INDIANA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF RECLAMATION

INTERGOVERNMENTAL FORUM ON MINE PLACEMENT OF COAL COMBUSTION WASTES

SECTION I MEMORANDUM 92-1

SECTION II MEMORANDUM 99-2

SECTION III INDIANA STATUTE IC 13-19-3-3

SECTION IV PERMIT MODULE

SECTION V PROPOSED RULE
(This rule was not adopted and is not presently under consideration)

SECTION I-MEMORANDUM 92-1

INDIANA DEPARTMENT OF NATURAL RESOURCES PATRICK R. RALSTON, DIRECTOR

MEMORANDUM 92-1

TO: ALL OPERATORS AND INTERESTED PARTIES

FROM: MICHAEL SPONSLER, DIRECTOR
DIVISION OF RECLAMATION

DATE: JUNE 8, 1992

SUBJECT: DISPOSAL OF COAL COMBUSTION WASTE ON SURFACE COAL MINES

As a result of approval by the Natural Resources Commission, the disposal of coal combustion waste (CCW) on lands permitted for surface coal mining will be regulated by the Division of Reclamation through existing authority of IC 13-4.1 and 310 IAC 12.

Applications seeking initial approval to dispose CCW on surface coal mines shall be submitted as a new permit or a significant revision to an existing permit.

In order to assist applicants and to facilitate permit application preparation of required waste characterization, site specific hydrogeologic monitoring and design requirements, a pre-submittal meeting with Division staff is highly recommended.

The following emphasizes certain required information necessary for the permit application:

A. Site Specific Characterization

Both geology and hydrology information shall be presented as a detailed, integrated evaluation of the hydrogeologic conditions beneath and adjacent to the proposed disposal site that adequately describes the production and migration of any coal combustion waste derived leachate. Information on the capability of in situ materials to contain and or attenuate any leachate levels before off-site migration will be useful.

A qualitative and quantitative analysis of the effects of the emplacement of CCW in the existing hydrologic regime must

be addressed. Hydrogeologic data must be based on a systematic investigation utilizing data from borings, piezometers, water wells and other nearby water sources, the chemical characteristics of subsurface waters, and other available information. Baseline data will be a critical feature of applications for CCW disposal. As always a minimum of 6 months of data will be necessary. **Landowner concurrence for the disposal of CCW is required.** Appropriate existing data, information and plans may be referenced.

B. Waste Characterization

Initial screening of the coal combustion waste shall be done to determine the leachability of trace elements from coal combustion waste. The screening procedure must fully satisfy the following objectives:

1. Identify trace elements of environmental significance, including those of primary drinking water standards and others present at significant total concentration levels, and include them in the leachate testing.
2. Determine the total amounts of all identified trace elements in each sample submitted for evaluation.
3. Measure and compare the leachability (mobility in water) of the identified trace elements using short term (18 hours) and long term (30 days) leaching tests that meet ASTM standards.

Table I summarizes the required testing parameters for waste quantity (concentration present) and quality (total amount leachable).

Table II summarizes the required groundwater monitoring parameters.

Testing and monitoring requirements will be based upon baseline data and may be revised as data and testing methods are refined and appropriate parameters are identified.

MS:pep

Attachments

REGULATORY APPROACH TO

DISPOSAL OF COAL COMBUSTION WASTE

I. Coal combustion waste (CCW) may be disposed in the permit area, only if approved by the Director pursuant to 310 IAC 12-3-105 thru 12-3-119. Landowners shall be notified and consent granted to the applicant for proposed CCW disposal operations. Approval shall be based on a demonstration by the person who conducts surface mining activities in the permit area, using hydrologic, geologic, geotechnical, physical, and chemical analyses, that disposal of such materials does not:

(1) Adversely affect the quality of surface and groundwater;

(2) Create public health hazards; or

(3) Affect the establishment of vegetation which supports the approved postmining land use of the permit area.

Coal combustion waste, which exceeds one-fourth (25%) of the RCRA limit for any one RCRA element shall not be considered for disposal on land under permit for coal mining operations.

II. APPLICATION REQUIREMENTS

A. Site Characterization

Each application for a permit to dispose of coal combustion waste shall comply with the requirement of 310 IAC 12-3-28 through 12-3-54 and contain a thorough evaluation of the area hydrology and geology, including the presence of aquifers, permeability of natural materials and whether natural buffers or liners exist. Previous information may be referenced. Also include, maps, plans and cross sections which show the extent of the disposal area, including the expected rate and direction of groundwater movement in the vicinity of the disposal area.

Each application proposing to dispose of coal combustion waste shall contain a description of how minimization of adverse impacts upon the prevailing hydrologic balance will be accomplished. This description shall include, but is not limited to:

(1) The anticipated interaction between the mine spoil, liners, or buffer materials, and the coal combustion waste.

(2) The effects the coal combustion waste will have on the hydrologic balance, including a discussion of the risk potential of contaminating any water bearing strata,

(3) A minimum of six months of baseline monitoring for surface and ground water in and within 1000 feet of the permit area in accordance with 310 IAC 12-3-32 and 12-3-33.

For the purpose of baseline monitoring of both surface and ground water the parameters in Table II shall be monitored. Parameters other than those specified above may be required by the Director in order to ensure the protection of public health and safety and the environment.

B. **Waste Characterization**

Each application proposing to dispose of coal combustion waste shall contain a thorough characterization of the waste material including:

(1) The generating facility. Consideration for disposal will be limited to CCW generated in Indiana or CCW generated from burning Indiana coal.

(2) The types of coal combustion waste to be disposed. (Fly ash, bottom ash, etc.)

