certification requirements is authorized for beneficial use without a permit. (962)

Response:

Coal ash stored for more than one year is considered disposed under the SWMA and is no longer eligible for certification.

Subchapter B - General

57. Comment:

Sections 290.102(d)(8), 290.104(f)(9), 290.104(g)(4), 290.104(h)(2) and 290.105(e)(8) should prohibit off-site dispersion of dust from coal ash and enunciate the means for complying with this prohibition. The word "minimized" is vague and by definition could allow for significant amounts of fugitive dust to cross the property line from the fill area. (971)

Response:

'Minimized' is an appropriate term. A dust control plan is also part of the mining permit that encompasses the site. A plan can address dust control under most conditions, but can not account for all conditions. No plan can control 100% of dust particles but can control enough to prevent a nuisance or hazard. The site inspector can require the permittee to take appropriate additional actions if dust in noticeable amounts is leaving the site.

58. Comment:

Sections 290.102(e)(2), (e)(3) and 290.105(e)(9)(ii) prohibit placement of ash within 300 feet of a water supply unless a written waiver from the owner of the water supply is obtained. This requirement appears arbitrary; if the coal ash presents such a threat to the environment, this regulation should follow the DEP guidance "Recommended Wellhead Protection Area Zone I Delineation Methodology." This portion of the regulation provides the individual water supply owner very little protection by allowing placement closer than 300 feet with submission of a mere waiver. Does the water supply owner have an understanding of the science of ash placement? Who has responsibility to inform the owner of possible consequences of the waiver? What if the ash placement is downgradient of the water supply? (959, 1120)

Response:

The 300-foot restriction falls within the definition of the wellhead protection area "Zone I" found in § 109.1, which specifies 100-to-400-foot radius depending on site-specific source and aquifer characteristics. The 300-foot restriction downgradient from coal ash placement is appropriate. Informed consent is a required element of any waiver. At surface mine sites, water supply protection is an important part of the permitting process. Water supplies impacted by mining (including mines beneficially using ash) are provided protection under SMCRA and the coal mining regulations in 25 PA Code Chapters 86, 87, 88, 89 and 90. If the person requesting a waiver has questions they are encouraged to contact the Department.

59. Comment:

The consent requirement in § 290.102(e)(2), 290.103(e)(3) and 290.105(e)(9)(ii) is inconsistent with the SWMA, HSCA and the Land Recycling and Environmental Remediation Standards Act because beneficially used coal ash is not a waste. (1120)

Response:

It is sound public policy to require landowner consent for the beneficial use of coal ash.

60. Comment:

The phrase "in a form acceptable to the Department," found in §§ 290.102(e)(2), 290.103(e)(3) and 290.105(e)(9)(ii) is vague. How will members of the regulated community know what is appropriate? (1120)

Response:

There is a variety of documents that can be used to demonstrate that a waiver has been granted, such as a deed, letter or contract. An approach of not specifying a particular document that needs to be used provides flexibility to the regulated community and property owners. If the person requesting a waiver has questions they are encouraged to contact the Department.

§ 290.101

61. Comment:

There are a variety of beneficial use applications listed in § 290.106(b) in which a water quality monitoring plan is required if certain quantities of coal ash are exceeded. Water quality monitoring should be limited to those applications in which the coal ash is placed in direct contact with the ground. The commentators suggest waiving this requirement in § 290.101(d) for uses under § 290.106(b)(1), (3), (5) and (7). (1093, 1095)

Response:

Generally, the Department agrees. The final-form regulations include language allowing a waiver based on uses under § 290.106(a)(3) and (7). The waiver would not be automatic since there may be instances where water quality monitoring or a modified form of water quality monitoring is appropriate for these uses. Water quality monitoring is only required when coal ash is used as a structural fill, at a coal mining activity site or at an abandoned mine land site.

62. Comment:

Section 290.101(b) provides that sampling, analysis and chemical limit requirements for coal ash certification should apply for ash uses in § 290.106(b). This requirement does not take into account the relative risks associated with different coal ash utilizations. While some flexibility is provided for certain uses (§ 290.106(b)(1)-(3) uses may have waived or modified requirements), it is not clear how waived or modified requirements would be provided, whether on a use basis, job basis, source basis or other. It is

suggested that specific certification requirements also be developed (or waived, as appropriate) for all uses in § 290.106(b) to eliminate uncertainties. (972)

Response:

In determining which of the other uses in § 290.106(a) that could have these requirements waived or modified, the Department carefully considered the end uses. Some involve chemical change that will reduce the leachability of coal ash before or during placement into the environment. Others result in no direct placement of reasonable volumes into the environment. For those uses, the sampling and analysis requirement would be waived most of the time, but not in every instance. There could be ash sources or proposed uses that fit under § 290.106(a), on which, at the very least, the Department would require chemical data on the coal ash. The uses in § 290.106(a)(3) and (7) involve direct placement into the environment in possibly significant quantities, therefore sampling, analysis and chemical limit requirements for coal ash certification are appropriate.

63. Comment:

Comprehensive chemical analysis should only be required in certain circumstances (i.e., placed in direct contact with the ground). The use of ash in products (i.e., cement) should not be subject to comprehensive chemical analysis. (962)

Response:

The final-form regulations do not require comprehensive chemical analysis when the coal ash is used in the manufacture of concrete or cement or when coal ash is used as fuel.

64. Comment:

The use or incorporation of ash into a product – such as cement, concrete, and flowable fill/grouts should not be subject to the comprehensive chemical analyses in § 290.201. However, ash used in such applications must still be done in a manner consistent with the restrictions noted in the regulations for such beneficial uses. (1093, 1095)

Response:

In determining which of the other uses in § 290.106(a) that could have these requirements waived or modified, the Department carefully considered the end uses. Some involve chemical change that will reduce the leachability of coal ash before or during placement into the environment. Others result in no direct placement of reasonable volumes into the environment. For those uses, the sampling and analysis requirement would be waived most of the time, but not in every instance. There could be ash sources or proposed uses that fit under § 290.106(a), on which, at the very least, the Department would require chemical data on the coal ash. The uses in § 290.106(a)(3) and (7) involve direct placement into the environment in possibly significant quantities, therefore sampling, analysis and chemical limit requirements for coal ash certification are appropriate.

If there is a justification for why the chemical analysis would not be necessary, such as stabilization and decreased leachability of the manufactured product, this requirement may be waived.

65. Comment:

The requirement for a water quality monitoring plan and its long-term implementation is not economically feasible for non-profit groups who want to clean up abandoned refuse piles. This requirement will hinder our authority's ability to join with reclamation contractors, as we have already done very successfully. A pile we have already cleaned up would have required an additional $100,000 for this effort and ten years of monitoring afterwards. Whose liability is it if the post project data is worse for some parameter? Our authority will not do another project of this type if we are burdened with the responsibility to correct past problems. The beneficial use of ash to remediate existing refuse pile sites should have different requirements that do not hinder or stop the potential for cleanup of these environmentally devastating sites. (935)

Response:

The intent of the regulatory requirements is to provide the necessary environmental protections to assure that projects as described in the comment can continue. These protections are needed to assure that there is no adverse environmental impact from the beneficial use of coal ash. For most projects the increased costs are small relative to the total project cost. The regulations have provisions that can result in exemption from water quality monitoring. With respect to potential liability, the Pennsylvania Environmental Good Samaritan Act contains protections from liability for qualified persons engaging in reclamation of abandoned mine lands.

66. Comment:

Adding the water quality monitoring requirements to a project after the fact would unduly burden environmental organizations working to improve streams and rivers, as well as their partner contractors/operators, who should be aware of such issues in the beginning. (935)

Response:

Transition provisions for water quality monitoring are included in the final-form of the regulations to allow existing projects to come into compliance.

67. Comment:

The water quality monitoring plan should not be based on the amount of coal ash that is proposed to be beneficially used at a site. Either some form of monitoring should be

required at all sites (consistent with the mining activity regulations), or monitoring requirements should be imposed on a site-specific basis. (945)

Monitoring should be required at all mine placements, structural fills, or soil amendments involving more than 10,000 tons of ash (930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 970)

Response:

In many cases, the potential for the ash to impact water quality is so low, and requiring monitoring is unnecessarily burdensome. Basing the requirement for water quality monitoring on the amount of coal ash to be beneficially used at a site is a reasonable risk based approach to monitoring. Chapter 290.101(d) allows for monitoring of sites with less than 10,000 tons on a site-by-site basis if deemed necessary.

68. Comment:

The proposed regulations exempt many coal ash placement sites from water quality monitoring requirements. We believe water quality monitoring must be required at all sites where over 1,000 tons of coal ash is placed as minefill or structural fill. In particular, we see no rational basis for exempting ash placement operations at abandoned mines from groundwater monitoring requirements when a similar volume of ash would trigger groundwater monitoring requirements at an active mine site. (969)

The 100,000-ton threshold for monitoring is much too high. The cutoff should be at least as low as 10,000 tons; an even lower threshold may be needed. (971)

Response:

In many cases, the potential for the ash to impact water quality is so low, and requiring monitoring is unnecessarily burdensome. Basing the requirement for water quality monitoring on the amount of coal ash to be beneficially used at a site is a reasonable risk based approach to monitoring. Chapter 290.101(d) allows for monitoring of sites with less than 10,000 tons on a site-by-site basis if deemed necessary.

69. Comment:

We believe the tonnage limitations are far too constricting and will result in a disincentive for reclaiming the hundreds of small abandoned mines that pot mark the anthracite coal region. (965, 1115)

Response:

The Department believes that water quality monitoring requirements are appropriate and will establish a robust set of water data that can support the beneficial use of coal ash.

70. Comment:

Section 290.101(d) should be qualified with specific tonnages for use. (972)

Response:

Section 290.101(d) contains the threshold quantities of 10,000 per ton per acre and 100,000 tons per project

71. Comment:

The regulations in § 290.101(d) do not address non-contiguous projects within the same aquifer or drainage area. Water quality monitoring should be required if a substantial volume of coal ash has the potential to leach into a contiguous aquifer or surface water body regardless of whether or not the coal ash fills are contiguous. (1121)

Response:

Regardless of the size of the project, the certification process is designed to ensure coal ash, when beneficially used, will not leach materials in an amount that may be harmful to the public health or environment. The final-form regulations allow the Department to require water quality monitoring for sites where the quantity of coal ash is below the threshold quantity.

72. Comment:

At no time should coal ash be placed within the water table in an active or abandoned coal mine – absolutely no exceptions. (930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 970)

The proposed regulations contain no requirement that will effectively assure ash cannot contact local groundwater. (950)

Section 290.101(e) allows the 8-foot separation requirement to be waived based upon an undefined "demonstration." There are no criteria or standards setting forth the evidence that must be provided to make such a demonstration. Nor is it clear that such criteria could reasonably be set. This language would allow ash to be placed directly into the water table of an aquifer that supplies drinking water so long as PADEP was willing to accept an assertion that no harm would ensue. The isolation requirements should always be met. We urge that all wording after "water table" in Section 290.101(e) be eliminated and the comma replaced with a period. (971, 1121)

It is crucial that coal ash be isolated from underground water. (968)

The loophole allowing DEP to waive or modify how closely coal ash can be placed to groundwater is particularly disturbing, considering that the majority of Pennsylvanians get their water from groundwater sources, such as private wells. (194)

Response:

The Department has amended the final-form regulations so that coal ash may be used within 8 feet of the water table or below the water table only for mine sealing, mine fire control and mine subsidence control.

73. Comment:

NRC scientists studied the placement of coal ash in mines and concluded by consensus that contact with water should be minimized. This recommendation should be adopted in Pennsylvania. The regulation should not allow coal ash to be placed closer than eight feet to the uppermost water table in a mine without the use of a cap, leachate collection and detection systems and a composite liner (using synthetic material and clay) to minimize leachate generation and prevent leachate from reaching groundwater. (971)

Coal ash should not be placed within eight feet of the uppermost water table in a mine without use of a cover, leachate collection and detection systems and a composite liner (using synthetic material and clay) to minimize leachate generation and prevent leachate from reaching groundwater. At no time should coal ash be placed within the water table in an active or abandoned coal mine. (956)

Response:

The Department has amended the final-form regulations so that coal ash may be used within 8 feet of the water table or below the water table only for mine sealing, mi control and mine subsidence control .

74. Comment:

The requirement in § 290.101(e) that coal ash not be placed within eight feet of the water table appears to be arbitrary. The use of coal ash as drainage material as per § 290.106(b)(6) implies that when placed in this manner it will experience exposure to groundwater. Our suggestion is to remove subsection (e) and replace it with subsection (f). (959)

Response:

The use of coal ash as drainage material has been removed from the final-form regulations.

75. Comment:

Section 290.101(f) is broad and vague and will result in compliance disputes. "Coal ash may not be used in a way that causes water pollution" needs to be more clearly defined. (959)

Response:

The term "pollution" is defined in § 287.1 and the Clean Streams Law. These definitions are sufficient.

§ 290.102

76. Comment:

There is no permit required for a structural fill, regardless of the size of the fill or the potential for harm that it poses to the surrounding community. This provision will allow structural fills of considerable size to be approved and carried out without any notice provided to the surrounding community. There is no opportunity for public comment on structural fills. The provisions in this rule should assure that DEP will reach out to the local community as a source for important relevant information. (971)

Response:

There is no authority under the SWMA to require permits for the beneficial use of coal ash as structural fill. These regulations provide for a public notice process at § 290.102(c).

77. Comment:

Section 290.102(a) should only be applicable to new projects or active projects that will extend beyond two years from the effective date of publication. (1095)

Response:

Projects that begin before the effective date of these regulations will not be subject to this requirement.

78. Comment:

The commentator supports the threshold amount of coal ash used as structural fill for requiring deed notifications. (945)

Response:

The commentator's support has been noted.

79. Comment:

Any use of coal ash as structural fill, regardless of volume, must be recorded on the placement site deed. (969, 971)

Response:

Provisions for deed notices are found in § 290.102(a)(7).

80. Comment:

Has the Board considered adding a requirement in § 290.102 similar to that found in § 290.103(c) that requires DEP to inform the person providing the notice whether the proposed structural fill is consistent with this section? If a similar requirement is added, we ask that it specify how and when a response will be provided. (1120)

Response:

The Department has amended the final-form regulations as suggested.

81. Comment:

The pH range limitation does not seem appropriate, especially for CFB coal ash. The commentator suggests replacing "in the range of 7.0 to 9.0, unless otherwise approved by the Department" with "greater than 7.0." (945)

The pH requirements will restrict the use of CFB ash due to the upper level restrictions. (1115)

Lowering the pH range to 6.0 would increase leaching potential of several metal lowering the upper range to 9.0 would reduce leaching of metals. We recommend the range be 7.0 to 9.0. (1121)

Response:

The lower pH range has been changed to 7.0 in the final-form regulations. The upper limit was retained where public access to the site is not restricted during storage and placement of the coal ash. A pH level above 9.0 may be allowed when public access is restricted.

82. Comment:

When will DEP publish the § 290.102(b) summary in the *PA Bulletin* of each notice of structural fill use of coal ash, before or after the coal ash is actually used? (1120)

Response:

While § 290.102(b) does not specify when the summary has to be published, the Department will publish each summary upon receipt and prior to the commencement of ash utilization.

83. Comment:

How was it determined that the threshold quantities for public notification (10,000 tons per acre or 100,000 tons per project) in §§ 290.102(c) and 290.105(b)(6) adequately protect the public health? (1120)

Response:

The chemical standards in § 290.201 are adequate to protect the public health and are more important than the quantity limits. There are requirements throughout Chapter 290, including public notification, which apply to larger sites where coal ash will be beneficially used. The threshold quantities in the proposed regulations were developed by the Department on the basis of general project sizes and best professional judgment regarding small and large-scale projects.

84. Comment:

Can Internet addresses be used in addition to the public offices under § 290.102(c)(3)? (1120)

Response:

The purpose of § 290.102(c)(3) is to require the newspaper notice to contain the physical location where the request for use of coal ash as structural fill may be viewed. While an Internet address could be provided in the notice, it is not required.

85. Comment:

The biologically-active zone is usually 24 inches. § 290.102(d)(6) requires the coal ash to be covered by 12 inches of soil. This would result in direct exposure of plant roots, soil organisms and burrowing animals to contaminants in the coal ash. To prevent toxic effects in plants and animals that migrate into the restored areas, a minimum of 24 inches of clean soil should be placed over the coal ash fill. (1121)

Response:

Section 290.102 refers to use of coal ash as structural fill. Structural fill is the engineered use of coal ash as a base or foundation for a construction activity such as a building. DEP has observed successful plant growth directly on mine reclamation sites and does not anticipate problems in establishing plant growth on structural fill areas around buildings, parking areas, etc., that typically are "green" areas.

86. Comment:

Section 290.102(d)(7) includes compaction specifications for coal ash structural fill. Overly compacting materials on surface mines has prevented re-growth of the native hardwood forest. Improved rooting conditions would benefit native grass plantings. We recommend DEP consult with surface mine restoration experts to develop protective compaction specifications that will still enable tree root growth. (1120)

Response:

Section 290.102 refers to use of coal ash as structural fill. Structural fill is the engineered use of coal ash as a base or foundation for a construction activity, such as a building. The compaction standards are necessary to ensure structural stability for construction purposes. Lands where coal ash is placed as structural fill will not be used to re-establish hardwood forests or native grasses.

87. Comment:

The addition of organic materials (i.e., compost and biosolids) would reduce both leaching potential and bioavailability of contaminants in the coal ash. We recommend that DEP require the addition of organic material to raise the percent organic material in the ash used as structural fill to five percent. (1121)

Response:

The Department has accepted that the chemical standards required under § 290.201(a) are protective without added organic matter. The addition of organic matter could adversely impact the physical characteristics needed for support of structures to be constructed at the site.

<u>§ 290.103</u>

88. Comment:

Section 290.103(a) is already addressed under § 290.101(a). What is the need to duplicate that language in this subsection? (1120)

Response:

The Department agrees that the language is unnecessary and has deleted it from § 290.103(a) in the final-form regulations.

89. Comment:

This section requires no permit, no public notice and comment nor any monitoring of projects involving coal ash as a soil substitute or soil additive regardless of their size.

There is no description of the chemical and leaching analyses that must be done on coal ash to be used for this application and no requirement for a leaching analysis on the mixture(s) of soil and ash that will occur at application sites. There are no limits on the steepness of slopes on which coal ash can be applied as a soil substitute or additive. (971)

Response:

Public notice is based upon the volume of coal ash that will be placed at the site as a soil additive or soil substitute. The metal loading rates are such that the public notice requirements for placement of coal ash in an amount equal to or more than 10,000 tons per acre or 100,000 tons in total per project would not be triggered.

90. Comment:

Why is the standard procedure in calculating loading specified to utilize the total loading and not the leachable metals loading? (3)

Response:

Loading rates are based on total metals due to plant uptake from direct contact. Leachable metal standards are designed to protect groundwater. Loading rates serve to limit the volume of ash that can be used to produce soil at a site.