(3) Total volume of coal combustion waste to be disposed over the life of the operation and ratio of waste to spoil. Disposal shall not exceed ten feet in thickness unless approved as a monofill.

(4) Initial waste characterization testing as approved by the Director shall be conducted as follows:

(a) Screening for chemical constituents using bulk analysis.

(b) Short term, 18 hour leaching test meeting ASTM standards for the chemicals in Table I.

(c) Long term leaching test meeting ASTM standards for 30 days for the elements in Table I.

Data from the initial screening shall be used to calculate maximum possible concentrations of the elements identified in the screening test.

Periodic coal combustion waste sampling and analyses for each active waste stream shall be conducted at least quarterly according to a schedule approved by the Director. Sampling frequency may later be reduced based upon the consistency of the analyses.

Any new source of CCW, must be identified and approved prior to disposal, and is subject to the requirements as stated herein.

Evaluation of a proposal to dispose CCW on surface coal mines will consider, at a minimum, the risk assessment factors described as follows:

(a) Proximity of public and private water supplies or other critical off-site features.

(b) CCW characteristics including MPC (maximum possible concentration) calculated from solids concentration and appropriate leachate tests.

(c) Geologic and hydrologic site characteristics, such as type and extent of aquifers, overburden characteristics, expected spoil characteristics.

(d) Expected attenuation, dispersion and dilution.

(e) Direction of ground water flow.

(f) Baseline water quality and quantity.

(g) Volume of waste proposed for disposal.

(h) Impact of natural liners, artificial liners, compaction, capping or other operational features.

(i) Type of proposed disposal operation, i.e. backfill, monofill.

III. SITE SPECIFIC DISPOSAL PLANS

A. **Operations Plans.** Disposal methods shall be described in detail by providing the information required by 310 IAC 12-3-41 through 12-3-45 and demonstrating compliance with 310 IAC 12-5. The application shall describe any proposed compaction, methods to reduce infiltration or contact with water, liners, caps, co-disposal with coal processing waste, etc. Detailed maps, plans, and cross-sections shall be provided.

B. **Reclamation Plans.** A detailed reclamation plan shall be submitted pursuant to 310 IAC 12-3-46 through 12-3-55 demonstrating compliance with 310 IAC 12-5. Restoration of approximate original contour, post-mining land use and revegetation shall be described. The plan shall provide for a minimum soil cover of five (5) feet of non-toxic earthen material.

C. <u>Dust control.</u> A plan to control dust in a manner which prevents damage to public or private property pursuant to 310 IAC 12-5-69 through 12-5-71 shall be provided. Specifically plans shall discuss techniques to show how wind erosion and dust will be prevented during transport, placement, and disposal of CCW.

D. <u>Water Monitoring.</u> Water monitoring programs will be dependent on site specific conditions. Ground water shall be monitored at both upgradient and downgradient locations with at least one monitoring well in the expected path of leachate migration.

A plan for monitoring surface and ground water during the disposal of coal combustion waste and through final bond release of the permit area shall be provided as approved by the Director. This plan must specify the frequency of monitoring both surface and ground water, locations of monitoring points, parameters to be monitored and the location and availability for inspection by the Director of all monitoring records. The results of this monitoring plan shall be submitted to the Director in accordance with a schedule approved by the Director.

TABLE I

INDIANA COAL COMBUSTION WASTE TESTING AND MONITORING PARAMETERS

- .Arsenic
- .Barium
- .Cadmium
- .Chromium
- .Lead
- .Mercury
- .Selenium
- .Silver
- .Sulfate
- .Total Dissolved Solids
- .Nickel
- .Boron
- .Chloride
- .Copper
- .Fluoride
- .Iron
- .Manganese
- .Molybdenum
- .Sodium
- .Total Organic Carbon
- .Zinc
- .Sulfide

Acid/Base Accounting

The following shall be measured:

Potential acidity
Neutralization potential
Net neutralization potential
pH

Parameters other than those specified may be required by the Director in order to ensure the protection of public health and safety and the environment.

TABLE II

INDIANA COAL COMBUSTION WASTE WATER TESTING AND MONITORING PARAMETERS

The operator must determine the concentration or value of the following parameters for assessing groundwater quality. Metal parameters should be reported as total.

Field Measurements:

Arsenic	Boron
Barium	Chloride
Cadmium	Copper
Chromium	Fluoride
Lead	Iron
Mercury	Manganese
Molybdenum	Nickel
pH	Selenium
Silver	Sodium
Specific Conductance	Sulfate
Sulfide	Temperature
Total Organic Carbon	Total Dissolved Solids
Zinc	

[redacted]

The following shall be measured:

Cation/Anion balance
[redacted]
pH (lab)
[redacted]
Specific conductance
Temperature

Parameters other than those specified may be required by the Director in order to ensure the protection of public health and s2afety and the environment.

SECTION II-MEMORANDUM 99-2

DNR Indiana Department of Natural Resources

Frank O'Bannon, Governor
Larry D. Macklin, Director

MEMORANDUM 99-2

TO: ALL OPERATORS AND INTERESTED PARTIES

FROM: MICHAEL SPONSLER, DIRECTOR
DIVISION OF RECLAMATION

DATE: JULY 12, 1999

SUBJECT: BENEFICIAL USE OF COAL COMBUSTION WASTE

On April 29, 1999, the Natural Resources Commission approved a non rule policy that addresses the beneficial use of coal combustion waste (CCW) in certain circumstances at coal mines regulated under IC 14-34. The policy provides a listing of beneficial uses of CCW that are distinct from CCW disposal activities within the context of the existing regulatory program. The policy was published in the Indiana Register June 1, 1999. A copy is on the reverse side of this memo.