91. Comment:

Monitoring of surface water drainages and plant uptake of metals should be required for projects using coal ash as soil amendments or soil additives. (930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 970)

Response:

The isolation distances in § 290.103(d) are designed to protect surface water. The scientifically based loading rates prevent the uptake of metals to levels that would be harmful.

92. Comment:

The pH range of 6.5 to 8.0 seems appropriate, since it applies to a mixture of soil and coal ash. (945)

Response:

The commentator's support is noted.

93. Comment:

The requirement that coal ash not be applied to soil used for agriculture where the soil pH is less than 5.5 seems inappropriate, since the ash will be used to neutralize the soil pH. § 290.103(d)(7) should be deleted. (945)

Response:

Many heavy metals are more soluble in low pH conditions which can lead to metal uptake by plants. There is potential for the plants to be consumed by animals or people, leading to increased metal exposure. While alkaline coal ash may raise the soil pH, once the alkalinity of the ash is neutralized by the acidic soil, the soil pH can once again decrease. For these reasons, the Department has retained the language in the final-form regulations.

94. Comment:

The requirement that coal ash may not be applied if resultant chemicals or physical conditions would be detrimental to biota is overly burdensome to industry and the costs of proof would far outweigh the potential benefits. The loading rates already address the potential impact to the environment. § 290.103(d)(6) should be deleted. (945)

Response:

While the loading rates are designed to protect biota, there could be other chemicals applied to the soil that, in combination with coal ash, could be detrimental. It should also be noted that this is not a new requirement, but was required in § 287.662(d)(12).

95. Comment:

Section 290.103 should include loading rates for all parameters sampled during the coal ash certification process. (969)

There are no cumulative contaminant loading rates in § 290.103(f) established for trace metals known to be present in eastern coal ashes such as antimony, thallium, beryllium, cobalt, or vanadium. (971)

Response:

Loading rates are only calculated for plant uptake of metals. Because coal ash contains known high values of metals (listed in the cumulative rates), these would be exceeded far sooner than values for trace metals that are typically non-detectable in ash.

96. Comment:

The method DEP will use to inform the person proposing to use coal ash that the use is consistent with this section should be specified in § 290.103(c). (1120)

Response:

The Department will notify the person in writing.

97. Comment:

Section 290.103(c)(5) states, "Coal ash shall be applied at a rate per acre that will protect public health, public safety and the environment." This requirement is vague. What criteria will be used to make this determination? (1120)

Response:

Section 290.103(d)(5) is intended to provide flexibility. Section 290.103(b)(5) has been taken from existing § 287.662(d)(10) and has not been problematic for the Department or the regulated community.

98. Comment:

Is there any need to report any information pertaining to this section to DEP, as is done in other sections? (1120)

Response:

The final-form regulations include a requirement for the operator to keep records and make them available to the Department upon request. The final-form regulations also include a requirement for the operator to notify the Department within 72 hours of any evidence that the coal ash does not meet the chemical standards in §290.201(a).

99. Comment:

For very poor, thin soils, the amended soils could consist of primarily coal ash rather than soil with a coal ash amendment. Biota could be at risk from direct exposure to contaminants in the soil and coal ash mixture. If insufficient soil is present to achieve the one-foot depth or suitable conditions for plant growth, then organic materials (i.e., compost and biosolids) need to be added in addition to the coal ash. (1121)

Response:

The Department routinely allows coal ash and organic material to be used together for a soil substitute or additive. In these cases, a manufactured soil from coal ash is beneficial, because it can serve as a substrate for vegetation that may not otherwise exist. Please note that coal ash alone is not a recommended replacement for soil, and is not considered a beneficial use.

100. Comment:

Although analysis of receiving soils is required in § 290.103(b)(5), it is unclear if the maximum loading rates must account for pre-amendment contamination. (1121)

Response:

If the soils are within normal ranges for PA soils, their contribution to the maximum loading rates will not be a concern.

Prior to beginning applying coal ash, the operator evaluates the site (as part of a mining permit or NPDES permit) to make sure that the location has not been subject to a spill or release or other waste deposition, or is known to have natural characteristics that could, when mixed with coal ash, have the potential to affect human health and the environment.

101. Comment:

The cumulative loading rates in § 290.103(f) would result in concentrations of boron, [illegible]um, chromium, copper, lead, selenium and zinc in the one-foot soil interval that exceeds toxic thresholds for biota. The loading rates need to be revised to prevent soil concentration from exceeding ecological risk concentrations to protect terrestrial biota. We recommend using the Oak Ridge National Laboratory Preliminary Remediation Goals (www.esd.ornl.gov/programs/ecorisk/documents/tm162r2.pdf). (1121)

Response:

The cumulative loading rates for metals have been used in the sewage sludge land application program for many years. Those loading rates are based on the protection of human health, plants, livestock, non-domesticated animals, and soil organisms. The protection endpoints in Table 4 of the cited Oak Ridge National Laboratory document [illegible] the mentioned metals include plants, woodcocks, mice, and earthworms. According to that document, the confidence in the Preliminary Remediation Goals in Table 4 is "generally low."

102. Comment:

For active and abandoned mine reclamation activities, public notice is required in newspapers for projects using more than 10,000 tons per acre or 100,000 tons per any one project. For beneficial use as a soil amendment, public notice is not required, and the coal ash must be incorporated in the top layer of soil within 48 hours. It would seem that DEP considers anything greater than a one-foot-thick layer of ash (when used as a soil amendment) unlikely to protect human health, public safety and the environment, but for mine applications does not see the need for public notification or other requirements until the ash to be applied exceeds the equivalent of a layer of roughly five feet thick. (950)

This section does not require public notification requirements found in § 290.102. Would the public health be better protected if similar notification requirements were included in this section? (1120)

Response:

The quantity of coal ash that may be used as soil amendment or soil substitute is based on loading rates not thickness of ash layer and is limited by the loading rates in § 290.103(e). The regulations require incorporation into the top one foot of soil within 48 hours.

§ 290.104

103. Comment:

§ 290.104(b) requires a person proposing to use coal ash at a mining activity site to obtain a permit from DEP. How soon before coal ash is used must a person request permission from DEP? In what form must the request be made? How and when will DEP respond to the request? Can coal ash be used before DEP approval occurs? These issues should be addressed in the final-form regulations. Alternatively, if this permit process is guided by other DEP regulations, an appropriate cross-reference should be included in this subsection. (1120)

Response:

Coal ash beneficial use requests are appropriate under a new mine activity permit or permit revision. These actions are explained in Chapters 86-90 and approved mining permit guidance. The regulations contain references to compliance with Chapters 86-90 in § 290.104(a)(1), and also clearly state that a person must submit a request to beneficially use coal ash at a coal mining activity site "as part of the reclamation plan under the mining permit" in § 290.104(b). The regulations in Chapters 86-90 set forth detailed procedures for permit applications, including content requirements and timing of approvals.

104. Comment:

§ 290.104(b)(2) makes reference to a "certification number." This is the first time this term is used in Chapter 290. We are aware that § 290.201(d) identifies the meaning of this term. However, we believe the regulated community would benefit from a definition of this term. We note that this term also appears in Subsection (j) and the term "certification *identity* number" appears in §§ 290.105(b)(2) and (j) and 290.201(d). (1120)

Response:

"Certification number" has been changed in the final-form regulations to the term certification identifier. A cross reference to § 290.201(c) has also been included in § 290.104(b)(2) as a means of explaining the term and its usage.

105. Comment:

Section 290.104(b)(2). If a certification number has been issued to a supplier for the coal ash and the site operator is approved to receive it, the site operator must maintain records that the ash is obtained from a generator source that has been approved. This is an unnecessary repeat of steps already in place for the certification. (935)

Response:

This provision has been changed and used to track coal ash to those sites that receive coal ash from multiple sources and guards against the receipt of unapproved sources.

106. Comment:

Section 290.104(c). The annual $2000 permit filing fee is extremely burdensome to industry and does not seem reasonable funding because most of the work is performed at permit filing. It should be reduced to a one-time fee at the time of filing. (945, 948)

The annual $2000 permit filing fee will add $20,750 to any project. (959, 1115)

Commentators who presumably will be paying this fee believe it is excessive and unnecessary. The Board should explain how the fee was derived and why it is needed. (1120)

Response:

The fee will only cover half of the projected costs for the Department to review applications for the beneficial use of ash and to monitor the use. The primary components of the cost for the Department are staff time and sampling. Since monitoring is necessary on an ongoing basis, the most equitable way to cover these costs is through a periodic fee, rather than assessing the entire fee up front.

107. Comment:

Section 290.104(c)(1) requires all coal ash beneficial use sites to be permitted, active and pay an annual fee of $2000. The regulation does not allow for a permitted and inactive site. Further, the regulation calls for strict monitoring of all active ash disposal sites whether they are actively receiving ash or not. This has resulted in the expiration of numerous ash disposal permits. The PA Anthracite Council recommends establishment of a second category of permitted ash disposal sites that are approved, but are not actively utilizing ash for beneficial use. Operators would still go through the normal public comment and permitting process. However, they would be required to give a one year

notice and exempt from the background monitoring requirements while the site is inactive. Operators would be required to pay the $2000 fee and begin doing the one year of background monitoring before ash could begin being placed on the site. To offset tracking costs, DEP can levee a $250 annual inactive permit fee. (965, 1115)

Response:

Previous attempts to track the various beneficial use status of sites proved to be cumbersome for the Department. It was not clear to the public or other Department staff when a site would or would not accept ash if the status was ambiguous. To allow a provisional status as suggested would result in outdated monitoring data and plans and perpetuate uncertainty for the future of the site. Allowing beneficial use of coal ash at mine sites has an objective of encouraging active reclamation. The suggestion by the commentator discourages meeting of this objective.

108. Comment:

Section 290.104(f)(1) This paragraph indicates that "The total cubic yards of coal ash placed on the sites is less than the total cubic yards of refuse, culm, or silt removed from the sites". This statement should be revised to indicate: "The total cubic yards of coal ash placed on the sites is equal to or less than the total cubic yards of refuse, culm, or silt removed from the sites". (1)

Response:

Section 290.104(f)(1) of the final-form regulations allows a larger volume to be placed if approved by DEP, as proposed. Therefore, the suggested change is not needed.

109. Comment:

What is meant by the terms "coal surface mining" and "coal refuse reprocessing sites" in § 290.104(f) and "coal refuse disposal sites" in § 290.104(h). (1120)

Response:

These terms are defined under Chapters 86-90 and operators conducting such activities are regulated under these chapters.

110. Comment:

Under current § 287.663(d)(5), there are provisions for DEP to allow placement of more coal ash at an individual coal refuse pile of multiple coal refuse pile reclamation projects than the coal refuse removed if the specified requirements are met. This afforded DEP with an opportunity to greatly influence the amount of remediation and stream quality improvement that may be obtained by permitting the removal of coal refuse and

placement of coal ash at a rate that is consistent with the circumstances of individual site areas. (935)

The requirement in § 290.104(f)(1) that the volume of coal ash placed at the site may not exceed the volume of coal, coal refuse, culm or silt removed from the site by an active mining operation unless approved by DEP is inappropriate and contradictory to § 290.104(e)(2), which allows backfilling of historical pits within the surface coal mining permit. At the end of § 290.104(f)(1), "or used in the reclamation of historical pits from coal mining activities" should be added. (945)

Section 290.104(f)(1) limits the amount of coal ash that may be brought to the site to the volume of materials removed unless DEP approves a different volume. This will create a disincentive for mine operators to enter an abandoned mine area for re-mining purposes. We recommend that § 290.104(f)(1) be changed to account for coal volumes that have been mined decades ago and allow for increased volumes of coal ash at those sites based on estimates of the historic extraction of coal from the site and a lack of viable overburden that can be used in backfilling. (965)

Throughout the bituminous and anthracite coal fields there are many small abandoned refuse piles (< 100,000 tons of refuse) that will not be economic to remove as a result of these regulations unless there is the ability to manage the ash at larger sites. The costs of monitoring, permitting, bonding and developing a small mine site are substantial relative to the amount of waste coal extracted and utilized. The additional costs of monitoring imposed by these proposed regulations will, in many cases, make the beneficial use of coal ash at these already marginally economic small coal refuse sites cost prohibitive. If the ash from these small sites cannot be placed at larger sites, then it is highly unlikely that the smaller abandoned piles will be reclaimed. § 290.104(f)(1) should be modified to allow a greater volume of coal ash to be placed than the amount of coal, coal refuse, culm or silt removed when a greater volume is needed to insure the reclamation plan is achieved, the abatement plan per Subchapter F of Chapter 87 or Subchapter G of Chapter 88 requires additional ash placement at the site or if it is part of an integrated multi-site refuse reprocessing operation, which should result in an overall benefit to watershed quality. (966)

How will DEP administer this provision? Will this provision allow volumes previously removed to be counted towards the volume limitations? (1120)

Response:

Section 290.104(f)(1) allows the Department to approve a larger volume where the mine operator demonstrates that reclamation will be enhanced or water quality will be improved by the additional coal ash. Considerable changes to § 290.104(f) have been made in the final-form regulations to allow for increased amounts at a particular pile where small piles are reclaimed and the ash from that waste coal will be used at the larger pile.

111. Comment:

Section 290.104(f)(1) specifies that the volume of coal ash is measured on a cubic yards basis. What guidelines will be used for determining a different basis? Coal mining and sales are accounted on a tonnage basis. Should the volume of coal removed be measured as it is present in the rock strata or after it has been mined and swells? In addition, coal refuse, culm or silt removed can be measured either on a volume or by weight basis. § 290.104(f)(1) should be modified to allow measurements to be determined either on a weight or volume basis. (959)

Has DEP considered allowing either a volume or a tonnage measurement? (1120)

Response:

The volume (cubic yards) of coal, coal refuse, culm or silt must be included in the mining application (calculated by an engineer). This volume is used to determine how much coal ash can be returned to the site. This calculation is done prior to approval of the mining permit/ash beneficial use, not a running total. Therefore, no modification has been made to this section.

112. Comment:

The 24 hour limit in § 290 104(f)(3) is too restrictive and does not allow for operational considerations (e.g., weather) or for weekends/holidays. (962, 1095)

Response:

It is not unreasonable for an operator to maintain the site by spreading the coal ash promptly. This avoids potential problems of airborne ash which is a nuisance and is, generally, avoidable. If ash is being delivered to the site, personnel should be available at the same time to place it properly.

113. Comment:

Section 290.104(f)(4). This paragraph indicates that "Ash from each source must be tested individually." Unless the ash from each source is segregated (that is normally not common practice), how can this be done? (1)

It is agreed that periodically evaluating compaction may provide useful feedback for certain sites where coal ash is being beneficially used. However, the requirement that ash from each source be tested individually is problematic for a reclamation site receiving ash from multiple generators, especially if those sources vary throughout the calendar year. Compaction testing should be conducted on a semiannual basis, but at a time and in locations at the site where ash is being placed that will yield data that is representative of the compaction being achieved at the site. (1095)

What is the need for testing each source of coal ash separately for the compaction standards in § 290.104(f)(4)? (1120)

Response:

The final-form regulations remove the requirement of separate testing for each coal ash source.

114. Comment:

It appears § 290.104(f)(5) prohibits placement of coal ash where refuse material is deposited in large surface piles. This could eliminate the waste coal power industry from removing this refuse, utilizing it in CFB plants, and returning the ash to restore the properties under controlled, engineered designs as a clear beneficial use. We do not believe that is DEP's intent and recommend rewriting § 290.104(f)(5) so at coal reprocessing sites where refuse is found in large piles, piles be designed and constructed with coal ash in accordance with an engineered design and in a manner that blends in the general surface configuration and compliments the surface draining patterns of the surrounding landscape. (966)

What is the basis of this prohibition? (1120)

Response:

Language in § 290.104(f)(5) has been rewritten to clarify ambiguous language that formerly existed in § 290.104(f)(5) and (6). Reclaiming piles of ash is allowed under limited circumstances where the projects are integrated and there will be overall environmental improvement.

115. Comment:

It is critical that the existing large refuse piles continue to be allowed to be rebuilt under § 290.104(f)(6). (1106)

Response:

The language in § 290.104(f) has been revised. Provisions in the final-form regulations have been made to allow greater amounts be brought to a pile where multiple sites are an integrated project and meet reclamation and environmental requirements.

116. Comment:

Given that the SMCRA requires that damage be contained within the mining activity site, and the leaching from the coal ash has been found to be outside the permitted boundaries, this represents a fundamental violation of SMCRA. Therefore, full site characterization and hydrogeological characterization before ash placement must be required. (953)

Response:

The Department disagrees with the commentator's assertions regarding alleged leaching from coal ash outside the permitted boundaries and that leaching from coal ash has caused violations of SMCRA. With respect to site and hydrogeological characterization for those sites under SMCRA, the mining permitting process includes characterization of the geology and hydrology of the site. For sites under SMCRA, the mining permit application process addresses the characterization of the geology and hydrology of the site. Site characterization and hydrogeological characterization during the mine permit application review process is required before ash placement. Chapter 290 places additional requirements on mine site assessment.

117. Comment:

"Overall improvement" in § 290.104(f)(6)(iv) must be further defined to avoid arbitrary decisions that result in the long-term contamination of water supplies by ash placement. The language should make clear that all projects involving ash placement, including coal refuse reprocessing sites where acid mine drainage is evident, shall be designed to prevent degradation of the surface or groundwater quality. (971)

In § 290.104(e), phrases like "overall improvement" and "prevent the degradation" are vague. In addition, the phrase "overall improvement" could be interpreted to only require a degree of improvement. For example, if the polluting acid drainage from waste coal is the baseline standard, either of these provisions could allow further pollution, even though they may meet the regulation's requirement to be an overall improvement and prevent degradation. The Board should explain how it intends these requirements to be implemented and consider amending them. (1120)

Response:

"Overall improvement" in water quality at mine sites has been interpreted to be a decrease in concentration of contaminants or a decrease in pollution load. In addition to the provisions contained in this chapter, water supplies impacted by mining activities are specifically protected under the mining acts and regulations. See Chapters 87, 88, 89 and 90 at §§ 87.47 and 87.119, 88.27, 88.107, 88.307, and 88.381, 89.145a, 89.146a, 89.152, and 89.153, 90.15. Ash is routinely placed in areas that are drastically disturbed by previous mining impacts. The groundwater in these instances has been previously impacted by mining undertaken prior to 1977 (when laws governing surface mining were enacted) to the point where it is not potable. Very rarely do domestic or public water supplies exist in the same local aquifer as the ash placement area.

118. Comment:

Without monitoring requirements in § 290.104(g), the means for ensuring compliance with the requirements in this section concerning ash application and metals loading rates

are questionable, and the avoidance of plant uptake of metals or surface water pollution is not ensured. (971)

Response:

The loading rates have been set at levels to prevent plant uptake of metals from being a problem to public health or the environment. The use of the coal ash as a soil substitute or additive on a mine site is subject to review of the entire mining permit area to judge suitability of this use.

Loading rates serve to limit the volume of ash that can be used to produce a soil additive or soil substitute.