CCW used beneficially must not be mixed with any substance classified as hazardous that would result in a failure of the material to be exempt from regulation as a hazardous waste under 42 U.S.C. 6921. Determinations concerning such exemptions are obtained from the Indiana Department of Environmental Management.

The policy places limits on the legitimate beneficial uses that are consistent with those found in IC 13-19-3-3. Uses not listed in the policy are not subject to the exemption from regulation as disposal.

The policy does not, and is not intended to, provide an alternative to full compliance with IC 14-34. Although CCW utilized in accordance with the policy is not itself regulated as a disposal activity, any facility which facilitates mining and reclamation constructed with CCW must meet all requirements of the I-SMCRA. In addition to providing notification to the Division of the proposed beneficial use, when facilities are constructed in whole or part with CCW, those facilities must be approved prior to construction as does any facility that does not involved a beneficial use of CCW. Consistent with the requirements of I-SMCRA, it may be necessary to demonstrate that the material utilized will meet the engineering requirements of the facility being constructed.

A permittee intending to use CCW beneficially in accordance with the policy needs to notify the Director in writing prior to implementing the planned use of the CCW. The notification must describe the intended use or uses in sufficient detail to demonstrate that the proposal is consistent with those described in the non-rule policy. Information to be included in the notification is listed in the attached non-rule policy. Failure to notify prior to implementation of a beneficial use may result in the issuance of a violation. Within 15 days of receipt of the notification, the Director will notify the permittee if the Department determines the notification describes a use of CCW that is not or may not be allowed under the adopted policy or if a proposed use may compromise the ability to comply with the requirements of I-SMCRA. For documentation purposes, an acknowledgment will also be sent by the Department if the proposed use or uses are consistent with the adopted policy. If the Department determines that additional information is required to ensure that the facility to be constructed meets the requirements of I-SMCRA or other applicable state and federal law, the applicant will be informed in this correspondence. Division inspection staff will monitor beneficial use during normal inspections.

It will benefit all parties involved to assure there are no misunderstandings of the intended uses or locations of the uses and that records be maintained on site which document that the volume of materials used is consistent with the notification provided to the Division. Effective communication of plans and intentions is critical. Beneficial use is NOT a substitute for or an approval of a CCW disposal plan. It does provide for certain beneficial uses consistent with Indiana's solid wastes statutes.

Questions concerning the non-rule policy may be directed to the Reclamation Specialist or Division of Reclamation's Jasonville Office.

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SECTION III-INDIANA STATUTE IC 13-19-3-3

Historical and Statutory Notes

Formerly:
IC 13-1-12-8.
P.L.150-1993, SEC.1.
P.L.1-1994, SEC.70.
P.L.41-1995, SEC.5.

13-19-3-3 Prohibited areas of regulation

Sec. 3. The board may not adopt rules under section 1 of this chapter to regulate the following:

(1) The disposal of waste indigenous to the coal mining process, coal combustion fly or bottom ash, or coal combustion fly or bottom ash in mixture with flue gas desulfurization byproducts generated by coal combustion units if the material:

(A) is not included in the definition of hazardous waste or is exempt from regulation as a hazardous waste under 42 U.S.C. 6921; and

(B) is disposed of at a facility regulated under IC 14-34.

(2) The use of coal combustion fly or bottom ash, coal combustion fly or bottom ash in mixture with flue gas desulfurization byproducts generated by coal combustion units, or boiler slag if the use includes one (1) of the following uses:

(A) The extraction or recovery of materials and compounds contained within coal ash.

(B) Bottom ash as an antiskid material.

(C) Raw material for manufacturing another product.

(D) Mine subsidence, mine fire control, and mine sealing.

(E) Structural fill, when combined with cement, sand, or water to produce a controlled strength fill material.

(F) A base in road construction.

As added by P.L.1-1996, SEC.9.

Historical and Statutory Notes

Formerly:
IC 13-1-12-9.
P.L.150-1993, SEC.2.
P.L.1-1995, SEC.62.
P.L.122-1996, SEC.1.

13-19-3-4 Rules restricting vertical expansions of existing permitted landfills prohibited

Sec. 4. Except as provided by sections 5 and 6 of this chapter, the board and the department may not adopt rules under section 1 of this chapter to:

(1) prohibit; or

(2) arbitrarily restrict;

vertical expansions of existing permitted landfills.

As added by P.L.1-1996, SEC.9. Amended by P.L.122-1996, SEC.3.

Historical and Statutory Notes

Formerly:
IC 13-1-12-9.
P.L.150-1993, SEC.2.
P.L.1-1995, SEC.62.
P.L.122-1996, SEC.1.

13-19-3-5 Vertical expansions of existing permitted landfills; environmental assessments

(2) Evaluation of groundwater.

(3) Operational history of the landfill.

(4) Identification of adjacent land uses.

As added by P.L.1-1996, SEC.9.

Historical and Statutory Notes

Formerly:
IC 13-1-12-9.
P.L.150-1994, SEC.2.
P.L.1-1995, SEC.62.
P.L.122-1996, SEC.1.

13-19-3-6 Vertical expansions of existing permitted landfill; submission of des engineering, and operational requirements

Sec. 6. Notwithstanding federal regulations, the board and the department shall a rules under section 1 of this chapter that require the applicant for a vertical expansion o existing permitted landfill to submit desiga, engineering, and operational requirem including the following:

(1) A more precise definition of the hydrogeology of the site, including a soil gas anal

(2) Operational requirements.

(3) Surface water control plan.

(4) Landfill gas control plan.

(5) Final cover requirements.

(6) Closure and financial assurance plans.

(7) Remedial action plan.

As added by P.L.1-1996, SEC.9.

Historical and Statutory Notes

Formerly:
IC 13-1-12-9.
P.L.150-1993, SEC.2.
P.L.1-1995, SEC.62.
P.L.122-1996, SEC.1.

Chapter 4

Good Character Requirements for Solid Waste and Hazardous Waste Management Permits

Section		Section	
13-19-4-1	Transfer stations	13-19-4-5	Denial; grounds
13-19-4-2	Permit applicant disclosure statement	13-19-4-6	Denial; mitigating factors
		13-19-4-7	Findings of fact
13-19-4-3	Permit applicant disclosure statement; content; oath	13-19-4-8	Change of ownership; proce exemption
13-19-4-4	Permit applicant disclosure statement; verification	13-19-4-9	Administrative procedure
		13-19-4-10	Rules of administration

13-19-4-1 Transfer stations

Sec. 1. This chapter does not apply to transfer stations.

As added by P.L.1-1996, SEC.9.

SECTION IV-PERMIT MODULE

PERMIT ID _____
REVISION DATE_____

Attachment IV.O.
Coal Combustion By-Products

A. General Information

1. Identify all methods of disposal or proposed use:

[ ] Monofill (disposal in pits or cells)
[ ] Backfill (disposal in spoil as pit progresses)
[ ] Other

If "Other" has been indicated, provide an explanation of the methodology to be used.

2. a. Identify the type(s) of coal combustion by-product and the volume of each type to be disposed annually and in total:

TYPES OF BY PRODUCTS	ANNUAL VOLUME (yd^3)	TOTAL VOLUME (yd^3)
[ ] Fly Ash		
[ ] Bottom Ash		
[ ] Boiler Slag		
[ ] Flue Gas Desulfurization Sludge		
[ ] Other		

If "Other" has been indicated, provide a description of the by-product:

b. Identify any other materials that are or may be mixed with the coal feedstock prior to combustion and the portion of the feedstock that each of these materials represents:

3. Provide a general narrative description of the coal combustion by-product disposal in the context of the mining operation which describes the sources [generator(s)], types and volumes of coal combustion by-products to be disposed:

PERMIT ID _____
REVISION DATE _____

4. a. Provide a list of all landowners for areas which are to be subject to coal combustion by-product disposal as Attachment IV.O., ITEM A.4.a..

   b. Attach a signed statement from each owner listed above that acknowledges the plan to dispose of coal combustion by-products on his property and consents to that disposal as Attachment IV.O., ITEM A.4.b..

5. Show, on the **Environmental Resources Map**, the location of all coal combustion by-products disposal activities, clearly indicating the type or types of disposal activities to occur in those areas.

B. Characterization of the Coal Combustion By-Products to be Disposed

1. Provide a narrative description of the combustion and air pollution control process utilized by the by-product producer to generate the by-products to be disposed and indicate the expected percentage by volume of each type of by-product to be disposed (i.e. 60% fly ash, 20% bottom ash, 20% boiler slag) as Attachment IV.O., ITEM B.1. using any charts, diagrams or tables necessary.

2. Physical and Chemical Analyses of Coal Combustion By-Products

   a. Describe the extent to which coal combustion by-products are to be mixed with other materials (such as pH control chemicals or stabilizers) prior to leaving the site of generation. Identify those other materials and provide their physical and chemical characteristics:

PERMIT ID _____
REVISION DATE_____

b. (1). (A). Provide a bulk analysis of the materials to be disposed through the completion of Attachment IV.O., ITEM B.2.b. and indicating the analysis was conducted using one of the following methods:

Proton Induced X-Ray Emission (PIXE)
Neutron Activated Analysis (NAA)
Inductively Coupled Argon Plasma (ICAP)
Spectroscopic Detection and ID
X-Ray Fluorescence (XRF)
Other Methods Approved by the Director

(B). Provide certified copies of the laboratory analyses as Attachment IV.O., ITEM B.2.b.(1).

(C). Provide a calculation of the Maximum Possible Concentrations of those elements identified as present in the bulk analyses using a 20:1 liquid to solid ratio as a basis for the calculation as Attachment IV.O., ITEM B.2.b.(1).C.

(2). (A). Provide on the same attachment (Attachment IV.O., ITEM B.2.b.) the results of an 18 hour <u>and</u> a 30 day leachate extraction tests using the methods established in ASTM Shake Extraction of Solid Waste (D3987-85). The analytic techniques and equipment used must have the ability to detect each required element that may be present at any primary and secondary drinking water standard that is established for that element. If the by-product is pH adjusted at the generation site, leachate analyses must be provided for the by-product materials both before and after pH adjustments.

(B). Provide certified copies of the laboratory results for the leachate analyses in Attachment IV.O., ITEM B.2.b.(2).

Throughout the life of the disposal process, additional bulk and leachate analyses of samples for each by-product source and waste stream must be provided quarterly <u>or</u> when a waste stream changes <u>and</u> when by-products from another generator is added. Changes in by-product source or characteristics require the submission of analyses and prior approval by the Director before any disposal.

c. Describe the procedures, consistent with ASTM method C311-85 (Coal Ash Sampling) or another method approved by the Director, used to obtain representative samples of coal combustion by-product used for characterization, including the location of sampling points, origin of by-products (stockpiles, pugmill, ponds, etc.):

d. Describe the extent to which either bulk or leachate quality is expected to vary within the materials to be disposed and provide the basis for that determination:

C. Site Analysis and Operational Requirements

1. Using drill logs and other appropriate information, provide as Attachment IV.O., ITEM C.1. a detailed narrative that characterizes all actual and potential aquifer materials within and adjacent to the permit area during and following the disposal operations, including mine spoil and coal aquifers. The description shall include site specific information concerning permeabilities of natural materials, hydraulic conductivity, anticipated rate and direction of ground water flow, and the interaction between mine spoil, including the spoil to by-product ratio, and the coal combustion by-product materials during disposal and following reclamation.