119. Comment:

The language in § 290.104(h) should make clear that projects involving ash placement at coal refuse disposal sites shall be designed to prevent degradation of the surface or groundwater quality. (971)

Response:

Modern coal refuse disposal sites are lined. This is designed to prevent degradation of the surface and/or groundwater quality from the coal waste

120. Comment:

The costs associated with the regulations and the volume limitations of this subsection will not make it economical to reclaim existing small coal refuse piles. We ask the Board to explain how these regulations will not have a negative impact on the reclamation activities taking place throughout PA. (1120)

Response:

To date, 145 million tons of waste coal has been used to fuel power plants. Annually ten percent of Pennsylvania's power is produced from power plants burning waste coal. The ash that is generated from the waste coal has been used to reclaim thousands of acres of abandoned mines and is expected to continue. More than 11 million tons of coal ash has been beneficially used for mine reclamation each of the past several years. The estimated cost of disposing this material at a landfill would be at least $275 million per year. Costs of placement at mine sites are approximately $55 million per year. Use of coal ash at mine sites as opposed to land filling the material is a savings to the industry of at least $220 million per year.

121. Comment:

The referencing of § 290.201(c)(5) in § 290.104(h)(2)(i) may not be appropriate as that section requires a number of samples and sampling periods that do not appear adaptable to a quarterly interval at all mine site locations. (972)

Response:

The reference has been changed to § 290.201(b)(6)(i) and (ii) in the final regulation.

122. Comment:

For both economic and environmental reasons, the placement of reprocessed refuse rejects from various sources should be allowed to be incorporated into these reclamation projects, as long as the blending of the outside fuel allows for the removal and processing of marginal refuse that otherwise would have been left behind and the other criteria in § 290.104(f)(6) are met. (1106)

Response:

This regulation does not pertain to "the placement of reprocessed refuse rejects," only coal ash that may result from the recovery of coal ash from refuse sites.

123. Comment:

Section 290.104(f)(4) includes compaction specifications for coal ash at coal surface mining and coal refuse reprocessing sites. Overly compacting materials on surface mines has prevented re-growth of the native hardwood forest. Improved rooting conditions would benefit native grass plantings. We recommend DEP consult with surface mine restoration experts to develop protective compaction specifications that will still enable tree root growth. (1121)

Response:

Compaction is needed to provide stability and reduce infiltration of precipitation. Compacted ash is not the rooting medium. The rooting zone will be established at the surface.

124. Comment:

Under the proposed regulations, coal ash is not suitable as a stand alone for supplemental alkaline addition to meet calculated alkaline addition requirements of surface mines. Coal ash with a high calcium carbonate content should be considered a supplement for alkaline addition to surface mines based purely on the 35 to 40 percent of calcium carbonate that is in the ash. (1105)

Response:

The only place in the regulations that alkaline addition is mentioned is in 290.201(a)(2) and (3). The value given is 100 parts per thousand, or 10% by weight. The reference to "not suitable as a stand alone" appears to be from a Department technical guidance document, not the proposed regulations.

125. Comment:

Section 290.104(i). This paragraph indicates that "A person using coal ash at a coal mining activity site shall, each quarter that coal ash is being used at the site, sample the ash after it has been placed at the site and such sample shall.....(etc). Based on the fact that ash sampling will be conducted at the plant for chemical and leachate analysis, and if the permittee can demonstrate that no chemical or physical changes will result due to the power plant being in close proximity to the permit site, the wording can be revised to read as follows: "At the discretion of the PA DEP, a person using coal ash at a coal mining activity site shall, each quarter that coal ash is being used at the site, sample the ash after it has been placed at the site and such sample shall...(etc). (1)

equirement in § 290.104(i) that the person using coal ash at a coal mining activity site conduct quarterly sampling and analysis is totally unjustified and differs from the current coal ash policy document. If only certified coal ash is being used at the site, there should be no reason for the person using coal ash to be required to also conduct quarterly sampling. § 290.104(i) should be deleted. (945, 972)

We suggest that additional monitoring should not be required in § 290.104(h)(2)(i) if the person can demonstrate that there is no significant difference in the quality of the ash placed at the site and the quality submitted by certification under § 290.201. (962)

The requirement is duplicative of the requirement for generators to complete quarterly chemical analyses of ash to be used for mine reclamation. We suggest removing this requirement. (1095)

Since generators are required to perform chemical analysis of the ash, what is the need for this provision? If the source of the ash and the ash placement are the same site and the only ash being placed comes from that generator, what is the need for additional testing? (1120)

Response:

This requirement serves as a check to ensure the coal ash delivered for beneficial use from a generator is the same quality of material as that which was certified at the source and that nothing has changed or been added during transportation. Section 290.104(i) in the final-form regulations allows a lesser frequency to be approved where the mine receives ash from only one source.

<u>§ 290.105</u>

126. Comment:

This section replaces § 287.664 titled "Coal ash beneficial use at abandoned coal and abandoned non-coal surface mine sites." Is DEP eliminating use of coal ash at non-coal mining sites, such as quarries? If so, what is the reason for this change in policy? (1120)

Response:

Placement at noncoal sites is no longer approvable under this program. Unlike abandoned coal mine sites, which typically have degraded and acidic groundwater, abandoned non-coal mines, especially quarries, usually have reasonably good quality groundwater associated with them. Most of the benefits for coal ash placement at abandoned coal mine sites, such as reduction in acid mine drainage and removal of coal refuse, are not applicable to non-coal sites.

127. Comment:

To be consistent with the three previous sections, the title of this section should be amended to "Beneficial use of coal ash at abandoned coal surface mine sites." (1120)

Response:

Changes have been made in the final-form regulations to assure consistency in section titles.

128. Comment:

What specifically is meant by the term "abandoned coal surface mine sites?" Can a cross-reference be added to a definition of this term? (1120)

Response:

This term has been changed to "abandoned mine lands." A provision has been added to § 290.105(a) to clarify the meaning of this term by reference to an existing definition in 25 Pa. Code § 86.252.

129. Comment:

Section 290.105(a) requires written approval from DEP before coal ash can be beneficially used at abandoned coal surface mine sites. How soon before coal ash is used must a person seek approval from DEP? In what manner must the request be made? How and when will DEP respond to the request? What criteria will DEP use to determine if coal ash can be placed at the site? The final-form regulation should provide more direction on how this process will work. (1120)

Response:

The Department recognizes § 290.105 was vague in several regards and has clarified that coal ash may be beneficially used at abandoned coal surface mine sites if the reclamation work is pursuant to a contract with the Department. This clarification recognizes the Department's ability, and its limitations, to enter into sole source contracts based on a submitted proposal or to competitively bid a contract initiated by the Department. Proposals must be submitted with sufficient lead time to allow for review and development of a contract; to meet the public notice requirements of this section; and, to meet the requirements of PA's procurement procedures.

130. Comment:

Subsection (b)(5) needs to be modified to clarify the criteria which will determine when the beneficial use of coal ash at an abandoned mine will require approval of a water quality monitoring plan. Currently, it states a plan is required "if applicable." No explanation is given as to when a plan will not be required. (4)

[illegible] determines if a water quality monitoring plan is required under § 290.105(b)(5)? (1120)

Response:

The Department agrees with this comment and has clarified this in the final-form regulations. A water quality monitoring plan is required according to the requirements of § 290.101(d). If either more than 10,000 tons of coal ash per acre or more than 100,000 tons of coal ash in total will be used as structural fill, at a coal mining activity site or at an abandoned mine land site The Department may require a water quality monitoring plan for projects involving lesser quantities of coal ash for other beneficial uses of coal ash where site conditions warrant.

131. Comment:

Requirements that warrant concern for non-profits just trying to improve the environment are the need for engineer sealed and signed plans, one year of background water quality data before a project commences and extensive water quality analysis after project completion. Limits on stream encroachment are a problem, since nearly all the piles we have been involved with are in the stream to begin with. (935)

Response:

It is important that all projects, whether they are public, private, or non-profit, are properly designed (sealed by a licensed professional engineer) and that all permits applicable to the proposed activity are obtained.

The need for background and post-completion water quality monitoring is related to the quantity of ash utilized for the project. This is consistent whether the project is public, private, or non-profit.

The coal ash regulations do not alter the ability to remove (refuse or spoil) piles that are in a stream. The regulations do, however, prevent coal ash from being placed within 100 feet of the stream once the pile is removed. The Department does not believe this requirement will have a significant impact on the reclamation of refuse and spoil piles that encroach on streams.

132. Comment:

In § 290.105(e)(1), the pH of the coal ash is limited to the range of 6.0 to 9.0, unless otherwise approved by DEP. This pH limitation does not seem appropriate, especially for CFB ash. I suggest replacing "in the range of 6.0 to 9.0, unless otherwise approved by the Department" with "greater than 7.0, which is the limit for use at active mining activity sites and coal ash certification. (945, 962)

The acidic conditions at mine sites benefit from the alkaline nature of coal ash, especially that generated by CFB waste coal-fired stations. In other words, the intent should be to restrict the placement of materials at such sites (i.e. mine reclamation sites) that are acidic in nature – that is, materials having a pH of less than 7. The commentator suggested deleting the 6.0 to 9.0 pH range in the proposed rule and replacing it with greater than 7. (1095)

Lowering the pH range to 6.0 would increase leaching potential of several metals, while lowering the upper range to 9.0 would reduce leaching of metals. We recommend the range be 7.0 to 9.0. (1121)

Response:

Proposed § 290.105(e)(1) has been deleted from this section and is addressed in § 290.201(a)(2) (relating to coal ash certification) in the final-form regulations.

133. Comment:

Water quality monitoring should be required in § 290.105(b)(5) for projects involving the use of more than 10,000 tons of ash at abandoned coal surface mine sites. (956, 971)

Response:

The Department agrees. Provisions have been added to the final-form regulations to require water quality monitoring for projects that involve more than 10,000 tons of coal ash per acre or more than 100,000 tons of coal ash in total per project.

134. Comment:

Section 290.105(b)(6) allows sizeable projects (up to 99,999 tons) to occur without any public notice. Furthermore it fails to explain public input procedures for use of coal ash in unlimited volumes in abandoned mine reclamation sites which input should be emphasized by this rule. Without a requirement for a permit, the process for soliciting input of the surrounding community and incorporating that input into the decision to use coal ash at an abandoned mine site should be explained in this regulation. (971)

Response:

In order to clarify the requirements of § 290.105, the proposed § 290.105(b)(6) has been moved to § 290.105(c) and modified in the final-form regulations. This subsection establishes that public notice will be required when coal ash used at abandoned coal surface mine sites involves the use of more than 10,000 tons of coal ash per acre on a project or more than 100,000 tons of coal ash in total at any project. This subsection has been revised to make publication a condition of any contract award for contracts authorizing beneficial use of coal ash as part of reclamation work at abandoned coal [illegible] e mine sites. The subsection also expressly allows the Department to require public notice for projects involving lesser amounts of coal ash if the Department determines that the proposed beneficial use activities are of significant interest to the public or site conditions warrant.

Also, § 290.105(c)has been modified to require public notice to the municipality in which the project is located. In addition § 290.105(e) establishes that the Department will publish a summary of each contract in the *Pennsylvania Bulletin*. In combination, the Department believes these sections provide for adequate public notice.

135. Comment:

The 24 hour limit in § 290 105(e)(3) is too restrictive and does not consider operational considerations (e.g. weather) or for weekends/holidays. (1095)

Response:

It is not unreasonable for an operator to maintain the site by spreading the coal ash promptly. This avoids potential problems of airborne ash which is a nuisance and is, generally, avoidable. If ash is being delivered to the site, personnel should be available at the same time to place it properly.

136. Comment:

Section 290.105(e)(3) includes compaction specifications for coal ash at abandoned coal surface mining sites. Overly compacting materials on surface mines has prevented re-growth of the native hardwood forest. Improved rooting conditions would benefit native grass plantings. We recommend DEP consult with surface mine restoration experts to

develop protective compaction specifications that will still enable tree root growth. (1121)

Response:

Compaction is needed to provide stability and reduce infiltration of precipitation. Compacted ash is not the rooting medium. The rooting zone will be established at the surface.

137. Comment:

Section 290.105(e)(9)(i) should not sanction the use of coal ash in the construction of a stream channel. DEP should present long term monitoring data demonstrating the success from such an application without adverse impacts to water quality before it is encouraged by this rule. (971)

Section 290.105(e)(9)(i) permits the use of coal ash as an aquatard as part of an engineered stream restoration. The Service opposes the placement of coal ash within a stream channel restoration. Coal ash is more likely to leach contaminants when it is in frequent contact with water. Other materials without the risk of water or sediment contamination are available for use in streams. (1121)

Response:

The regulation has been revised to clearly prohibit the use of coal ash in construction of a stream channel.

138. Comment:

The lack of monitoring marginalizes the requirements in § 290.105(e)(10). (971)

Response:

When used as a soil substitute or soil additive, the loading rates will limit the amount of the coal ash that can be placed at a site to an amount below the threshold quantity where the Department requires water quality monitoring. If, however, that quantity is exceeded, water quality monitoring would be required. Coal ash must also meet the leaching standards in the certification criteria.

139. Comment:

The biologically-active zone is usually twenty four inches. § 290.105(e)(6) requires the coal ash to be covered by twelve inches of soil. This would result in direct exposure of plant roots, soil organisms and burrowing animals to contaminants in the coal ash. To prevent toxic effects in plants and animals that migrate into the restored areas, a

minimum of twenty four inches of clean soil should be placed over the coal ash fill. (1121)

Response:

This is not feasible in most cases because of the unavailability of sufficient quantities of soil. Twelve inches is the minimum standard, but typically higher amounts are used where suitable material is available.

§ 290.106

140. Comment:

Coal ash uses in § 290.106(a) may be incomplete. Other uses that may be required in the list are use of coal ash as backfill in active and abandoned mines. (972)

Response:

Use in reclamation of active and abandoned mines is covered in §§ 290.104 and 290.105.

141. Comment:

Some coal ashes that are generated can be high in unburned carbon and can be beneficially used (combusted) as a fuel. The commentator suggested making this a new "other" use of coal ash in § 290.106(b) and recommended a minimum heating value of 5000 BTU per pound. (1095)

Response:

The Department agrees with this suggestion The use of coal ash as fuel has been added to the final-form regulations.

142. Comment:

While some flexibility is provided for certain uses (§ 290.106(b)(1)-(6) uses may have waived or modified requirements), it is not clear how waived or modified requirements would be provided, whether on a use basis, job basis, source basis or other. It is suggested that specific trigger tonnages be developed (or waived, as appropriate) for all uses in § 290.106(b) to eliminate uncertainties. (972)

Response:

Chemical analysis is required for uses in §290.106(a)(3) and (7) because those uses typically require a large volume of material.

143. Comment:

The description in § 290.106(b)(1) needs to be expanded to include use of coal ash as an ingredient in the manufacture of cement and to provide clarification that the term "concrete" includes flowable fill. (1095)

Response:

The Department agrees with this suggestion. Section 290.106(a)(1) has been modified in the final-form regulations to include the use of coal ash in the manufacture of cement. The manufacture of concrete includes flowable fill.

144. Comment:

These uses in § 290.106(b)(6)-(7) raise concerns about water pollution. In both scenarios, the application will likely involve constant contact of coal ash with water, the scenario that heightens the potential for contamination of water. Use of coal ash as a drainage material is a scenario for generating ash leachate. The regulation should provide a more substantive basis for waiving all permit requirements for such an application than simply, "an evaluation of the pH" and "a chemical analysis of the coal ash." Similarly, there should be a more substantive basis than an assessment of pH, before all permitting requirements are waived for the use of coal ash in mine subsidence control, mine fire control and mine sealing. At a minimum, this regulation should require monitoring of both of these applications, regular reporting of the monitoring data to DEP and regular assessment of the impacts of such applications so that adverse impacts are promptly addressed. (971)

Response:

These uses are allowed under the existing regulations. No change has been made since there is no evidence to suggest these uses are causing pollution. Drainage material was removed as a beneficial use. The pH requirement has been removed from § 290.106(a)(7)(ii). A provision has been added at § 290.106(a)(7)(iv) requiring the material to have a cementitious reaction after placement.

145. Comment:

Sections 290.106(b)(3)(i), 290.106(b)(6) and 290.106(b)(7)(i) require a person wishing to use coal ash for certain purposes to provide advance written notice to DEP before using the coal ash. How far in advance must this notice be given? (1120)

Response:

The advance notice requirements in these subsections were not changed from the advance notice requirements in current regulations. Since Department approval is not required in these subsections prior to beneficial use, it is only necessary to provide the notice prior to commencement of the beneficial use.

146. Comment:

Section 290.106(b)(4) requires bottom ash or boiler slag used as antiskid or road surface preparation material to be consistent with "Department of Transportation specifications or other applicable specifications." This requirement is vague. The final-form regulation should specify what specifications would be acceptable. (1120)

Response:

This is not a change from the current regulations and has not been a problem for the Department or the regulated community.

147. Comment:

The restriction of complying with Department of Transportation specifications should only apply to the use of this material when it is placed on public roads. (1095)

Response:

The PA Department of Transportation specifications may also apply in other applications, such as when a private road or parking lot is adjacent to a public road. Contractors are responsible to know when PA Department of Transportation specifications apply and when they do not. This is not a change from current regulations and is not expected to cause difficulties for the regulated community.

148. Comment:

Natural gas exploration in PA has created challenges for treating and discharging w from this activity. Beneficially using fly ash to stabilize this material allows this material to be managed in landfills permitted to handle such materials. (1095)

Response:

This commentator's suggestion is beyond the scope of this regulatory initiative.

<u>§ 290.201</u>

149. Comment:

Once a request for coal ash certification is received, how long will DEP have to either certify the coal ash or reject it? (1120)

Response:

There is no regulatory requirement specified for how quickly the review process takes prior to a decision. Typically the initial review is conducted within two weeks of receipt. A final Department decision is based on quality of information submitted, complexity of the project, and environmental considerations.

150. Comment:

The term "waste classification standard" is vague and should be defined. (945)

Response:

The definition of "waste classification standard" is found in 25 Pa. Code § 287.1, so it has not been repeated in Chapter 290.

151. Comment:

The maximum acceptable levels for certification in § 290.201(a)(1)(i) and (ii) should clearly be posted in this section. Without reading guidance documents, which DEP is now proposing as regulation, the reader has no idea what standards apply. (959)

Section 290.201(a)(1) should be absolute numbers, not dependent on a basis number. While current multipliers of basis numbers produce rational targets for maximum concentrations, they may not always do so (e.g., fluoride). Using an absolute number will provide DEP with an evaluation period to examine changes prior to establishment in the rule. (972)

Response:

The Department has chosen to use this approach to ensure that any changes in standards are immediately enforceable The maximum acceptable levels for certification are included on the form used to require certification and to submit ash monitoring results. Notice of changes will be posted on the Department website to be easily accessible. Because the background data for fluoride is scant, the limit for fluoride was deferred while the Department studies the issue.

152. Comment:

As metals are known toxins and more likely to migrate into groundwater than organic contaminants, it is unclear why acceptable levels would be set at 25 times standards based on the maximum contaminant level goal (MCLG). In contrast, for nonmetals contaminants, which may be less likely to migrate, the MCLG must be met. We recommend that all contaminants be held to the waste classification standard. (1121)

Response:

The 25-times factor for metals is based on fate and transport modeling, which considers both dilution and attenuation in the eight-foot vertical zone between the coal ash placement area and groundwater. Non-metals are less likely to be attenuated (diminished) in this zone. More than 20 years of groundwater data supports that the use of the 25-times factor is appropriate and protective.

153. Comment:

The pH of coal ash for structural fill should also be held to the minimum of 7.0 in § 290.201(a)(2). (1121)

Response:

The pH requirements for coal ash used as structural fill are found in § 290.102(d)(1). The minimum pH for structural fill has been changed to 7.0 in the final-form regulations.

154. Comment:

We suggest language be added to § 290.201(a)(1)(ii) to allow DEP to approve contaminants, other than metals and cations, that leach up to ten times the waste classification standard. The language would be similar to what is allowed for unlined residual waste monofills in § 288.132(a)(2). (962, 1095)

Response:

The Department has reviewed over 1000 samples of coal ash submitted with regards to mine reclamation in Pennsylvania over the past 10 or more years. Other than sulfate, the Department finds no justification for allowing contaminants other than metals and cations to leach greater than the waste classification standard. The final-form regulations allow sulfate to leach up to ten times the waste classification standard. With the exception of fluoride, other anions are restricted to leach no more than their waste classification standards.

155. Comment:

"Qualification may be granted for use of coal ash not meeting all the appropriate standards in subsection (a) if the following conditions are met:" § 290.201(b)(2): "Only standards based on secondary MCLs (aluminum, chloride, iron, manganese, sulfate, silver, and zinc) are exceeded. All other limits shall be met." The statement should be revised in such a manner to allow primary standards to be exceeded, only after (and to DEP's satisfaction) a complete risk-based analysis has been completed for human and environmental receptors (or other approved method) and this analysis indicates the exceedence will have no detrimental effects. (Similar to methods utilized in the Act 2 program). (1)

Response:

The exception for secondary MCLs (other than sulfate) has been removed from the final-form regulations.

156. Comment:

Commentator opposes the request that iron and manganese be dropped from the monitoring parameters for ash due to their health implications. (927)

Response:

The Department did not propose that iron and manganese be dropped. They remain as ash testing parameters.

157. Comment:

Selenium is an insidious toxic element. Its solubility increases with increasing pH. (950)

Response:

Due to the leaching characteristics of selenium, and to assure that it is not a problem, the limit has been established at 0.5 mg/L, which is ten times the waste classification standard. Using the fate and transport model (MCL x 25) would result in a value of 1.25 mg/L. DEP in the past has used 1.0 mg/L because that is the cutoff for selenium being listed as hazardous using the TCLP method. Making the leaching limit 0.5 mg/L is consistent with other "RCRA 8 metals" where no leaching parameter is more than 0.5 times the hazardous waste number.

Actual selenium leachate concentrations for Northern Appalachian coal ashes is routinely less than 0.08 mg/L, so lowering the limit likely will have little or no effect on Pennsylvania derived coal ash. It may prevent the beneficial use of some coal ashes from out of the country, which can leach selenium at over 1.0 mg/L.

158. Comment:

Excessive levels of iron, manganese, sulfate and chloride can also degrade water supplies. The regulation should outline in § 290.201(b)(2)-(3) substantive information that the operator shall provide to demonstrate that the use of coal ash leaching high levels of these parameters will not adversely impact surface water or groundwater. Otherwise, this language is a loophole that will allow for arbitrary decisions not supported by the weight of credible, scientific evidence available. (971)

The regulations should allow DEP to certify coal ash that exceeds certification standards based on secondary MCLs for use at mine sites where applicants can demonstrate that any potential increase of those constituents in groundwater is inconsequential, regardless of baseline levels. (962, 1113)

The provisions in § 290.201(b)(1) should not be limited to "specified mine site(s)" and in § 290.201(b)(3) to "mine site operators." The commentator suggests changing these to "the specified site" and "site operator." (1095)

Under § 290.201(b)(3), DEP should be able to approve those coal ashes that exceed the secondary MCLs, provided the operator or generator can demonstrate that any potential increase in concentrations of constituents in surface and groundwater would be inconsequential, regardless of baseline levels. The commentator provided suggested language which replaces "not adversely impact" with "have inconsequential effects" and drops the requirement that the use of the coal ash will achieve and overall benefit in groundwater quality. (1095)

There should be a provision in the proposed certification exemptions for ashes that meet the primary MCL but not the secondary MCL parameters. (1117)

The criteria are not listed in § 290.201(b)(3) for determining groundwater, and surface [illegible] will not be contaminated. Based on the NAS findings, prediction of the leaching potential is not likely to be reliable as it can take decades before any leaching would be evident. Since demonstrating groundwater and surface water protection with high confidence is not currently feasible, exemptions should not be granted. (1120)

Under § 290.201(b)(2), a certification exception may be granted if only the secondary MCLs are exceeded. These contaminants are likely to migrate into groundwater and, ultimately, surface waters. Recent stream monitoring near coal mines has demonstrated that these ions can reach concentrations that are collectively toxic to aquatic life (Pond et al., 2008). The coal ash regulations should require that these secondary MCLs be met to reduce risks to aquatic life (1121)

Response:

The exception for secondary MCLs (other than sulfate) has been removed from the final-form regulations.

159. Comment:

Only standards based on secondary MCLs may be exceeded for certification in § 290.201(b)(2). Fluoride should also be included as one of these parameters. (945)

Response:

The Department has chosen to use this approach to ensure that any changes in standards are immediately enforceable. The maximum acceptable levels for certification are included on the form used to require certification and to submit ash monitoring results. Notice of changes will be posted on the Department website to be easily accessible.

Because the background data for fluoride is scant, the limit for fluoride was deferred while the Department studies the issue.

160. Comment:

Constituents having secondary MCLs may change over time. Therefore, it is unnecessary to list specific constituents. (1095)

Response:

A list of secondary MCLs has been deleted from the final-form regulations.

161. Comment:

Section 290.201(c)(3). There are numerous "pollution control processes" at a generating station whose operation does not impact the chemical or physical characteristics of the ash. The commentator suggests limiting this requirement to "air pollution control processes." (1095)

Response:

The wording has been changed to "pollution control processes that impact the chemical characteristics or physical properties of the ash" in the final-form regulations.

162. Comment:

There are no provisions for the outlet of new coal ash sources from new coal ash generators in § 290.201(c)(5). This would hinder construction of new coal projects in PA. Provisions should be included to allow for the temporary placement of coal ash from new generators for a year to allow for obtaining the sample data needed for certification. (945)

Response:

The Department will not assume any ash source meets the criteria for beneficial use prior to receiving the data that supports that claim. The generator must dispose the ash in an approved manner until a demonstration can be made that it meets the criteria for beneficial use. Allowances for this temporary situation can be built into the plan for the project.

163. Comment:

The requirement for chemical analysis on four representative samples spaced over a 2-6 month period in § 290.301(c)(5) is an improvement over current characterization requirements of a single sample. (971)

Response:

The Department acknowledges this comment.

164. Comment:

Why are these tests being required for coal ash qualification if the coal ash is not being utilized for low permeability or acid neutralization? (1, 1120)

Clarification should be added that these requirements are only necessary when the coal use being requested includes low permeability or acid neutralization. (1)

Are all of the tests specified in § 290.201(c) required to obtain coal ash certification? If a designated use is proposed, some of the parameters will not have an effect on the intended use. Are all of the unnecessary tests required by § 290.201(e) needed every three months? (959)

ılysis of permeability in § 290.201(c)(7) should only be required when the coal ash is to be used as a low permeability material. (962)

Certification testing required under § 290.201(c)(7)-(8) for permeability and neutralization potential may not be applicable to ordinary placement as backfill. Also, certification testing under § 290.201(c)(6), Proctor test, may not be necessary so much for certification as use at placement sites for compaction effort validation. It is suggested that certification testing requirements be refined to reflect individual uses. (972)

The analyses required for dry density permeability and neutralization potential should only be required for beneficial uses where such data is applicable. (1095)

Response:

Hydraulic conductivity data provides information to evaluate the hydrologic properties of ash in the context of the mine site as a whole, regardless of whether it is being used as a low permeability material. The information is consistent with requirements of Chapters 87 and 88, see § 87.69 and § 88.49 (pertaining to protection of hydrologic balance) for example. Neutralization potential is a measure of the acid-neutralizing ability of the ash. This is an important property of ash for evaluation of the long-term ability of an ash to maintain a given pH, regardless of whether it is being used for alkaline addition. This compliments the requirements of Chapters 87 and 88, see § 87.44 and § 88.24, dealing with characterizing mine site materials.

165. Comment:

The chemical characterization methods required by current regulations were developed for other residuals and wastes and are simply chemically inappropriate for characterization of coal ash and related materials. This is, in fact, in the EPA manual

(SW-846) where the currently most often used methods (TCLP and 3050) are documented. The SPLP accepted in PA is even less adequate. (950)

Response:

The Synthetic Precipitation Leaching Procedure (SPLP or EPA Method 1312) is an appropriate method for determining leachability of coal ash. This model predicts what is likely to leach out of the ash when exposed to acidic rainfall.

The Toxicity Characteristic Leaching Procedure (TCLP or EPA Method 1311) predicts what can leach out of a waste when disposed in a municipal waste landfill. In the TCLP scenario, waste will be exposed to organic acids produced from decomposing garbage. TCLP is inappropriate for beneficial use of coal ash, which is why TCLP was rejected in favor of the SPLP method many years ago.

EPA Method 3050 is an acid digestion method used to determine the total amount of metals in a waste. While a digestion method such as Method 3050 can determine how much of each metal is present in a material, it cannot predict how much of each metal will leach out of coal ash under field conditions.

While the Department is open to adopting improved standard test methods, it will continue to require SPLP testing until another methodology has been developed and approved by EPA or the Department. The final-form regulations allow the Department to require a different leaching procedure than SPLP.

166. Comment:

The test that will be used to characterize coal ash leaching, SPLP, will not reliably predict the toxicity of the coal ash to be placed in mines. Continued reliance on the SPLP is inexplicable given the consensus reached by scientists that single-point lab leaching tests do not test ash under the range of leaching conditions encountered in the field. DEP should replace its reliance on the SPLP test in these regulations with a PA-specific protocol utilizing the Kosson Leaching Framework or another test approach that addresses the leaching factors just discussed in Managing Coal Combustion Residues in Mines (NRC). (971)

Response:

Department scientists and chemists have considered the information on the Kosson test. The Kosson test has several drawbacks: the process is not yet widely accepted, laboratories are not yet prepared to undertake this procedure, no interpretative framework has been provided by the researchers, and it would be prohibitively expensive. SPLP is a synthetic precipitation leaching procedure that simulates acid rain conditions that are typically found in Pennsylvania. If ash is kept out of the water table, the only water that will interact with the ash is rainwater. SPLP has proven to be an effective test for coal ash and protective of the environment in Pennsylvania.

While the Department is open to adopting improved standard test methods, it will continue to require SPLP testing until a more widespread acceptance and justification for the Kosson Framework (or any other procedure) is more widely accepted by the scientific community and has been well justified. The final-form regulations allow the Department to require a different leaching procedure than SPLP.

167. Comment:

Short-term single point batch leach tests do not provide an accurate prediction of minefilled coal ash leaching behavior. DEP has recognized the limitations of the very same leaching tests it now proposes to allow for characterization of coal ash. In a 2005 study (M. J. Menghini et al., "The Use of Leachate Data and Other Factors in Evaluating CCB's For Placement At Coal Mine Sites In Pennsylvania," p. 119 (2005)), DEP went on to identify several potentially more promising tests, including ANS 16.1, the MCC1 leach test, the MCC-3S Agitated Powder Leach Test Method, and the Mine Water Leaching Procedure. These and other potential alternatives to inadequate short-term single point tests have received no consideration during this rulemaking. (969)

Response:

The Department disagrees that the 2005 report concluded that SPLP was inadequate to determine if a coal ash is suitable for use in mine reclamation. The report did not state that the other leaching procedures listed in the comment were "potentially more promising" than SPLP. SPLP is an appropriate method for determining leachability of coal ash.

168. Comment:

How will DEP determine what the exact monitoring requirements are for each generator of certified coal ash under § 290.201(e)? How will the generator be notified of what their specific monitoring requirements are? Can the requirements of this section be uniformly applied to all generators of coal ash seeking to beneficially use it? (1121)

Response:

The monitoring requirements are given in § 290.201(d). This section applies to only those generators of ash that are certified. Some other uses of coal ash do not require such approval (refer to § 290.106 (b)). The generators are notified by letter of these monitoring requirements upon approval of their certification request.

Approval of an ash source for a particular project has two components – ash approval and site approval. Ash approval is the certification process. Additional monitoring or performance requirements are given under each section particular to the intended use. An evaluation of site conditions to determine if any particular ash source is suitable is also under the determination of the Department.

169. Comment:

Section 290.201(e)(1) should be changed to have the sample analysis submitted on a quarterly basis with a submission deadline 30 days following the end of the quarter. (959)

Response:

The source generator is provided due dates for ash monitoring and submission deadlines with the approval letter for their source.

170. Comment:

Section 290.201(c) should be modified to apply only to non-cementitious application of coal ash to the land. (962, 1095)

Response:

The definition of coal ash does not differentiate between cementitious and non-cementitious ash and, therefore the certification does not.

171. Comment:

The language "nitrite" should be removed from § 290.201(c)(5)(i). (962)

Response:

Nitrite could be formed in processes used to reduce NOx emissions, such as the practice of adding ammonia. There is an example in the scientific literature where nitrite in the groundwater was an issue at a coal ash site. Since nitrite has a primary (health-based) MCL, the requirement remains in the final-form regulations.

172. Comment:

A representative sample should only be required in § 290.201(e) when a significant change in operation occurs. (962)

Additional ash sampling should only be taken in the event that there is a significant change in operation of the combustion unit generating the coal ash or a significant change in the fuel source. (1095)

Response:

Natural variation in the coal chemical makeup and potential variation or changes in the combustion processes may result in variation in the quality of the ash produced. Regular

sampling is warranted to ensure the resultant coal ash continues to meet certification standards.

The final-form regulations have been modified to require collection of a representative sample for analysis whenever there is a change in operation of the combustion unit generating the coal ash or change in fuel source that would result in a significant increase in a coal ash chemical parameter or a change in physical properties that could adversely impact slope stability, compaction characteristics or site hydrology.

173. Comment:

What is the need for volume reporting? Ash can be compacted and the tonnage requirements in § 290.201(e)(3) would provide DEP with the required data. (1120)

Reporting requirements under § 290.201(e)(3) for coal ash dry tons on an annual basis are clearly needed and may be considered a reliable number. Requiring cubic yards would seem unreliable unless more specific reporting requirements are given. Coal ash [illegible] packed in a truck or rail car has quite a different volume from the same mass placed at a mine site. To determine cubic yards based on tonnages, Proctors, and density testing could be done, but it is just a mathematical exercise. For whatever purpose the cubic yardage information is intended, it should be the basis for the determination methods. (972)

Response:

Volume is used to track reclamation progress.

174. Comment:

In § 290.201(f), how would the person beneficially using the coal ash know if any information contained in the certification application by the generator has changed? What is the need for both parties to notify DEP of any changes? (1120)

Either party, but not both, should notify DEP. (1095)

Response:

The final-form regulations have been revised to delete the requirement in this section that the person beneficially using the coal ash must notify the Department of changes to the information filed in the certification application or of any evidence that the coal ash may not meet certification requirements. The notification requirement in this section is now limited to the coal ash generator.

<u>§ 290.202</u>

175. Comment:

In § 290.202(a)(2), the term "consistently" needs to be more clearly defined. What constitutes consistently exceed the criteria to an extent that it leads to revocation of certification is unclear. In addition, the physical or chemical characteristics that would make the coal ash unsuitable for beneficial use in § 290.201(a)(3) need to be clearly defined. (959)

Section 290.202(a)(2) appears to contradict the qualification standards outlined in § 290.201, which state that the limits for metals and cations at 25 times the waste classification standard "shall be met." The use of the word "consistently" in this provision explicitly implies that maximum acceptable leachate levels for an ash can exceed any of the limits in the leach test at least several times before the qualification for that ash would be revoked. This word should be removed. (971)

The term "consistently" used in § 290.202(a)(2) is vague. It does not establish a binding standard that could be applied to all members of the regulated community. This provision should be clarified in the final-form regulation. (1120)

Response:

Section 290.201 describes the criteria applied to collected samples to establish consistency. If an ash is shown to exceed the levels during evaluation, then the ash is not suitable. The language "consistently exceed the certification criteria" has been dropped from the final-form regulations. The text has been revised to state that certification may be revoked if the coal ash exceeds the certification standards and the generator fails to make an acceptable demonstration as described in § 290.203. Regular monitoring, as required by § 290.202 will enable the operator to identify a sampling, handling or analysis error, or an anomalous event. These types of errors are not uncommon. Therefore, § 290.203 provides detailed procedures for demonstrating that a specific sample that exceeds certification standards not a typical representation of the coal ash, as well as time frames for making the demonstration.

176. Comment:

Section 290.202(c)(1) would prevent the beneficial use of a particular generator's coal ash for at least three months. This is an excessive period to prevent reuse of the ash. (959)

Response:

This provision applies to a generator that had certification of their coal ash revoked. The generator is given the opportunity to demonstrate an error or outlier has occurred under § 290.203. If the ash is unsuitable, it cannot be used. If revocation is due to unsuitable chemical characteristics of the coal ash, then the Department would need to consider at least three months of new data to demonstrate that the chemical characteristics of the coal ash are again able to meet the certification requirements.

§ 290.203

177. Comment:

These provisions encourage generators of coal ash that readily leaches high levels of metals in short-term, single-condition lab leach tests to retest their ash until they have gathered enough results that meet qualification requirements to pass muster with DEP. The possibility that they are being encouraged by these provisions to readily disregard and not submit results that fail the test is overlooked. At 25 times drinking water standards, the maximum acceptable leachate concentrations allowed by these tests are already set above levels that would produce toxic impacts. Furthermore, the rule has no isolation requirements to keep such ash from contact with water. Yet, rather than encouraging generators to dispose of such ash at safer sites with liners and separation requirements, the language of § 290.203 openly encourages efforts to explain away toxic results. The language should be eliminated. Instead, the regulation should clearly require that failure of the test for any parameter one time will result in the immediate suspension of the beneficial use certification. If the generator chooses to test the ash a second time, the regulation should require split sampling of a second sample with an independent lab that does not have any business relationship with the generator or the mine operator. The exceedance of a leaching threshold a second time by either of the labs or an exceedance in a subsequent test by the generator should permanently disqualify the ash from mine placement. This prohibition should apply to the ash as long as it is being generated by the same combustion unit and comes from the same coal seam being mined as the fuel source. Changes to either the combustion unit or fuel source should enable the generator or mine operator to apply for a new qualification of the ash for mine placement. (971)

Response:

The Department has revised this section regarding the evidence needed to make the demonstration in order to retain the certification.