2. a. As Attachment IV.O., ITEM C.2., provide a description of the groundwater monitoring plan, including the placement of monitoring wells and the frequency and duration of monitoring. A minimum of one up gradient and two down gradient wells must be established to monitor the disposal operations. At least one additional well must be established within the initial monofill disposal area.

   b. Provide a well completion diagram and drill log for each installed groundwater monitoring well as Attachment IV.O., ITEM C.2.

   c. Provide a minimum of six (6) months of baseline water monitoring data to characterize groundwater resources that may be affected by the disposal operations through the completion of Attachment IV.O., ITEM C.2.c.. Include the results of analyses for all parameters listed on that attachment.

3. a. Provide a detailed description of the surface water monitoring plan, including the locations, frequency and duration of monitoring, as Attachment IV.O., ITEM C.3.a.

   b. Provide a minimum of six (6) months of baseline water monitoring data for surface water, including each impoundment, that may or will receive pit pumpage or surface drainage from the disposal area(s) through the completion of Attachment IV.O.,ITEM C.3.b.. Include the results of analyses for all parameters listed on that attachment.

4. Identify and show the location of each ground and surface water monitoring point on the Environmental Resources Map.

PERMIT ID _____
REVISION DATE_____

D. Placement of By-Products during Disposal or Use

1. Will coal combustion by-products be disposed within 100 feet of:

a.	Surface Impoundments	[ ] YES	[ ] NO
b.	Post-Mining Drainageways	[ ] YES	[ ] NO
c.	Property Boundaries	[ ] YES	[ ] NO
d.	Intermittent or Perennial Streams	[ ] YES	[ ] NO
e.	Floodplain(s) as defined in 310 IAC 6	[ ] YES	[ ] NO
f.	Underground Mines	[ ] YES	[ ] NO
g.	Past or Proposed Augering operations	[ ] YES	[ ] NO
h.	Natural Springs or Wet Weather Seeps	[ ] YES	[ ] NO
i.	Permeable Strata	[ ] YES	[ ] NO
j.	Coal Waste, Coal Processing Waste or Non-Coal Waste	[ ] YES	[ ] NO

If any of the above responses are "YES", provide a detailed narrative explaining the nature of the disposal operations that will occur within 100 feet as Attachment IV.O., ITEM D.1.

2. **Will coal combustion by-product disposal occur within 1000 feet of a domestic or agricultural well?**

   [ ] YES [ ] NO

   If "YES", provide a detailed narrative explaining the nature of the disposal operations that will occur within 1000 feet as Attachment IV.O., ITEM D.2.

3. Maps and Plans:

   a. Indicate the areal extent of coal combustion by-product disposal, each monofill, and all coal combustion by-product unloading and stockpile areas on the Operations map.

   b. For each disposal area provide plans and cross-sections as Attachment IV.O., ITEM D.3. that show the following:

      (1). The elevation and placement of the coal combustion by-products.
      (2). The position and volume of any coal processing waste to be disposed within or adjacent to the coal combustion by-product disposal area.
      (3). The type and thickness of all cover material (minimum 5 ft) and any buffers to be constructed.
      (4). Final site grading and surface water features (including ponds, drainage ways, streams and wetlands) within and adjacent to the coal combustion by-product disposal area.
      (5). Topographic features to be present adjacent to the coal combustion by-product disposal area following reclamation.
      (6). Abandoned or active underground mines and surface mining activities within and adjacent to the coal combustion by-product disposal area and any buffers or other protection to be used to isolate underground mine works from the impacts of coal combustion by-product disposal.
      (7). Both pre-mining and post-reclamation perched, seasonally high and regional groundwater tables within and adjacent to

the proposed coal combustion by-product disposal area.

(8). Coal seams mined, coal outcrops, and the pit floor within and adjacent to the coal combustion by product disposal area.

(9). Techniques to be used to isolate the disposed materials from augered highwalls (min. = 100 ft.).

(10). The unconsolidated material/bedrock interface at highwalls and the techniques to be used to isolate the disposed materials from that interface.

(11). The elevation of the pre-mining surface at the disposal site.

E. Provide a detailed discussion of the timeframe of the disposal operation for each disposal area that has been proposed as Attachment IV.O., ITEM E. that includes the start of disposal, end of disposal and final reclamation of the disposal area.

F. Protection of the Hydrological Balance - Determination of Probable Hydrological Consequences

Include in Attachment VI.D.1, a determination of the probable hydrological consequences both on and off of the mine site, of the surface mining and reclamation activities, including the disposal of coal combustion by-products, with respect to the hydrologic regime, quantity and quality of water in surface and groundwater systems, under seasonal conditions. Provide a discussion of the basis for the determination in the attachment.

G. Provide a plan that will be implemented to control dust generated from coal combustion by-product disposal, use or storage:

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM B.2.b.
COAL COMBUSTION BY-PRODUCT
BULK AND LEACHATE ANALYSIS

NOTE: Other formats for this attachment may be used when approved by the Director.

Name of Generator _____

Sample Number _____ Collection Date _____
Sampling Location and Method _____

_____

Collector's Name _____ Telephone No. _____
Analytical Laboratory:

Name _____ Analyst's Name

Address _____ _____

_____

Phone ( )- _____

[ ] No pH Adjustment [ ] Before pH Adjustment [ ] After pH Adjustment

CONSTITUENTS	METHOD OF ANALYSIS USED (ASTM D3987-85, ETC)	DRY WT. CONCENTRATION (mg/kg)*	LEACHATE CONCENTRATION (mg/l)*		DRINKING WTR STD (mg/l)
			18 Hr	30 Da	
pH					
Aluminum					
Arsenic					
Barium					
Boron					
Cadmium					
Chromium					
Copper					
Manganese					
Magnesium					

* Except pH

PERMIT ID _____
REVISION DATE_____

ATTACHMENT IV.O., ITEM B.2.b., Page 2
COAL COMBUSTION BY-PRODUCT
BULK AND LEACHATE ANALYSIS

Sample Number _____ Collection Date _____

CONSTITUENTS	METHOD OF ANALYSIS USED (ASTM D3987-85, ETC)	DRY WT. CONCENTRATION (mg/kg)*	LEACHATE CONCENTRATION (mg/l)*		DRINKING WTR STD (mg/l)*
			18 Hr	30 Da	
Lead					
Iron					
Mercury					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Zinc					
Sulfate					
Fluoride					
Sulfide					
Chloride					
Sodium					
Vanadium					
Potential Acidity					
Neutralization Potent.					
Net Nutralization Pot.					

* Except Neutralization Potential and Net Neutralization Potential

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM B.2.b., Page 3
COAL COMBUSTION BY-PRODUCTS
BULK AND LEACHATE ANALYSIS

Sample Number _____ Collection Date _____

CONSTITUENTS	METHOD OF ANALYSIS USED (ASTM D3987-85, ETC)	DRY WT. CONCENTRATION (mg/kg)	LEACHATE CONCENTRATION (mg/l)		DRINKING WTR STD (mg/l)
			18 Hr	30 Da	
Tot Dissolved Solids					
Total Organic Carbon					

PERMIT ID _____
REVISION DATE_____

ATTACHMENT IV.O., ITEM C.2.c.
COAL COMBUSTION BY-PRODUCTS
GROUND WATER MONITORING REPORT

NOTE: Other formats for this attachment may be used when approved by the Director.

Use a separate form for each monitoring point. Sample ID by the laboratory. DT is the date that the sample was obtained.

Monitoring Point Identity as provided in application _____

Casing Surface Elevation (MSL) _____

From the disposal site, this point is:
[ ] Upgradient [ ] Downgradient
This data is:
[ ] Baseline [ ] Post-baseline monitoring

Analytical Laboratory:

Name _____ Address _____

Phone (_____)-_____ _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Aluminum (mg/l)						
Arsenic (mg/l)						
Barium (mg/l)						
Cadmium (mg/l)						
Calcium (mg/l)						
Chromium (mg/l)						
Copper (mg/l)						
Lead (mg/l)						

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM C.2.c., Page 2
COAL COMBUSTION BY-PRODUCTS
GROUND WATER MONITORING REPORT

Monitoring Point Identity as provided in application _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Manganese (mg/l)						
Mercury (mg/l)						
Nickel (mg/l)						
Selenium (mg/l)						
Zinc (mg/l)						
Static Water Elevation						
Field pH						
Laboratory pH						
Specific Cond (µmhos @ 25°C)						
Tot Dissolved Solids (mg/l)						
Alkalinity (mg/l)						
Acidity (mg/l)						
Silver (mg/l)						

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM C.2.c., Page 3
COAL COMBUSTION BY-PRODUCTS
GROUND WATER MONITORING REPORT

Monitoring Point Identity as provided in application _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Molybdenum (mg/l)						
Chloride (mg/l)						
Fluoride (mg/l)						
Iron (mg/l)						
Sodium (mg/l)						
Sulfate (mg/l)						
Sulfide (mg/l)						
Hardness (mg/l)						
Boron (mg/l)						
Magnesium (mg/l)						
Total Organic Carbon(mg/l)						
Cation/Anion Balance(%Dif)						
Temperature (°C)						

PERMIT ID _____
REVISION DATE_____

ATTACHMENT IV.O., ITEM C.3.b.
COAL COMBUSTION BY-PRODUCTS
SURFACE WATER MONITORING REPORT

NOTE: Other formats for this attachment may be used when approved by the Director.

Use a separate form for each monitoring point. Sample ID is that used by the laboratory. DT is the date that the sample was obtained.

Monitoring Point Identity as provided in application _____

This data is:
[ ] Baseline [ ] Post-baseline monitoring

Analytical Laboratory:

Name _____ Address _____

Phone ( )- _____ _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Aluminum (mg/l)						
Arsenic (mg/l)						
Barium (mg/l)						
Cadmium (mg/l)						
Calcium (mg/l)						
Chromium (mg/l)						
Copper (mg/l)						
Lead (mg/l)						

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM C.3.b., Page 2
COAL COMBUSTION BY-PRODUCTS
SURFACE WATER MONITORING REPORT

Monitoring Point Identity as provided in application _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Manganese (mg/l)						
Mercury (mg/l)						
Nickel (mg/l)						
Selenium (mg/l)						
Zinc (mg/l)						
Discharge Rate (CFS)						
Field pH						
Laboratory pH						
Specific Cond (µmhos @ 25°C)						
Tot Suspended Solids (mg/l)						
Tot Dissolved Solids (mg/l)						
Alkalinity (mg/l)						
Acidity (mg/l)						
Silver (mg/l)						