The Department disagrees that most if not all coal ash generated in PA is "toxic" or produces "toxic impacts." Proper use of the term "toxic" refers to levels exceeding the toxicity characteristic regulatory levels, the RCRA standards. Ash that is beneficially used in PA is typically an order of magnitude or more below RCRA limits. Ash that is beneficially used in Pennsylvania is not "toxic" and has concentrations of metals well below that threshold.

Laboratories in PA are required to be accredited. Fraudulent submittals and manipulation of data would jeopardize their accreditation and could result in criminal prosecution. Sampling coal ash and water quality associated with coal ash sites is a small fraction of business for laboratories in PA and not worth the risk of forfeiting their business and professional careers. Additionally, fraud is highly improbable considering the amount of sampling that is required in a given time period. The Department will also sample the ash at times to confirm the results. The generator may be able to identify a problem with

the ash through additional sampling and assessment and be able to correct the problem expediently. One exceedance of the limits does not constitute certainty that the ash is unsuitable from that point on and should be banned. The Department has rejected and removed approval for sources in the past based on the reasonable criteria in these regulations.

Chapter 290, Subchapter D

178. Comment:

DEP recognizes that an integrated mining and beneficial placement of ash in a mine site as part of a reclamation and abatement program will result in changes to water quality, and has already established criteria to address variations in water quality without triggering assessment and remediation analysis. PCA requests that the existing Chapter 87, Subchapter F, and Chapter 88, Subchapter G, continue to be used as the regulatory basis for water quality monitoring for beneficial use of coal ash as part of a reclamation and abatement program. (948)

Response:

The beneficial use of coal ash is not regulated under those chapters. In this final-form rulemaking provisions have been made in § 290.305(c)(2) and § 290.304(a)(1) for consideration of load-based standards at remining sites.

179. Comment:

The need for assessment and abatement at a particular site should allow for consideration of whether an overall improvement in site conditions has occurred. (1117)

Response:

The purpose of the assessment and abatement requirements in Subchapter D is to prevent off-site degradation of water quality from the beneficial use of coal ash. If there is overall improvement in site conditions, this will be factored into the assessment as required in § 290.304.

§ 290.301

180. Comment:

What is a water quality monitoring plan? (1120)

Response:

A water quality monitoring plan provides the monitoring points and sampling procedures necessary to characterize the quality of ground and surface water beneath and adjacent to the site.

181. Comment:

How will the approval process work for water quality monitoring plans? Does a form need to be submitted? How soon before using coal ash must the application be filed? How long will DEP have to review the application? How will the applicant be notified of DEP's decision? The final-form regulation should address these questions. (1120)

Response:

A water quality monitoring plan is a standard requirement for many environmental permits. Policy and forms have been developed specific to each program to help applicants collect and submit the necessary information adequate for such a plan.

The process will work in a similar manner as in other Department programs. At mining activity sites, this plan will be implemented under the mining permit, which has a modular application, including modules specific to coal ash use. At an abandoned mine site, this plan will be part of the contract. For structural fill and soil substitute/soil amendment use, there is no permit or contract with the Department, so the water quality monitoring plan stands alone.

There is no specific time requirement prior to coal ash use before which the plan must be submitted for review and approval. However, the water quality monitoring plan must be approved prior to storage, placement or use of coal ash at the site. A year's worth of monitoring data must be in place before coal ash may be beneficially used. Generally, the time required for review will vary, depending primarily on the complexity of site geology, and staff workload.

182. Comment:

We ask the Board to explain in the preamble why the time frames in § 290.301 are appropriate and how the requirement will work with other DEP regulations. (1120)

Response:

Twelve months of background samples allows for the collection of a complete year of data, which will reflect seasonal variations. This approach allows for comparison with future monitoring results. This approach has worked well for establishing baseline conditions in the Remining Program (Chapter 87, Subchapter F and Chapter 88, Subchapter G).

Quarterly sampling during active placement is designed to capture seasonal variations, while limiting the cost of sampling. This has been the Bureau of Mining and

Reclamation's standard monitoring approach for other aspects of Pennsylvania's mining program and has worked effectively.

Regarding the 10 years of post-placement monitoring, comments from commentators ranged from there should be no regulations (and presumably no monitoring) to suggesting that 30 years should be required.

The National Academy of Sciences report published in 2006 provided little guidance on monitoring duration. The council acknowledged that "the committee could not resolve their concerns nor reach consensus on the duration of long-term groundwater monitoring..." Page 181 of the report provides insights into various opinions on this matter. "Some committee members believed that longer-term groundwater monitoring should be required in all cases and that release of the bond should be tied to such monitoring. Other committee members felt that there was insufficient evidence to require this in all cases. Some committee members also believed that the longer-term reclamation bond liability would be a significant deterrent to the use of CCRs in mine reclamation – a practice that the committee agrees can provide environmental benefits when managed properly."

The length of post-placement monitoring is based on Department observations and experience. Contaminant transport in groundwater in coal-bearing rocks and coal mine settings is normally detected in as few as two years and routinely within 5 years of reclamation. At the close of ash placement, some sites will have decades of water monitoring that occurred during the life of the operation. The first five years of post-ash placement require quarterly sampling. The second five years has a reduced frequency of one sample per year for a monitoring point. The reduced sample frequency is to reduce costs, but provide some longer-term data to assure that contamination does not occur over the long-term. Where there are indications of potential pollution problems developing, the Department can extend the length and increase the frequency of monitoring.

183. Comment:

The rules should require that pollutant levels are fully monitored surrounding the placement site. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925)

Response:

The regulations require upgradient and downgradient groundwater monitoring, which characterizes the surface and groundwater flow to and from the placement site.

184. Comment:

The criteria for "material damage to the offsite hydrologic balance" that must be prevented, as well as the standards that trigger assessment and abatement of

contamination, should be explicitly identified as part of the water quality monitoring plan. (971)

Regulations should require that the monitoring plan to be submitted will include criteria that define "material damage to the offsite hydrologic balance" will be prevented when coal ash is used at a coal mine. Any violation of applicable surface water quality standards or groundwater standards in waters draining beyond the mine property boundary should be considered prohibited material damage to the offsite hydrologic balance. (956)

Response:

The term "material damage" is not used in these regulations The definition for "materially damage the quantity and quality of water" is given under the federal statute for Surface Mining Reclamation and Enforcement (30 CFR § 701.5) in reference only to alluvial valleys and the capability of farming.

185. Comment:

Who/how will DEP determine what a "Background" standard is for any downgradient wells installed to meet these new regulations in areas where coal ash has already been placed? Furthermore, special conditions should be written in permits to acknowledge that wells were installed after ash placement started. (1)

Response:

It is impossible to collect data that never existed. Water quality impacts, should they occur, would be evaluated on available data and trends. In cases where additional wells are added after ash use has begun, the Department will consider various trends in the data through time to determine if there is a quantifiable effect occurring.

186. Comment:

The regulations need to recognize sites where ash has been previously placed and groundwater quality data has been collected. The operator may have historical data that can be used in a monitoring plan. (962, 1095)

If a provision is made for mine sites that have previously accepted ash – and the site is active after the adoption of these regulations – it is suggested that the baseline be established while ash continues to be placed at the site. (1095)

Response:

All relevant water quality and quantity data is used in the hydrologic or hydrogeologic evaluation.

187. Comment:

In all cases, the baseline to be established for each constituent will be the maximum dissolved value recorded from the downgradient monitoring point(s) during the baseline establishment monitoring period. (1095)

Response:

While the maximum value may be used, there are statistical tools that may be appropriate in establishing baseline values in some cases.

188. Comment:

Section 290.301(a) should be changed to clarify that the water quality monitoring plan be submitted and approved prior to the approval of any permit for coal ash placement. (971)

Response:

As suggested, the language has been changed in the final rulemaking. In addition, the citation to § 290.104 has been deleted, since it is covered under § 290.101(d).

189. Comment:

The requirement for upgradient groundwater monitoring proposed under §§ 290.301(a)(1) and 290.302(a)(1) should not apply to existing facilities. Upgradient monitoring associated with a pre-existing highly disturbed environment or inactive waste coal fuel removal/remediation provides no relevant information associated with the benefit or detriment to the overall hydrogeology associated with the operation. Further, it is widely understood that to the extent that there are increases in constituents being monitored, such increases occur during the actual disturbance of the waste coal mining and/or reprocessing while the material is being excavated and the site is open without regard to ash placement. (966)

Response:

Upgradient monitoring points should be unaffected by ash placement and thus still fulfill the purpose of an upgradient well, even if installed after coal ash placement has begun.

190. Comment:

The quality of upgradient groundwater is irrelevant to defining the baseline conditions related to work on seriously impacted waste coal remining and reclamation sites that will be utilizing ash for beneficial use in restoring the site. We request §§ 290.301(a)(1) and 290.302(a)(1) be modified to drop the requirement for upgradient monitoring as it relates to waste coal reclamation sites. (966)

Response:

While the coal ash should not impact groundwater upgradient to the placement site, there is a valid reason to monitor upgradient of the site, whenever possible. Water downgradient can show the impact of any leaching that occurs at the placement site. Upgradient monitoring can also provide data to demonstrate that contamination being detected downgradient was not due to the ash placement, but was occurring before the water reached the site. Monitoring points outside the area of hydrologic influence are useful for a variety of purposes besides indications of off-site pollution, such as helping to explain changes in quality or quantity that are seasonal and providing insights into water sampling collection or analytical errors.

191. Comment:

Baseline monitoring of ash sites and monitoring plans should be completed and subjected to DEP scrutiny *and* public input prior to project approvals or the issuance of mining permits involving ash placement. (956)

Response:

Public notification and comments are an integral part of the mining permit application process. Water quality monitoring plans and monitoring data are public information and can be reviewed by interested parties. Public participation is an integral part of the coal mine permit review process, as set forth in 25 Pa. Code Chapter 86, §§ 86.31, 86.32, 86.34, and 86.35. Section 290.104(e) also provides for public notification by the Department.

192. Comment:

The proposed § 290.301(a)(2) does not include abandoned mine sites under § 290.105. (4)

Response:

The final-form regulations clarify that water quality monitoring is required for abandoned mine lands where more than 10,000 tons of coal ash per acre or more than 1000,000 tons in total per project is beneficially used.

193. Comment:

The proposed regulations increase the minimum number of monthly background samples at each monitoring point from six months to twelve months. The six months of baseline sampling was derived based on a statistically valid approach developed by EPA. PCA believes this approach is still valid and requests the minimum monitoring be six months.

Further, PCA believes that all monitoring data obtained prior to the placement of coal ash at a mine site should be used to define pre-ash water quality. (948)

Response:

Seasonal variations impact water quality and can be important in understanding if changes to water quality is due to ash placement or merely reflects seasonal changes. The change from six months to twelve months background has already been made in the Departments's interim guidance documents.

194. Comment:

Twelve months may be insufficient to establish a true baseline for the site, since there can be significant seasonal variations along with year-to-year variations in overall precipitation and temperature. Therefore, the baseline should be three to five years. The commentator suggests that the first twelve monthly samples is prior to placement of coal ash and that an additional two years of sampling after coal ash placement be part of the data used to establish the baseline. (1095)

Response:

The Department considers 12 monthly samples of pre-coal ash placement to be the acceptable standard.

195. Comment:

A frequency of no less than quarterly monitoring should be required during ash placement. Discretion to allow less than quarterly monitoring should be eliminated. (930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 970)

At least a year of monthly sampling should be required to collect enough baseline data to characterize water quality at ash sites before permits are issued. Discretion to allow less than a year of monthly sampling prior to permit approval should be eliminated. (930, 932, 935, 938-940, 943,946, 947, 951-953, 970)

In §§ 290.301(a)(2) and (3) "different number or frequency" should be replaced by "greater number or greater frequency." (971)

Discretion to allow less than a year of monthly sampling and less than quarterly sampling frequency should be eliminated. (956)

Response:

The Department agrees with the commentators regarding removing the discretion to monitor less frequently in compliance with these sections. The language has been changed in the final-form regulations to remove the discretion.

196. Comment:

We understand the need for a minimum of twelve monthly background samples to be taken to define seasonal fluctuations in parameter concentrations due to variable precipitation, groundwater levels and surface water flows. However, variations in concentrations at mining sites will also be introduced due to activities associated with excavating old gob and culm banks. While a site is being excavated, temporary hydrologic impacts unrelated to coal ash placement are typical. A significant amount of activity will occur prior to ash placement and the water monitoring data during the pre-ash placement period is a critical part of the baseline against which monitoring data post-ash placement can be measured. We suggest modification of § 290.301(a)(2) to allow, in addition to the twelve samples needed for permit approval. samples collected before site development, during site development and during mining but prior to ash placement to be considered in defining a site's background water quality. (966)

Response:

The mine operator, ash generator and the Department consider all relevant data that is available in making sound scientific and compliance decisions. The person conducting the activity should provide all information necessary along with analyses to place the sampling results in context with the activity occurring at the site. In consideration of certain site conditions, the Department may require certain extra monitoring to determine the water quality changes in response to changing site conditions.

197. Comment:

Planning and development of waste coal fuel sites is a long process involving many technical and legal requirements. Adding another year to complete background monitoring is not necessary to the permitting process. For the purposes of expediting the permitting process, we suggest that DEP allow applications to be submitted prior to completion of twelve months of background sampling. DEP can withhold final issuance of a permit until the minimum twelve months of sampling is completed and submitted. (966)

Response:

The Department's mining program has allowed partial collection of baseline data (see Module 8.2 of the hydrology portion of permit applications) at time of permit submittal, with the requirement that all data be submitted prior to the permit issuance. A minimum of six months of baseline data is required for all mine permit applications. Therefore the additional background data, at the most, will increase the length of data gathering by six additional months.

198. Comment:

Section 290.301(g) requires quarterly water quality monitoring for five years after final placement or storage of coal ash and annual monitoring from the end of year five through year ten. Under Chapters 86 – 90, DEP is already required to ensure the site meets all reclamation requirements prior to a final bond release. The Phase II bonding period requires the bond to be in place for five years prior to release of the bond. PCA recommends that the timeframe for monitoring be tied to the Phase III bond release. (948)

The long term monitoring requirements in § 290.301(g) as proposed is confusing and may conflict with the bond release standards under SMCRA. Reclamation bonds extend for five years following Stage II site reclamation, which includes full reclamation and successful vegetation. It appears from the proposed rule that an additional five years of monitoring following final reclamation is required, therefore extending Stage III reclamation standards to ten years. The commentator suggested language to change water quality monitoring to five years following Stage II bond release. (966)

Our concern relating to bonding is that extending the bonding requirement will reduce the available cash to conduct our business. The current practice is to release part of the financial bond upon completion of the work. The proposed regulations require the entire bond to be held until the completion of the ten-year post-operational period. We agree that some money should be held during the post operation period, but the entire amount is excessive and will add a significant cost to the reclamation process. (1115)

Response:

This section applies to all beneficial use sites where water quality monitoring is required. For mining sites, a Stage III bond would be held until completion of monitoring, as it is under current program requirements.

199. Comment:

DEP offers no rational or scientific basis for the additional five years of monitoring beyond what is already prescribed by law. We believe the current testing and monitoring requirements are sufficient to protect the environment and public at large. (965, 1115)

Response:

Comments regarding the length of post-placement monitoring range from no regulation, which presumably is a recommendation for no monitoring, to regulations that require up to 30 year of monitoring.

The National Academy of Sciences report published in 2006 acknowledged that "the committee could not resolve their concerns nor reach consensus on the duration of long-term groundwater monitoring…" Page 181 of the report provides insights into their differences of opinions: "Some committee members believed that longer-term groundwater monitoring should be required in all cases and that release of the bond

should be tied to such monitoring. Other committee members felt that there was insufficient evidence to require this in all cases. Some committee members also believed that the longer-term reclamation bond liability would be a significant deterrent to the use of CCRs in mine reclamation – a practice that the committee agrees can provide environmental benefits when managed properly."

The first five years of post-ash placement require quarterly sampling. The second five years reflects a reduced frequency of one sample per year for each monitoring point. Where there are indications of potential pollution problems developing, the Department can extend the length and frequency of monitoring.

200. Comment:

The length of monitoring is definitely concerning to us. The additional monitoring will add $163,800 to each monitoring point. (959)

Response:

The Department recognizes that there are increased costs. Based on existing laboratory costs, the Department has calculated the additional sampling cost per sample point per year is about $725, which is minimal in the interest of environmental protection.

201. Comment:

A minimum of ten years of post-closure groundwater monitoring at all mines where CCW is disposed should be required. (1060, 1094)

Response:

The Department agrees.

202. Comment:

According to the NAS, leaching of contaminants may not occur for decades. Coal ash treated to raise the pH would not begin to leach until the lime or other amendment was exhausted by acid precipitation. We recommend that the minimum monitoring period be set at 20 years. (1121)

Response:

Water quality monitoring begins upon commencement of coal ash placement and continues through the life of the project. Water quality monitoring prior to placement, during placement and the extension to 10 years post-placement provide sufficient data to verify the effectiveness of the beneficial use of coal ash.

There are mines in PA that have been utilizing coal ash safely for 25 years. Many of the sites will have had ash placement for a decade or more at time of closure, and placement of millions of tons of ash; thus at the time of closure there will already be a large body of data from water monitoring under ash placement conditions. Department observations concerning mine site hydrology indicate that water quality impacts from mining typically occur within two to three years after mine reclamation, therefore a ten year monitoring period post-placement is appropriate.

203. Comment:

These sites should be monitored quarterly for at least 30 years after ash placement is finished. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925, 930, 932, 935, 938-940, 943, 946, 947, 951-953, 956, 970, 1102)

At least thirty years of quarterly monitoring should be required after ash placement is finished. Monitoring should continue for a period long enough to differentiate contamination by ash from impacts of mining. (956)

Thirty years is the duration of monitoring after closure at more hydrologically stable and less fractured municipal solid waste landfills. Thus, 30 years of post placement monitoring at a frequency that will detect if contamination is occurring is needed at mine ash sites. (971)

While the NAS committee did not recommend a specific post-closure groundwater monitoring duration, they did suggest that fewer than ten years is insufficient and more than ten years is necessary to accurately characterize coal ash behavior. The NAS report notes that "changes in groundwater quality can take several decades" and that a "longer field monitoring period will likely be needed in some situations. Further, "In cases where there was a large distance between the location of (coal combustion residuals) and monitoring wells, monitoring over a limited time frame (e.g., <10 years) might not detect any problem, even if one existed. PA municipal solid waste landfills are typically subject to a 30-year post-closure monitoring requirement. The same 30-year duration, if not longer, must be required at coal ash placement sites, particularly given that municipal solid waste is relatively benign in comparison to coal ash and landfills are more hydrologically stable than complex mine environments. (969)

Response:

Water quality monitoring begins upon commencement of coal ash placement and continues through the life of the project. Water quality monitoring prior to placement, during placement and the extension to 10 years post-placement provide sufficient data to verify the effectiveness of the beneficial use of coal ash.

There are mines in PA that have been utilizing coal ash safely for 25 years. Many of the sites will have had ash placement for a decade or more at time of closure, and placement

of millions of tons of ash; thus at the time of closure there will already be a large body of data from water monitoring under ash placement conditions. Department observations concerning mine site hydrology indicate that water quality impacts from mining typically occur within two to three years after mine reclamation, therefore a ten year monitoring period post-placement is appropriate.

§ 290.302

204. Comment:

The term monitoring "well" should be changed to monitoring "point" in §§ 290.302(a)(1) and § 290.302(b). The number of monitoring points should be determined on a site-by-site basis. (962)

The monitoring points in §§ 209.302(a)(1) and (b) are not required to be "wells." (1095)

Response:

The term has been changed in the final-form regulations.

205. Comment:

Given the complexities of hydraulic flow patterns in PA coal mine areas, monitoring wells that are not placed in close proximity to the preferred flow paths on such sites will not identify pollution events that would require abatement. My experience has indicated that monitoring well locations are currently determined by cursory examination of local hydrology and practical convenience for well drillers or the ash facility owners, not identification of the preferred flow paths for ash contacting waters. The proposed regulation does not appear to address this issue. (950)

Response:

Section 290.302 contains standards for monitoring well locations which have been proven successful in monitoring other types of facilities under the residual waste regulations. Coal mine permits will have to meet the monitoring requirements of Chapter 290 and the appropriate mining regulations.

206. Comment:

Section 290.302(a)(1) indicates that: "At least one monitoring well at a point hydraulically upgradient from the coal ash placement area in the direction of increasing static head that is capable of providing representative data of groundwater not affected by placement of coal ash, except when the coal ash placement area occupies the most upgradient position in the flow system." This exception should be revised to indicate: "except when the coal ash placement area occupies the most upgradient position in the

flow system or it can be demonstrated that no additional outside influences upgradient of the site will require an upgradient monitoring point." (1)

Response:

The Department does not agree that it can be demonstrated that no outside influences upgradient of the site will occur.

207. Comment:

Section 290.302(a)(1) fails to ensure or allow for the establishment of a functional upgradient monitoring point. Water at the mine site that is affected by mining but not ash placement must be monitored. Otherwise, when contaminant increases occur at any of the downgradient points, DEP will lack data that will enable it to understand, with a reasonable degree of confidence, the degree to which the ash is contributing to the problem. This loophole should be eliminated. Ash placement should never truncate the capability of the monitoring necessary to protect water supplies. (956, 971)

Up-gradient monitoring that measures the effects of mining without ash placement should always be required. (956)

Response:

The Department disagrees. In some situations it may not be practical or possible to site upgradient wells outside of the coal ash placement area. The Department can use other comparative sampling results, such as background data to evaluate water quality in these cases.

208. Comment:

Upgradient and downgradient monitoring points should be required at all coal ash placement sites – absolutely no exceptions. (930, 932, 935, 938-940, 943, 946, 947, 951-953, 970)

Response:

The Department disagrees. Downgradient monitoring points are required on all placement sites. In some situations it may not be practical or possible to site upgradient wells outside of the coal ash placement area. The Department can use other comparative sampling results, such as background data to evaluate water quality in these cases.

209. Comment:

The first two sentences of § 290.302(a)(2) should be deleted and replaced with the following: "The number of downgradient monitoring points and their locations will depend upon the configuration of the coal ash placement area, the volume of coal ash

placed, the size of the ash placement area, and the hydrogeologic conditions at the site". The commentator notes that the Pennsylvania Residual Waste Regulations normally require a minimum of three downgradient monitoring wells for the permitting of residual waste disposal facilities. However, it is stressed that the "quality" of the downgradient monitoring wells (i.e. proper placement within the target monitoring zone) is the more important factor than the "quantity" of downgradient monitoring wells. For example, in the anthracite region of Pennsylvania, the majority of coal ash placement sites are abandoned mine lands located directly above "mine pool" groundwater systems. These systems are dominated by "conduit" or "channelized" groundwater flow paths created by past deep mining activities. Therefore, these types of groundwater flow systems normally exhibit quite different characteristics than the types of groundwater flow systems encountered under the majority of permitted residual waste disposal facilities in Pennsylvania. In this regard, one well, if properly placed within the dominant flow path of the mine pool system, can detect contamination as efficiently as three wells that have been placed to simply satisfy a quantity requirement.

At the same time, it is acknowledged that some coal ash placement sites are underlain by [illegible]ool flow systems that contain more than one dominant flow path, and as such, [illegible] additional downgradient wells will be required at these types of sites.

Finally, a concern arises in that DEP regulatory staff will require three downgradient wells to be installed simply to satisfy the regulation even if it can be shown to the department's satisfaction that less then three wells can adequately monitor groundwater conditions downgradient of the site. (1)

Section 290.302(a)(2) increases the number of downgradient monitoring points from two to three. DEP has not provided enough justification for the random increase in monitoring points. We believe the number of downgradient monitoring points should be one for each downgradient direction of groundwater flow. (948)

While the preamble to the proposed regulations infers that on a case-by-case basis, a beneficial use site may have less than three downgradient monitoring points, § 290.302(a)(2) clearly states that "at least" three will always be required. This section does not provide any exception to the rule. This section should be revised to allow a case-by-case determination of the required number of downgradient monitoring points. (4)

The requirement in § 290.302(a)(2) for three downgradient monitoring wells is too stringent and prescriptive. The number of downgradient wells should be based on the ability to correctly capture the characteristics of the downgradient water. DEP should rewrite this section to mandate one and to allow for the discretion of more if needed. (945)

Response:

It is acknowledged that characteristics of each site are unique; however, a minimum number of points is necessary to avoid arbitrary choices and incorrect assumptions by the applicant that, perhaps, only one point is needed. A single monitoring point does not provide a sufficient comparison. A comprehensive assessment of the water quality is a benefit to both the operator and the public.

210. Comment:

Section 290.302(a)(3) indicates the water quality monitoring system must include surface water monitoring points approved by DEP. There should not be a requirement for surface water monitoring points, especially if none are within any reasonable range of the ash placement site. This should be re-worded to include surface water monitoring points at the department's discretion, but again not be a requirement. (1)

Response:

The Department has modified the language in the final-form regulations such that surface monitoring points may be required for surface waters located on the site or within the adjacent area.

211. Comment:

Section 290 302(b)(3) indicates that wells are to be "Located within 200 feet of the coal ash placement area, except as necessary to comply with subsection (c), and located at the points of compliance." It should be noted that in some specific instances, it will not be probable to locate wells within 200 feet of the coal ash placement area, especially those instances in which abandoned underlying mine workings directly downgradient of the site may not be flooded, but are in fact "dry" thus making a well within this zone useless. This paragraph should be revised to allow discretion in where permittees will place the points based on approval by the Department. (1)

Section 290.302(b)(3) requires three downgradient wells be "within 200 feet of the coal ash placement area" without exception. This is not essential to insure protection of groundwater and surface water and, in many cases, will be impossible to achieve. In many cases due to previous mining, the hydrogeological structure beneath the abandoned sites has been completely affected and a single monitoring point is adequate to monitor the placement of coal ash. This section should be revised to eliminate or provide an exception to the 200 foot limit. (4)

Section 290.302(a)(1)-(3) requires monitoring wells to be located within 200 feet of the coal ash placement area. This requirement may result in monitoring wells being drilled within active mining areas and would, therefore, be disturbing active mining areas. PCA suggests the 200 foot limit be tied to the disturbed area from mining or coal ash placement operations. (948)

The requirement in § 290.302(b)(3) for three downgradient monitoring within 200 feet of the coal ash placement area is too stringent and prescriptive. I suggest replacing "within 200 feet" with "in close proximity." (945)

At waste coal sites, placement of downgradient monitoring wells within 200 feet may place them in the mining or reprocessing area itself and is not feasible or advisable. The commentator suggested language for active mining sites that would require the downgradient monitoring wells to be located within 200 feet of the mining and coal ash placement area. (966)

Response:

The requirement that wells be located within 200 feet of coal ash placement has been changed to approve locations at a greater distance based on hydrology of the site.

212. Comment:

'lity monitoring systems must include a monitoring well placed directly in immerified coal ash to monitor local pore water and assess field leaching behavior. (969, 1121)

Response:

Ash is essentially nonporous and placed above the water table. A well placed in the ash fill would be effectively dry and prohibit collection of any pore water. No scientific justification has been presented that would indicate that this type of monitoring point would be useful. Also, equipment used to place and compact the coal ash can easily damage the well, effectively ending monitoring at that point. Water quality monitoring plans are implemented to monitor potential offsite groundwater and surface water resources. Monitoring poor water does not advance that objective.

<u>§ 290.303</u>

213. Comment:

Section 290.303(a)(4) indicates: "The well shall be filter-packed with chemically inert clean quartz sand, silica, or glass beads. The material shall be well-rounded and dimensionally stable." Please note that this should be deleted as this can not be done with a well screen in which the target zone being monitored is within a mine void. Well screens placed in these types of settings normally utilize a grout basket placed at a level above the well screen. (1)

Response:

The final-form regulations allow the Department to exempt this requirement as appropriate.

§ 290.304

214. Comment:

The requirements for assessment contained in § 290.304 are quite costly. (966)

Response:

The Department acknowledges the comment.

215. Comment:

What is an assessment plan? We recommend that this term be defined. (1120)

Response:

The purpose and requirements of an assessment plan are described in § 290.304. Modifications to the language in this section have been made to further define and clarify the elements of an assessment plan.

216. Comment:

If a monitoring point shows higher levels of contaminants than prior to ash placement, it should trigger a requirement to investigate the causes of those increases. (5-90, 92-123, 125-251, 253-302, 304-338, 340-428, 430-446, 448-478, 480-503, 505-514, 516-574, 576-601, 603-904, 906-925, 930, 932, 935, 938-940, 943, 946, 947, 951-953, 970)

Response:

Section 290.304 has been changed to better define what would trigger assessment. Subsection 290.304(a)(1) has been changed to specify "statistically significant degradation." Statistical evaluation of water quality monitoring data shall be made using one or more of the methods in 30 CFR § § 258.53(g) and (h).

217. Comment:

This section is ambiguous using words like "significant" and "activities unrelated to coal ash placement." These terms are not defined in any way so that definitive quantitative judgments can be made or anticipated. (935, 945)

The anthracite coal mining region is littered with thousands of miles of underground tunnels creating enormous drainage areas. As a result, changes in hydrology can occur as a result of storm water diversions, wildcat sewers, combined sewer overflows leaking into the drainage system. Illegal dumping of trash can create short term and negative impacts on water quality in a particular area as well. Breaches in barrier pillars are

known to occur at times, major rain events, major snow melts could all result in increased flows and temporarily impact water at an ash placement site. We believe the regulations should include a better definition of "significant change" and how long of duration that "significant change" lasts before the need to submit and implement an assessment plan occurs. (965, 1115)

An assessment plan is required under § 290.304(a)(1) if a "significant change" in water quality has occurred. This standard is vague. The final-form regulation needs to contain a measurable standard. (1120)

Response:

Language has been added to § 290.304(a)(1) to specify "statistically significant," which is a recognized term of art. Additionally, the statistical protocols have been defined as those accepted by EPA and codified at 40 CFR § 258.53(g) and (h).

218. Comment:

Section 290.304(a)(1) requires assessment if monitoring indicates a significant change is observed in the monitoring data. The groundwater at most of these sites has already been degraded by past activities. Since the placement of coal ash and reclamation of these sites may change the water quality to the benefit of the environment, the language should be modified to indicate the change must be statistically significant and detrimental. (945, 962, 1095)

Would an assessment plan be required if the "significant change" is a change that improved water quality? (1120)

If sufficient data exist, then an analysis should be used to evaluate the change. If insufficient data are available, then the qualitative criterion that will be used should be defined. (1121)

Response:

The Department agrees and has changed the final-form regulations to indicate the change would be detrimental to trigger an assessment plan. Collection of baseline data will assure sufficient data is available for a quantitative assessment. The addition of improved water quality monitoring networks and evaluation of water quality trends will assure detection of pollution, should it occur.

219. Comment:

The characteristics and relative risks posed by an individual constituent – coupled with the likelihood of a human receptor near a particular site – should dictate whether or not the concentration of that constituent should trigger the need to conduct an "assessment." (1095)

Are the changes that would require an assessment plan tied to actual risks to the public health? (1120)

Response:

A statistically significant degradation and water quality will trigger an assessment plan that degradation is based on baseline water quality data collected for the site. This approach with baseline data is protective of public health and safety and the environment.

220. Comment:

We believe the overall intent of § 290.304(a)(1), (b)(2), (c)(1) and (d)-(f) is to define the impact from the placement of coal ash on water quality. We suggest adding "as a result of coal ash placement" in all these subsections. (948)

Response:

The Department does not agree the suggested language is needed, since § 290.304(b)(2) indicates an assessment is not required when it can be shown that the degradation was caused by activities unrelated to the placement of coal ash.

221. Comment:

The standard for triggering an assessment of water contamination remains unclear in the proposed regulations and thus does not assure that increases in contaminant concentrations beyond baseline concentrations will be investigated in time to prevent serious damage from occurring. A "significant change in the quality of groundwater or surface water from background levels" is too vague to reliably trigger corrective action requirements in time to prevent full-scale contamination of offsite water supplies. We recommend a standard keyed to the measurement of a concentration for an ash parameter at a downgradient ash monitoring point that exceeds the highest background concentration measured for that parameter at the same monitoring point. An exceedance of the highest background concentration at a downgradient ash monitoring point should be the simple trigger for requiring investigation of contaminant increases. Consequently, the residual waste regulations at § 288.256(a) require a groundwater assessment within 60 days of any PADEP or operator monitoring data indicating "groundwater degradation"—defined as monitoring that indicates a measurable increase in the concentration of one or more contaminants in groundwater above background levels. This process is more lenient than existing regulations that apply to coal ash landfills. (956, 971)

A groundwater assessment plan should be submitted within 60 days after a concentration of a toxic metal or other ash constituent exceeds the highest baseline concentration (pre-permit concentration) at a down-gradient monitoring point. The rules should require that confirmed measurements of pollutant levels at a down-gradient ash monitoring point that

are higher than levels prior to ash placement *will* trigger the requirement to investigate the causes of those increases in an "assessment plan." (956)

The proposed regulations provide too much latitude in triggering assessment and abatement plans. (1102)

Response:

The term "groundwater degradation" as defined in § 287.1, applies to this chapter, since Chapter 290 is part of the residual waste regulations. Language has been added to § 290.304(a)(1) to refer to statistically significant degradation and references federal guidelines for statistical methods. The Department retains the ability to use professional discretion in evaluating monitoring data, such as spotting trends of the groundwater where the constituents do not yet exceed the highest baseline measurement but a problem may be occurring.

222. Comment:

The studies associated with the risks posed by various constituents in coal ash are reflected in drinking water standards and associated MCLs. Those constituents (e.g. mercury) that have been determined, through intensive study and evaluation, to have potential to present significant risks are assigned primary MCLs. Constituents not deemed to present such risks (e.g. iron) are given secondary MCLs. Act 2 reflects this very relationship. Therefore, the inorganic constituents found in Appendix A, Table 4 of Chapter 250 should dictate which of the monitored constituents be considered for completion of an assessment. (1095)

Response:

The Department does not agree that the assessment triggers should be limited to the inorganic constituents found in Appendix A, Table 4 or Chapter 250.

223. Comment:

Reference should be made to changes in specified constituents at one or more of the downgradient monitoring points. (1095)

Response:

The Department has provided in the regulations a list of all constituents to be monitored.

224. Comment:

The submission of the assessment plan should not be waived by resampling or demonstrations asserting seasonal variations or sources other than ash are responsible, if

a third such exceedance occurs above the highest baseline concentration for a parameter at the same down-gradient monitoring point. (956)

Response:

Section 290.304(b) only provides the "person" one opportunity to explain the exceedance as not related to coal ash placement prior to the requirement for an assessment. This section is not intended to provide multiple chances to explain high values.

225. Comment:

Section 290.304(b)(1) allows resampling within ten working days from obtaining the results from the initial sampling that indicate water degradation. An assessment plan is not required if the results of the resampling demonstrates to DEP within that ten working day period that water degradation has not occurred. Resampling of the well and surface water can take up to ten working days. The ten working days timeframe is too short and should be changed to twenty. (945)

Response:

The Department has used the ten working day timeframe for resampling and submitting the results successfully for other types of waste placement, such as at residual waste landfills. While ten working days is relatively short, the Department must proceed as though the degredation is real: therefore, expedient action is needed.

226. Comment:

Section 290.304(b)(1) gives DEP too much discretion to ignore data that may indicate a serious contamination problem. If a first concentration is measured at a monitoring point above the highest background concentrations and resampling obviates the requirement to conduct a groundwater assessment, the regulations should ensure that a subsequent measurement above the highest background concentration at the same monitoring point would trigger the need for a groundwater assessment without the option to resample. (971)

Response:

Resampling is standard scientific/investigative practice used to rule out human or lab error.

227. Comment:

We believe the limited number of days to respond is not sufficient to adequately review the data, corresponding site conditions and related variables and respond appropriately. (966)

Response:

The Department has used the ten working day timeframe for resampling and submitting the results and the twenty working day timeframe for demonstrating degradation is due to seasonal effect successfully for other types of waste placement, such as at residual waste landfills. While ten working days is relatively short, the Department must proceed as though the degredation is real: therefore, expedient action is needed.

228. Comment:

The requisite evidence to make such a demonstration should be further defined in § 290.304(b)(2). (971)

Response:

It is not possible to list all possible sources of data that could be used to make such a demonstration.

229. Comment:

How can an operator demonstrate within 20 days under § 290.304(b)(2) that the degradation was caused entirely by seasonal variations as seasonal variations occur over a three to four month period? (1121)

Response:

The 20-day time period for determining the degradation is caused by seasonal variations is found in other sections of the residual waste regulations and has been used successfully by the regulated community. An environmental professional that considers the data can refer to the site hydrology, the background data and precipitation data to make this judgment. If the problem is complicated, the Department can allow for reasonable extensions to be made after discussion occurs within the 20 days specified.

230. Comment:

Section 290.304(b)(2) allows a demonstration that sample results indicating water degradation are due to seasonal variation. An assessment plan is not required if this demonstration is made to DEP within that twenty working day period. Analysis and demonstration could require more than twenty working days. The twenty working days timeframe is too short and should be changed to forty. (945)

Response:

The Department has used the twenty working day timeframe for making this demonstration successfully for other types of waste placement, such as at residual waste

landfills. While twenty working days is relatively short, the Department must proceed as though the degredation is real: therefore, expedient action is needed.

231. Comment:

We are concerned that the word "entirely" in § 290.304(b)(2) could be interpreted in a way that creates an insurmountable burden of proof, since it is impossible to prove that there is zero influence of ash placement on the water quality. The commentator provided suggested language for § 290.304(b)(2) that would increase the time to demonstrate that the degradation was not caused by coal ash placement to 45 days, removes the word "entirely" and adds that an assessment would not have to be done if the degradation was caused "from mining operations or other influences unrelated to coal ash placement. (966)

Response:

The word "entirely" has been removed from this subsection. An assessment is required to determine the source of the degradation. If ash is not the cause, the assessment must suggest an alternative, reasonable cause supported by evidence.