PERMIT ID _____
REVISION DATE _____

ATTACHMENT IV.O., ITEM C.3.b., Page 3
COAL COMBUSTION BY-PRODUCTS
SURFACE WATER MONITORING REPORT

Monitoring Point Identity as provided in application _____

PARAMETER	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____	SAMPLE ID _____ DT_____
Molybdenum (mg/l)						
Chloride (mg/l)						
Fluoride (mg/l)						
Iron (mg/l)						
Sodium (mg/l)						
Sulfate (mg/l)						
Sulfide (mg/l)						
Boron (mg/l)						
Magnesium (mg/l)						
Total Organic Carbon(mg/l)						
Cation/Anion Balance(%Dif)						
Temperature (°C)						

SECTION V-PROPOSED RULE

(1) The curator shall pass the shoe whenever the banker's hand loses.
(2) The dealer or supervisor assigned to the table may order the curator to pass the shoe if the curator:
(A) unreasonably delays the game;
(B) repeatedly makes invalid deals;
(C) is unable to place a wager; or
(D) violates the Act or this title.

(c) Whenever a voluntary or compulsory relinquishment of the shoe occurs, the dealer shall offer the shoe to the player immediately to the right of the previous curator and, if the player does not accept it or there is no player in that position, the dealer shall offer the shoe to each of the other players in turn, counterclockwise, around the table. The first to accept the shoe when offered shall become the new curator. *(Indiana Gaming Commission; 68 IAC 10-10-16)*

68 IAC 10-10-17 Irregularities
Authority: IC 4-33-4-1; IC 4-33-4-2; IC 4-33-4-3
Affected: IC 4-33

Sec. 17. (a) A third card dealt to the player's hand when no third card is authorized shall become the third card of the banker's hand if the banker's hand is to receive a third card in accordance with section 15 of this rule. If the banker's hand is required to stay the card dealt in error shall become the first card of the next hand unless it has been exposed. If the card has been exposed, that card and an additional number of cards equal to the face value of this card shall be drawn face upward from the shoe and placed in the discard rack in accordance with section 12 of this rule.

(b) Any card found face upward in the shoe shall be burned.

(c) If there are insufficient cards remaining in the shoe to complete a round of play, that round shall be void and a new round shall commence after the entire set of cards is reshuffled and placed in the shoe and any wagers placed are returned to the players. *(Indiana Gaming Commission; 68 IAC 10-10-17)*

Notice of Public Hearing

Under IC 4-22-2-24, notice is hereby given that on February 25, 1999 at 10:00 a.m.. at the Indiana Gaming Commission, South Tower, Suite 950, Conference Room, National City Center, 115 West Washington Street, Indianapolis , Indiana the Indiana Gaming Commission will hold a public hearing on proposed rules to amend 68 IAC 2-5-4 to specify the number of hours of curriculum that an occupational training school must establish to train poker dealers; add 68 IAC 10-9 concerning the broad parameters within which the game of pai gow poker may be offered by riverboat licensees; and add 68 IAC 10-10 concerning the broad parameters within which the games of baccarat and mini baccarat may be offered by riverboat licensees.

If an accommodation is required to allow an individual with a disability to participate in this public hearing, please contact Cindy Dean at (317) 233-0046 at least forty-eight (48) hours prior to the public hearing.

Copies of these rules are now on file at the Indiana Gaming Commission, South Tower, Suite 950, National City Center, 115 West Washington Street, Indianapolis, Indiana 46204: Indiana State Archives, Indiana State Library, 140 North Senate Avenue and Legislative Services Agency, Indiana Government Center-South, 302 West Washington Street, Room E011, Indianapolis, Indiana and are open for public inspection.

John J. Thar
Executive Director
Indiana Gaming Commission

*TITLE 310 DEPARTMENT OF NATURAL RESOURCES

Proposed Rule
LSA Document #98-133

DIGEST

Amends 310 IAC 12-0.5 by adding new definitions. Adds 310 IAC 12-3-93.1, 310 IAC 12-5-159.1, 310 IAC 12-5-160, 310 IAC 12-5-161, and 310 IAC 12-5-162 to establish application procedures, performance standards, analytical procedures, and monitoring requirements for the disposal and beneficial use of coal combustion waste and byproducts as regulated under IC 14-34. Repeals 310 IAC 12-5-72.6. Effective upon the Department of Natural Resources receiving notice of approval from the Office of Surface Mining and Reclamation of the U.S. Department of the Interior and notice of that approval being published in the Indiana Register.

310 IAC 12-0.5-14.5	310 IAC 12-0.5-144
310 IAC 12-0.5-21.7	310 IAC 12-3-93.1
310 IAC 12-0.5-31.5	310 IAC 12-5-72.6
310 IAC 12-0.5-72.7	310 IAC 12-5-159.1
310 IAC 12-0.5-72.8	310 IAC 12-5-160
310 IAC 12-0.5-90.7	310 IAC 12-5-161
310 IAC 12-0.5-138.5	310 IAC 12-5-162

SECTION 1. 310 IAC 12-0.5-14.5 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-14.5 "Backfill method" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 14.5. "Backfill method", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159 through 310 IAC 12-5-161,

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means the method of coal combustion waste disposal that occurs in conjunction with the ongoing advance of the surface mining pit and in which the thickness of coal combustion waste within the pit does not exceed ten (10) feet. *(Department of Natural Resources; 310 IAC 12-0.5-14.5)*

SECTION 2. 310 IAC 12-0.5-21.7 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-21.7 "Coal combustion waste" or "CCW" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 21.7. "Coal combustion waste" or "CCW", for the purpose of 310 IAC 12-3-93.1, 310 IAC 12-3-93.2, and 310 IAC 12-5-159 through 310 IAC 12-5-161, means any coal combustion fly ash, bottom ash, or flue gas desulfurization byproducts provided that the material is not included in the definition of hazardous waste at 42 U.S.C. 6921. *(Department of Natural Resources; 310 IAC 12-0.5-21.7)*