The Department has used the twenty working day timeframe for making this demonstration successfully for other types of waste placement, such as at residual waste landfills. While twenty working days is relatively short, the Department must proceed as though the degredation is real: therefore, expedient action is needed.

232. Comment:

Section 290.304(c) requires the assessment plan to be prepared and sealed by a licensed professional geologist. Suggest that DEP determine if a "licensed professional geologist" is really needed for the assessment plan. (945)

Response:

The Department considers this work as the practice of geology as defined under Act 367. Therefore, a licensed individual is required.

233. Comment:

Section 290.304(c)(5) should also specify the material damage that is prohibited under the permit. (971)

Response:

The term "material damage" is not used in these regulations. The definition for "materially damage the quantity and quality of water" is given under the federal statute

for Surface Mining Reclamation and Enforcement (30 CFR § 701.5) in reference only to alluvial valleys and the capability of farming.

234. Comment:

Section 290.304(d) requires implementation of the assessment plan and completion of the assessment within six months, unless otherwise approved by DEP. The six month timeframe is too short. In order to conduct a proper assessment, more time is needed. The six months should be changed to twelve months. (945)

Response:

Assessment plans should be implemented as soon as possible so that, if on-site water degradation is found during the assessment, corrective measures can be taken before it becomes an off-site problem. DEP has used the six month timeframe successfully for other types of waste placement, such as at residual waste landfills. § 290.304(d) allows DEP to approve a longer timeframe in cases where the assessment cannot be completed months or a shorter timeframe where a more imminent threat exists.

235. Comment:

If surface water quality is degraded, then a biological assessment must be included in the assessment plan in accordance with the protocols of DEP's Office of Water Management, to determine if degraded water quality has impaired the aquatic community. (1121)

Response:

Biological assessment has been added to the final-form regulations.

<u>§ 290.305</u>

236. Comment:

These regulations should base all corrective action steps on clear standards that third parties such as effected [*sic*] citizens and communities can understand and enforce. (971)

Response:

While that is a very desirable goal, this is an unavoidably technical subject that requires scientific background and expertise to understand. The Department makes every effort to write rules and technical guidance in plain language so that it is clear and understandable. Technical guidance documents are written to further explain and clarify the regulations and are helpful with regards to interpreting how the regulations are applied. Guidance is subject to public comment as well.

237. Comment:

We believe the overall intent of § 290.305(a) is to define the impact from the placement of coal ash on water quality. We suggest adding "as a result of coal ash placement" in this subsection. (948)

Response:

It is understood that the impact is from coal ash so clarification in this section is not necessary.

238. Comment:

The language in § 290.305(a)(1) should be revised to indicate that the degradation must be statistically significant. (962, 1095)

Response:

The final regulations have been changed at § 290.304(a)(1) to state that a determination of degradation must be statistically significant.

239. Comment:

Section 290.305 must clearly emphasize that the abatement plan is prepared only in the event that statistically significant water quality degradation as a result of ash placement occurs. As written, the draft rule can be interpreted to broadly impute abatement obligations if the monitored constituents increase regardless of source. (966)

Response:

When an abatement standard is exceeded at a compliance point, the problem needs to be addressed, whether it is caused by ash placement, mining operations, or another activity at the site. If upgradient monitoring demonstrates that the contamination is coming from off-site, the Department will look elsewhere for the source and abatement.

240. Comment:

Section 290.305(a)(2) allows the entire assessment plan to be bypassed if an abatement standard is exceeded at one or more compliance points. A detailed assessment is needed to correctly determine if abatement is needed. § 290.305(a)(2) should be deleted. (945)

Response:

Exceedance of an abatement standard is a significant event and prompt action must be implemented to correct the situation.

241. Comment:

Section 290.305(b) requires the abatement plan to be prepared and sealed by a licensed professional geologist. Suggest that DEP determine if a "licensed professional geologist" is really needed for the abatement plan. (945)

Response:

The Department considers this work as the practice of geology as defined under Act 367. Therefore, a licensed individual is required.

242. Comment:

The abatement standards that are being met inside the permit area should be set at locations and concentrations that provide a margin of safety in ensuring that material damage beyond the permit boundary is avoided altogether. Therefore, if the only abatement standards for groundwater are located at the property boundary and based on drinking water standards or other health standards, this objective will not be accomplished. § 290.305(c) should require that the operator verify under the abatement plan that material damage as defined in the permit is not occurring in offsite groundwater or surface water or if such violation is occurring, that it has been permanently abated. Accordingly, the monitoring under the assessment and abatement plans must sample all offsite private and public water supplies and surface waters which have any reasonable potential to be impacted by the contamination. (971)

Response:

Permits for large-scale ash placement are not typically used in places where water supplies are nearby or where the background water quality meets drinking water standards. The standards here are reflective of the current standards for waste permits and they are appropriate. Compliance points in § 290.305(c) are set at 500 feet or the property boundary, whichever is closer. If the abatement standards are not exceeded at the compliance points, off-site public and private water supplies will be protected. In event the abatement standards are exceeded at the compliance points, DEP would routinely require sampling of any water supplies that could potentially be impacted.

Mining regulations provide additional provisions for protection of the hydrologic balance, for example 25 Pa. Code Chapters 87 and 88, §§ 87.101 and 88.91, which pertain to bituminous and anthracite mines respectively. Evaluation of risks to water supplies is a routine and important part of the permit application review process. Water supplies that may be at risk are incorporated into the post-issuance monitoring program. The mining regulations provide protection of domestic and public water supplies (see 25 Pa. Code Chapters 87, 88, 89, and 90, §§ 87.47, 87.119, 88.27, 88.107, 88.207, 88.381, 89.145a, and 90.116a). Impacts to water supplies as a result of coal ash placement are unlikely. Most coal ash placement sites occur at abandoned mine sites with degraded groundwater and surface water resources that are not potable.

243. Comment:

The list of standards that must be met under § 290.305(c) does not include ambient water quality criteria for aquatic life, which would be the appropriate standards for surface water abatement. If the aquatic community were impaired, then biological stream monitoring must be used to demonstrate that abatement successfully restored the stream to reference conditions. (1121)

Response:

Biological monitoring and abatement for surface water have been added to the final-form regulations.

244. Comment:

Section 290.305(c)(1)-(3) requires compliance with abatement standards at 500 feet from the placement area or at the property boundary, whichever is closer. Compliance with abatement standards should apply at the property boundary alone. § 290.305(d) provides a waiver for the 500 feet for secondary contaminants. (945)

Response:

While one goal of abatement is to prevent degradation from reaching off-site locations, prevention of degradation from spreading across a large site is also important to future land use at the site.

245. Comment:

"Baseline" should be substituted for "background" in § 290.305(c)(2). (1095)

Response:

The term "background" is used in other, similar parts of the residual waste regulations and is retained here for consistency.

246. Comment:

Section 290.305(c)(3)(ii) references "Department guidelines for assessing the health risks of environmental pollutants." A more specific reference would assist the regulated community in complying with the regulation. (1120)

Response:

This reference has been changed in the final-form regulations to indicate the health risk assessment portions of the Land Recycling Program Technical Guidance Manual (253-

0300-100) or other standard procedures commonly used in the environmental field to assess risk of environmental pollutants.

247. Comment:

When secondary MCLs or other non-health based standards in groundwater are exceeded, abatement requirements should not be triggered automatically, but should be considered in relationship to the overall environmental and public safety improvements resulting from the use of coal ash. (962, 1113)

Response:

When there is no primary MCL, the abatement standard is primarily developed based on health risks under § 290.305(c)(3).

248. Comment:

§ 290.305(d), a person should also be able to demonstrate that the degradation is inconsequential based on a previously approved demonstration under § 290.201(b)(3). (962)

Response:

The Department disagrees that exceedance from secondary MCLs is inconsequential. Section 290.201(b)(3) relates to certification standards of ash and is unrelated to § 290.305(d).

249. Comment:

Under the proposed section, compliance points are either at 500 feet from the perimeter of ash placement or the property boundary, whichever is closer. The abatement standards can be Statewide Health Standards (SHS), background standards, or risk-based [illegible] which assume the presence of human receptors at the property boundary. These prescriptive requirements may grossly misrepresent actual health risks (if any) posed by the beneficial placement of ash and may result in expensive efforts that produce no tangible results. The requirement to abate already highly impaired water resources to drinking water or risk-based standards seems inappropriate, if not impossible. We strongly recommend modifying § 290.305 such that coal ash placement at mining sites with pre-existing discharges only be subject to the abatement standards based on background, the compliance point for standards based on SHS or primary MCLs be at the nearest residence or drinking water well or water supply intake, and the compliance point for risk-based standards be the nearest point of actual human receptors. (966)

Response:

In this case, the background standard reflects the pre-existing contamination. Abatement standards, such as those based on SHS, may be appropriate for contaminants that were not elevated due to the pre-existing contamination.

A goal in setting compliance points where they are in these regulations is to prevent on-site problems from becoming off-site problems. If the compliance points were made at the nearest water source or nearest point of human receptors, abatement would only occur after off-site harm to people did occur.

250. Comment:

Section 290.305 (d) should define "secondary contaminants" more clearly. These advisories should not be exceeded in water beyond the ash placement area by application of the secondary standard at a more distant compliance point beyond 500 feet from the ash placement area. (971)

Response:

The term "secondary contaminants" is defined in § 287.1. Since secondary contaminants have secondary MCLs, which are not health-based, it may be appropriate to approve a greater distance than 500 feet under some circumstances. For example, when the coal ash placement area owner's property extends to a distance greater than 500 feet, the compliance point distance can be extended.

251. Comment:

We acknowledge that site conditions will dictate the appropriate abatement strategy. However, this chapter provides no guidance on successful abatement techniques. If hundreds of acres are to be filled over the next ten years, then it is prudent to know in advance that are available to curtail contaminant leaching from coal ash over large areas in a cost effective manner. In addition, the cost of curtailment techniques must be calculated in order to set bonds high enough to ensure funding if curtailment is needed. (1121)

Response:

There is a difference between guidance, which gives recommendations, and regulations, which give enforceable requirements. Putting "successful abatement techniques" into the final-form regulations would restrict the regulated community from using other acceptable techniques. Newer, improved techniques would not be able to be utilized. Since DEP reviews abatement plans and can make changes, specifying the abatement methods in regulation would unwisely limit the abatement options.

There is not a bond to cover abatement costs because contamination is not anticipated. In the unlikely event that monitoring indicates surface water or groundwater contamination is occurring, DEP can require financial assurance.

Subchapter E

252. Comment:

It is not clear what specifically triggers the storage requirements in this subchapter. Coal ash may not be used by smaller construction projects if the material must be stored in compliance with this subchapter. (1120)

Response:

Generally any storage of coal ash should follow the requirements of the subchapter, which are designed to minimize nuisances and degradation of surface water and groundwater. At most beneficial use sites, the coal ash will not be stored, as placement will occur soon after the ash arrives. However, temporary storage may occur, especially at some of the smaller project sites. The final-form regulations allow temporary storage up to 14 days in piles, as long as § 290.405(a) and (b) are met.

253. Comment:

The distinctions within this subchapter are confusing. For example, what is the difference between § 290.401(a) that affects "a person storing coal ash ..." and § 290.405(a) that affects "a person storing coal ash in piles ..."? What volume constitutes a pile? (1120)

Response:

Section 290.401(a) provides general requirements. Section 290.405(a) is purely an operational requirement.

The Department has not placed a minimum volume needed before a storage unit is considered to be a "pile." The term "pile" describes the manner in which the coal is placed outside of a storage container, storage tank or impoundment and is not intended to indicate the volume of coal ash.

§ 290.401

254. Comment:

It is not clear in § 290.401(a) what is meant by requiring the person to "employ best engineering and design and construction practices." If the design and operation practices must be certified by a registered professional engineer, the regulation should directly state that requirement. This subsection should be amended to provide a clear standard. (1120)

Response:

This language is standard language taken from the design and construction requirements for residual waste storage in § 299.112(a) and has not been problematic for the Department or the regulated community. The intent is neither to require storage unit design and construction be certified by a licensed professional engineer nor to put onerous, strict requirements in this general subsection.

255. Comment:

Section 290.401(d) requires the person storing coal ash to "routinely" inspect facilities and equipment. This requirement is vague. A more precise requirement is needed so the regulated community can comply and DEP can enforce the regulation. (1120)

Response:

This language is standard language taken from the design and construction requirements for residual waste storage in § 299.112(c) and has not been problematic for the Department or the regulated community.

§ 290.402

256. Comment:

I do not understand how coal ash stored contrary to the requirements in § 290.402(a)-(c) can be reclassified as waste under § 290.402(d) and the storage area classified as a waste disposal facility. Suggest changing this to instead require the person to conduct an abatement plan under § 290.305. (945)

Response:

Only coal ash that is beneficially used is exempt from the definition of solid waste under SWMA. Therefore, once the coal ash is no longer being beneficially used, it becomes a solid waste and must be managed as a solid waste. If coal ash is not being managed in accordance with the requirements, it is a residual waste, which includes waste from an industrial activity.

257. Comment:

The beneficial uses in Subchapter B require a short time (24 or 48 hours) to place the ash or store in accordance with Subchapter E. For smaller construction projects involving placement of small quantities of coal ash over a short duration, the requirements of Subchapter E are overly burdensome and will prevent the beneficial use of smaller quantities of coal ash. We suggest that § 290.402(c)(2) be revised to allow temporary storage on stabilized surfaces (not impermeable floors or pads) with the piles being covered with water resistant tarps to prevent the infiltration of water trough the piles. (959)

Response:

The final-form regulations allow temporary storage up to 14 days in piles, as long as § 290.405(a) and (b) are met. However, storage at the placement site must not exceed the time limits for spreading and compaction or incorporation in Subchapter B.

258. Comment:

Language should be added to indicate that a groundwater source is a drinking water source in § 290.404(a)(2) (962)

Response:

The terminology used is "groundwater water source," which refers to a groundwater drinking water supply. The term "water source" is currently defined in § 287.1.

259. Comment:

The term "significant quantity" used in § 290.402(b)(1) is vague. Reference to a more precise amount should be included in the final-form regulation. (1120)

Response:

Section 290.402(b) has been deleted. All of the storage requirements are contained in § 290.402(a). The issue of duration of storage for anti-skid material is addressed in § 290.402(a).

260. Comment:

Clarify § 290.402(c)(1) by replacing "previous year" with "previous twelve calendar months." (1095)

Response:

"Previous year" has been replaced with "previous calendar year commencing on January 1" in the final-form regulations.

261. Comment:

The term "operational records that are sufficiently detailed to demonstrate to the Department" used in § 290.402(e) is subjective and vague. The regulation should be amended to provide a clear standard for compliance and enforcement. (1120)

Response:

This language is standard language taken from the duration of storage requirements for residual waste in § 299.113(c) and has not been problematic for the Department or the regulated community. It allows the operator to determine the means by which its activities are recorded, since business practices and site characteristics may vary.

262. Comment:

Under § 290.402(f), what "other requirement" does the regulation refer to? This is vague and may lead to enforcement of provisions not in the regulations. We recommend deleting this phrase. (1120)

Response:

This subsection has been removed from the final-form regulations.

§ 290.403

263. Comment:

Section 290.403(c) should also prohibit storage in a manner that causes surface water degradation. (1121)

Response:

This suggested recommendation has been incorporated into the final-form regulations.

§ 290.404

264. Comment:

DEP should define the term "impoundment" to clarify its meaning in these regulations. (945)

Response:

The term "impoundment" is defined in § 287.1.

265. Comment:

Coal ash stored in an enclosed facility with an impermeable floor should be exempt from the restrictions in § 290.404(a). (1095)

Response:

This suggested recommendation has been incorporated into the final-form regulations.

266. Comment:

Section 290.404(b)(2) prohibits storage of coal ash within 300 feet of a groundwater water source. Since rainwater recharges groundwater, would all areas that receive rainwater be a groundwater source? Suggest DEP re-evaluate this section and clarify its meaning. (945)

It should be specified that "groundwater water source" refers to groundwater that is used as a source of drinking water. (1095)

Response:

The term "water source" is defined in § 287.1 and is limited to water for human consumption. The requirement only prohibits storage within 300 feet of a well used as a drinking water source.

267. Comment:

Under § 290.404(b)(6), how can it be determined whether a particular geologic study is "competent"? Would certification by a licensed geologist qualify? (1120)

Response:

The requirement is that the study must be certified by a PA registered professional geologist in the final-form regulations.

268. Comment:

Sections 290.404(b)(9) and (10), allow waivers relating to public water supplies and properties. We suggest requiring public notice of the intent to allow these waivers so that people who may be affected have their opportunity to provide their input or consent prior to placement of the coal ash. (1120)

Response:

The waivers for public water for source and school, park and playground have been removed from the final-form regulations.

269. Comment:

Section 290.404(b) fails to consider the existence of previously approved/permitted storage impoundments. (1095)

How will this regulation be administered for existing coal ash storage and impoundments? (1120)

Response:

The final-form rulemaking includes transition periods for requirements not already in effect and the effective date of these regulations.

§ 290.405

270. Comment:

It is impossible to "prevent" the dispersal of material at all times, especially under abnormal weather conditions. The commentator suggests replacing "prevent the dispersal of coal ash" with "minimize the off-site dispersion of coal ash." (1095)

Response:

The Department has replaced the word "prevent" with "minimize" in the final-form regulations.

271. Comment:

Section 290.405(b) provides a waiver of the four-foot water table separation distance for storage piles. Piles of coal ash that are not stabilized or compacted have a much greater potential for leaching. The eight feet minimum separation from groundwater should not be relaxed for storage piles. (1121)

Response:

The waiver language for residual waste storage piles, which is already in the regulations, has not caused problems and is retained in the final-form regulations. The waiver may be appropriate where piles will be very temporary and very small.

272. Comment:

Section 290.405(b) should be specifically waived for storage piles placed on an impermeable pad or liner. (1095)

Response:

While it may be appropriate to waive the separation distance from the water table for many storage piles placed on a pad or liner, there are other times when site-specific considerations would indicate this waiver is not appropriate. The waiver language allows the Department to evaluate the site conditions in determining if this separation distance from the water table is necessary.

273. Comment:

Section 290.405(d) should require water quality monitoring for all storage piles that lack a liner or storage pad. (1121)

Response:

Many of the storage piles will be short in duration and contain very limited quantities of coal ash, such as at a construction site where coal ash is used for pipe bedding or bottom ash used as antiskid. Requiring either water quality monitoring or a liner or pad would not result in any environmental benefit and would be overly burdensome.

§ 290.407

274. Comment:

Section 290.407(a) should recognize the leachate and runoff can also be directed to a treatment system. This clarification should be added. (1095)

Response:

The final-form regulation allows leachate to be diverted into a leachate storage or treatment system.

§ 290.410

275. Comment:

Section 290.410 (4) uses the vague term "rapidly." "Rapidly" should be replaced with a clear standard. (1120)

Response:

The language in this subsection is consistent with the language used for residual waste storage impoundments and has not presented difficulties to the regulated community or the Department.

276. Comment:

It is not clear how the liner standard in § 290.410 (5)(i) would be applied to existing storage impoundments. (1120)

Response:

The final rulemaking includes transition periods for requirements not already in effect at the effective date of these regulations.

277. Comment:

Section 290.410 (10)(i) and (vii) set design requirements to prevent overtopping for a 24-hour event on the 25-year cycle. However, climate change models and recent data indicate that storms will occur of greater intensity than we have experienced in the past century. It is likely that the volume of water that used to be associated with a 25-year event will be seen much more frequently. DEP should require sufficient freeboard for the predicted 25 percent increase in peak flows and two additional storm events per year with greater than two inches of rain. (1121)

Response:

The required minimum two feet of free board is a standard industry design and practice and should effectively manage these storm events. There should be no contributing drainage because the impoundment is designed to prevent or minimize surface water run-on from offsite areas.

§ 290.411

278. Comment:

The bottom two feet of fencing in §290.411 should be made impermeable to wildlife using a tightly woven material, such as silt fencing, to prevent amphibians from breeding in contaminated water in the impoundments. (1121)

Response:

The purpose of this fencing requirement is to prevent access by unauthorized persons as a matter of public safety. It is not practical to construct a fence around a coal ash storage impoundment capable of keeping wildlife, including amphibians, away from the impoundment area.

§ 290.412

279. Comment:

Section 290.412(a) requires notice to DEP upon failure of an impoundment, but does not require public notice. Should the public be notified if a storage impoundment fails and could cause problems beyond its boundaries? (1120)

Response:

In the event of a failure of a coal ash storage impoundment that could threaten public health, the Department will notify the public.

FEE REPORT FORM

Agency: Bureau of Waste Management
Department of Environmental Protection

Contact: Steve Socash, Chief
Division of Municipal and Residual Waste
Bureau of Waste Management

Phone: 717- 787- 7381

Fee Collections:	Current and Prior Years	Fiscal Year 2010/11 (Anticipated)	Fiscal Year 2011/12 Projected	Fiscal Year 2012/13 Projected
Current – Total	$0	$0		
Proposed— Total			$75,000	$75,000

FEE TITLE AND RATE:

Title: Beneficial Use of Coal Ash at Mine Sites Fee Schedule

Current Fee Schedule:
There are no current fees for the beneficial use of coal ash.

Proposed Fee Schedule:
The proposed fees would be in accordance with the following schedule and must accompany an application for the beneficial use of coal ash, and are payable annually thereafter. The fees are as follows:

CATEGORY	FEE
Annual Fee from time of application through final ash placement at the mine site	$2,000
Annual Fee from the year following final placement of coal ash until final bond release for the coal mining activity site	$1,000

At least every 3 years, the Department will recommend regulatory changes to the fees in this section to the Environmental Quality Board (EQB) to address any disparity between the program income generated by the fees and program costs. The regulatory amendment will be based upon an evaluation of the fee income generated from the beneficial use of coal ash at mine sites program and the Department's costs to administer this program.

Fee Objective:

The fees have been calculated to cover the sample analysis costs to the Department to implement and administer the beneficial use of coal ash at mine sites program as authorized under Section 4(a) of SMCRA (52 P.S. §1396.4(a)).

Fee Related Activities and Costs:

Activities supported by the fees associated with the beneficial use of coal ash at mine sites program include the following:

a) On-site sampling of coal ash
b) Coal ash sample preparation
c) Coal ash sample analysis
d) On-site collection of water monitoring samples
e) Water monitoring sample preparation
f) Water monitoring sample analysis

Analysis:

Section 4(a) of SMCRA (52 P.S. §1396.4(a)) authorizes the Department to charge and collect a reasonable filing fee from persons submitting applications for a surface mining permit in order to cover the costs of reviewing and administering such permits. These fees are intended to reflect the costs of implementing and administering the beneficial use of coal ash at mine sites program. The beneficial use of coal ash at active mine sites may only be conducted in accordance with a mining permit, and the permit must specifically provide for such use.

The fee amount was calculated as follows. To assure compliance with the waste and mining regulations, the Department proposes to sample ash at a mine site during the active phase of ash use an average of two times per year and collect water samples from an average five monitoring points two times per year. The DEP Bureau of Laboratory's cost for analyzing ash is $450 per sample and their cost for water sample analyses is $314 per sample. The combined cost of ash sampling and water sampling per mine is $4,040 per year. The coal mining program is 50% federally funded. Thus, the state portion of the sample costs is $2,020, which has been rounded to $2,000 per year. After ash use has ceased, the Department intends to continue to sample the surface and ground water monitoring points. The reduced fee of $1,000 during this phase reflects the fact that samples of the ash will not be taken.

There are about 50 mine sites that will be impacted by this fee. The estimated cost of the beneficial use of coal ash at mine sites program for the first full fiscal year 2011/2012 is $75,000, and the projected revenue is $75,000. Thus, the estimated amount collected in revenue covers half the estimated cost of $150,000 for sample collection, with the other half being federally funded. The annual fees are based solely on the cost to prepare and analyze the samples. Field staff time is not accounted for under this fee structure.

Recommendation and Comment:

Approve the final-form regulations. This regulation was presented to the Solid Waste Advisory Committee (SWAC) on May 27, 2010. SWAC reviewed the rulemaking and supported moving the final rulemaking forward to the EQB for consideration.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
POLICY OFFICE

September 20, 2010

Mr. Kim Kaufman, Executive Director
Independent Regulatory Review Commission
14th Floor
333 Market Street
Harrisburg, PA 17120

Re: Final-Form Rulemaking – Beneficial Use of Coal Ash (#7-442)
Final-Form Rulemaking – Paper, Film and Foil Surface Coating Processes (#7-448)
Final-Form Rulemaking – Administration of the Land Recycling Program (#7-453)
Final-Form Rulemaking – Administration of the Uniform Environmental Covenants Act (#7-454)

Dear Mr. Kaufman:

Pursuant to Section 5.1(a) of the Regulatory Review Act, please find enclosed copies of four final-form rulemakings for review and comment by the Independent Regulatory Review Commission (IRRC). The Environmental Quality Board (EQB) approved these final-form rulemakings at its August 30, 2010, meeting.

The first final rulemaking enclosed, the **Beneficial Use of Coal Ash final rulemaking**, incorporates key provisions of the Department of Environmental Protection's (Department) policies and procedures on the beneficial use of coal ash through amendments to Chapter 287 and the introduction of a new Chapter 290. Prior to this rulemaking, the beneficial use of coal ash, including abandoned and active mine reclamation, was managed through existing residual waste regulations and Departmental technical guidance. In 2008, the Department proposed amendments to the following technical guidance documents: "Document Number 563-2112-225: Mine Site Approval for the Beneficial Use of Coal Ash," and "Document Number 563-2112-224: Certification Guidelines for the Chemical and Physical Properties of Coal Ash Beneficially Used at Mines." The most prevalent comment received during the public comment period on these technical guidance documents was that the content of each document should be placed in regulations rather than in Department technical guidance. In response, the Department has developed this rulemaking, which includes provisions of the aforementioned technical guidance documents and includes further enhancements to the residual waste regulations related to the beneficial use of coal ash.

Provisions of the rulemaking address the operating requirements necessary for the beneficial use of coal ash, including certification guidelines for the chemical and physical properties of coal ash, water quality monitoring at sites where coal ash is beneficially used, requirements for the storage of coal ash in piles and surface impoundments, and improvements in reporting requirements to track volumes and locations of sites where coal ash is beneficially reused. The

rulemaking also adopts recommendations by the National Academy of Sciences in their 2006 report, *Managing Coal Combustion Residues in Mines,* and includes an annual fee to offset Department costs for coal ash and water quality sampling and testing at mine sites were coal ash is beneficially used.

The proposed rulemaking was approved by the Board on July 21, 2009, and was published in the November 7, 2009, issue of the *Pennsylvania Bulletin* (39 *Pa.B.* 6429), where a 45-day public comment period was advertised as well as four public hearings. The Board received comments on the proposed rulemaking from over 1,100 commentators, including 13 industry organizations, 7 environmental groups, the Pennsylvania Chamber of Business and Industry, and the Independent Regulatory Review Commission (IRRC). Comments received on the rulemaking encompassed a broad range of viewpoints, including sentiments that additional requirements specified in the rulemaking are not needed and will be burdensome to industry and will discourage further beneficial use of coal ash. Other commentators recommended further strengthening the regulations, including eliminating provisions that provided the Department with discretion to issue waivers or modifications to certain requirements. Perceived by the public as potential "loopholes," most of these provisions were deleted in the final-form rulemaking. For example, the Department's ability to issue a waiver concerning the eight-foot separation distance requirement between coal ash and groundwater has been eliminated in the final-form rulemaking, except where coal ash is used for mine subsidence control, mine fire control or mine sealing pursuant to § 290.106(a)(7). In addition, the final rulemaking establishes a minimum number of monitoring points and the frequency for which water quality monitoring must be conducted; however, the Department retains the ability to require additional monitoring points and an increase in monitoring frequency. Some commentators expressed that a timeline should be given in the rulemaking for compliance with the new requirements. As a result, interim requirements have been added to the final-form rulemaking for water quality monitoring and storage requirements.

The Department initiated extensive outreach on the rulemaking. The Department met with industry groups representing both corporate energy facilities and independent power producers, including Reliant Energy, PPL, ARIPPA, and with various plant operators by request. The Department has also provided information on the rulemaking to the Pennsylvania Coal Association and the Pennsylvania Anthracite Council. The draft-final form regulations were presented to the Solid Waste Advisory Committee (SWAC) on May 27, 2010, and to the Citizens Advisory Council (CAC) on June 15, 2010. SWAC unanimously approved the draft final regulations for submission to the Board as a final-form rulemaking.

The second final rulemaking enclosed, **Paper, Film and Foil Surface Coating Processes,** amends 25 *Pa Code,* Chapters 121 and 129 to limit emissions of volatile organic compounds (VOCs) from the use and application of coatings and cleaning materials in paper, film and foil surface coating processes. The rulemaking adopts the emission limits and other requirements of the U.S. Environmental Protection Agency's (EPA) 2007 Control Techniques Guidelines for paper, film and foil coatings in order to meet federal Clean Air Act requirements. Adoption of the VOC emission requirements in the rulemaking is part of the Commonwealth's strategy, in concert with other Ozone Transport Region (OTR) jurisdictions, to further reduce the transport

of VOC ozone precursors and ground-level ozone throughout the OTR and to attain and maintain the 8-hour ozone national ambient air quality standard. The regulation, when adopted by the Board as a final-form rulemaking, will be submitted to the EPA as a revision to the State Implementation Plan (SIP).

There are approximately 15 paper, film and foil coating operations in the Commonwealth that emitted approximately 374 tons of VOCs in 2009 and would be subject to the limitations included in this rulemaking. The EPA estimates that implementation of the recommended control options for paper, film and foil surface coating processes will result in approximately a 47% reduction in VOC emissions. As a result of this rulemaking, the anticipated maximum additional annual VOC reductions from the paper, film and foil surface coating facilities is expected to be approximately 176 tons.

The Board approved the proposed rulemaking on September 15, 2009, and it was published in the *Pennsylvania Bulletin* on November 7, 2009, at 39 *Pa.B.* 6460, where a 60-day public comment period and three public hearings were advertised. No public comments were submitted to the Board on the proposed rulemaking; however, IRRC submitted comments where it questioned the clarity of several provisions of the rulemaking. For example, IRRC commented that the proposed §§ 129.52b(d) and (e), which require the owners and operators of a regulated surface coating processes to maintain certain records, was unclear. IRRC requested that the Board clarify the format in which these records must be maintained. IRRC also commented that proposed § 129.52b(e), which requires that records required under § 129.52d(d) be submitted to the Department "upon request," is unclear as to whether the request will be made orally or in writing. Clarifications to the final-form rulemaking, where warranted, were made in response to IRRC's comments.

The Department presented the draft final-form rulemaking to the Air Quality Technical Advisory Committee (AQTAC) on June 17, 2010. AQTAC concurred with the Department's recommendation to move the final-form rulemaking forward to the Board. The Department also consulted with the CAC on June 30, 2010, and with the Small Business Compliance Advisory Committee on July 28, 2010.

The third final rulemaking enclosed, the **Administration of the Land Recycling Program,** updates numeric Statewide health-based standards in 25 *Pa Code* Chapter 250 relating to the cleanup of contaminated sites under the Land Recycling and Environmental Remediation Standards Act (Act 2). Act 2 requires the Board to establish by regulation uniform Statewide health-based standards for regulated substances for each environmental medium so that any substantial present or probable future risk to human health and the environment is eliminated. Section 104(a) of Act 2 also explicitly recognizes that such Statewide health-based standards would need to be updated over time as better science became available and as the need for clarification or enhancement of the program became apparent. This final-form rulemaking uses current EPA guidance and up-to-date scientific and toxicological information to revise the cleanup standards. The technical amendments in the final-form rulemaking will affect owners, operators and purchasers of properties and facilities who volunteer or are required to perform remediation of contaminated sites.

Included in the final rulemaking are Statewide health standards for Methyl Tertiary Butyl Ether (MTBE); however, no changes are proposed to the standard from what is currently in effect in Chapter 250. The current Chapter 250 Statewide health cleanup standard for MTBE is 20 ug/l for groundwater used for drinking water. This 20 ug/l standard is the odor threshold for MTBE as published by the EPA in the *"2006 Edition of the Drinking Water Standards and Health Advisories"* (EPA 822-R-06-013). During the development of the proposed rulemaking, the Department had considered revising the MTBE standard, which would have allowed for higher concentrations of MTBE based on health-based calculations, but would have resulted in unacceptable taste and odor impacts on groundwater used for drinking water.

The proposed rulemaking was approved by the Board on December 15, 2009, and was published in the March 6, 2010, edition of the *Pennsylvania Bulletin* (40 *Pa.B.* 1297), where a 30-day public comment period was advertised. During the official comment period, the EQB received comments from five commentators and IRRC. The proposal to leave the medium-specific concentrations (MSCs) for MTBE unchanged from its current form in Chapter 250 generated the most comments on the proposed rulemaking, with one commentator suggesting that the Board adopt two separate standards for MTBE – risk-based MSCs and a separate Secondary Maximum Contaminant Level (SMCL) based on taste and odor concerns for MTBE. This suggestion was not accommodated because EPA, to date, has not promulgated an SMCL level for MTBE. Other commentators provided suggestions for improving clarity of the rulemaking, which were accommodated. No substantive changes were made to the final-form rulemaking, as a result of comments received on the proposal.

The final-form rulemaking was discussed with the Cleanup Standards Scientific Advisory Board (CSSAB) on June 15, 2010. The CSSAB was supportive of the overall rulemaking, but opposed retaining the standards for MTBE because they do not reflect specific health-based criteria from Act 2. The final rulemaking was also shared with the Department's Storage Tank Advisory Committee (STAC) on June 8, 2010, where the Board voted to approve the rulemaking as written for presentation to the Board as final rulemaking.

The fourth and last final-form rulemaking enclosed, the **Administration of the Uniform Environmental Covenants Act,** establishes requirements for the submission of an environmental covenant to the Department as demonstration of attainment or maintenance of an environmental remediation standard under Act 2. The rulemaking is authorized by the Uniform Environmental Covenants Act (UECA), which was signed into law in Pennsylvania on December 18, 2007. UECA provides for the creation of environmental covenants to ensure the long-term stewardship of activity and use limitations on property remediated under Act 2, the Storage Tank and Spill Prevention Act (Tank Act), and other state and federal statutes. The regulations include provisions that clarify when an environmental covenant is required, how an environmental covenant should be created, what an environmental covenant must contain and when an environmental covenant must be submitted to the Department. The rulemaking also establishes a fee to support the Department's review of environmental covenants that are submitted as part of a demonstration of attainment or maintenance of a remediation or corrective action standard.

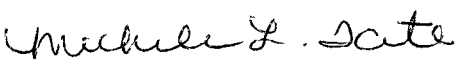
The proposed rulemaking was approved by the Board on December 15, 2009, and was published in the March 6, 2010, edition of the *Pennsylvania Bulletin* (40 *Pa.B.* 1379), where a 30-day public comment period was advertised. During the official comment period, the Board received comments from eleven commentators, including IRRC. As a result of comments received on the proposal, several changes, mostly editorial and corrective in nature, were made to the rulemaking; however, several substantive changes were also made to the regulations, including changes associated with the submission process for Departmental consideration of environmental covenants. In lieu of requiring the submission of draft environmental covenants at early or interim time periods, the final-form rulemaking only requires submission of an environmental covenant after the Department has approved a Final Report or Remedial Action Completion Report demonstrating attainment of an Act 2 standard. Other substantive changes at final rulemaking include amendments that provide the Department and the remediator with explicit authority to agree to longer compliance timeframes when necessary and amendments that add a mandatory provision regarding the termination of covenants, which is intended to address situations where the Pennsylvania Department of Transportation acquires property that is subject to an environmental covenant for use as a highway right-of-way.

The Department consulted with the regulated community on the rulemaking, including discussions with STAC on June 8, 2010, and the CSSAB on June 15, 2010. STAC approved a motion to recommend approval of the final-form rulemaking by the Board, while the CSSAB, although supportive of the draft final-form rulemaking, did not take formal action on the rulemaking, pending resolution of several issues. The Department had further discussions with the CSSAB on June 28, 2010, resulting in further refinements to the rulemaking to address the committee's concerns.

The Department will provide assistance as necessary to facilitate the Commission's review of these final-form rulemakings under Section 5.1(e) of the Regulatory Review Act. Please contact me at the number above if you have any questions or need additional information.

Please contact me at the number above if you have any questions or need additional information.

Sincerely,



Michele L. Tate
Regulatory Coordinator

Enclosures

bcc: Final Regulatory File #7-442
Final Regulatory File #7-448
Final Regulatory File #7-453
Final Regulatory File #7-454

0120-FM-PY0011 8/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF POLICY

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

I.D. NUMBER: 7- 442

SUBJECT: Beneficial Use of Coal Ash

AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

- ☐ Proposed Regulation
- ☒ Final Regulation
- ☐ Final Regulation with Notice of Proposed Rulemaking Omitted
- ☐ 120-day Emergency Certification of the Attorney General
- ☐ 120-day Emergency Certification of the Governor
- ☐ Delivery of Tolled Regulation
  - a. ☐ With Revisions
  - b. ☐ Without Revisions

RECEIVED
IRRC
2010 SEP 20 P 3:20

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
9.20.10	D Newitt	Majority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9-20-10	M Walko	Minority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9/20	J Wallace	Majority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9-20-10	A. Rybarczyk	Minority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9/20/10	K Cooper	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL (for Final Omitted only)
		LEGISLATIVE REFERENCE BUREAU (for Proposed only)