SECTION 3. 310 IAC 12-0.5-31.5 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-31.5 "Compliance monitoring well" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 31.5. "Compliance monitoring well", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159 through 310 IAC 12-5-161, means a well that is installed in accordance with applicable specifications at 310 IAC 12-5-161 and used to determine compliance with applicable ground water standards. *(Department of Natural Resources; 310 IAC 12-0.5-31.5)*

SECTION 4. 310 IAC 12-0.5-72.7 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-72.7 "Monofill method" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 72.7. "Monofill method", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159 through 310 IAC 12-5-161, means the method of coal combustion waste disposal in which the coal combustion waste is disposed in a specific, designated area exceeding ten (10) feet in thickness. *(Department of Natural Resources; 310 IAC 12-0.5-72.7)*

SECTION 5. 310 IAC 12-0.5-72.8 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-72.8 "MSHA" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 72.8. "MSHA" means the Mine Safety and Health Administration. *(Department of Natural Resources; 310 IAC 12-0.5-72.8)*

SECTION 6. 310 IAC 12-0.5-90.7 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-90.7 "Practical quantitation limits" or "PQL" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 90.7. "Practical quantitation limits" or "PQL", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159, means the lowest concentration or level that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions in accordance with "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846, September 1994. *(Department of Natural Resources; 310 IAC 12-0.5-90.7)*

SECTION 7. 310 IAC 12-0.5-138.5 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-138.5 "Unmined land or strata" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 138.5. "Unmined land or strata", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159 through 310 IAC 12-5-161, means land that has not had coal removed by surface mining extraction methods. *(Department of Natural Resources; 310 IAC 12-0.5-138.5)*

SECTION 8. 310 IAC 12-0.5-144 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-0.5-144 "Zone of attenuation" defined
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 144. "Zone of attenuation", for the purpose of 310 IAC 12-3-93.1 and 310 IAC 12-5-159 through 310 IAC 12-5-161, means the area between the outermost edge of the coal combustion waste placement and the location of the nearest compliance monitoring well. *(Department of Natural Resources; 310 IAC 12-0.5-144)*

SECTION 9. 310 IAC 12-3-93.1 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-3-93.1 Special categories of mining; coal combustion waste
Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 93.1. (a) This section applies to any disposal of coal combustion waste at a coal mine facility with a current

permit under IC 14-34 as a part of the surface coal mining and reclamation operations.

(b) Based upon the results of the analysis conducted pursuant to an approved sampling and analysis plan as provided in subsection (g), the applicant for disposal shall classify the coal combustion waste, using the results from the testing required by subsection (g)(2)(C) as follows:

(1) Class A coal combustion waste must meet the following criteria:

Constituent	Concentration (milligrams per liter)
Arsenic	0.50
Barium	10.0
Cadmium	0.10
Chromium	0.50
Lead	0.50
Mercury	0.02
Selenium	0.10
Silver	0.5
Boron	20.0
Chlorides	2,500.0
Cyanide, total	2.0
Fluoride	14.0
Sodium	2,500.0
Sulfate	2,500.0
Sulfide, total	5.0
Total Dissolved Solids	5,000.0

(2) Class B coal combustion waste must meet the following criteria:

Constituent	Concentration (milligrams per liter)
Arsenic	1.3
Barium	25.0
Cadmium	0.25
Chromium	1.3
Lead	1.3
Mercury	0.05
Selenium	0.25
Silver	1.3
Boron	50.0
Chlorides	6,300.0
Cyanide, total	5.0
Fluoride	35.0
Sodium	6,300.0
Sulfate	6,300.0
Sulfide, total	13.0
Total Dissolved Solids	12,500.0

(3) Coal combustion waste that exceeds the concentrations listed in subdivision (2), or that has a pH less than or equal to four (4.0) or greater than or equal to twelve and one-half (12.5) shall not be permitted for disposal.

(c) Coal combustion waste permissible for disposal shall be as follows:

(1) For CCW that analyzes as Class B at subsection (b)(2), the amount of coal combustion waste must not exceed twenty-five percent (25%) of the permittee's sales from coal extracted from the mine tabulated over the term of the permit on a tonnage basis. Coal combustion waste characterized as Class B under subsection (b)(2) shall be disposed in monofills only.

(2) For CCW that analyzes as Class A material at subsection (b)(1), the amount of coal combustion waste must not exceed fifty percent (50%) of the permittee's sales from coal extracted from the mine tabulated over the term of the permit on a tonnage basis. Coal combustion waste characterized as Class A under subsection (b)(1) may be disposed in monofills or backfill.

(3) CCW disposal must cumulatively, with respect to the tonnage limitations specified in subdivisions (1) and (2), at no time exceed fifty percent (50%) of the permittee's sales from coal extracted from the mine tabulated over the term of the permit on a tonnage basis.

(d) The director shall not approve disposal to take place on unmined land or strata.

(e) The director shall not approve disposal to take place above the replaced land surface or on unmined surface land, including above auger operations.

(f) The application for disposal must include the following information:

(1) An accurate topographic map, in accordance with this subsection, showing the proposed limits of the disposal area with preliminary design details, and enough of the surrounding area of the facility to evaluate potential wind and surface water effects.

(2) A narrative addressing the tonnage of wastes estimated to be disposed.

(3) A narrative addressing the following:

(A) Storage (if applicable) and handling of waste within any temporary storage or staging area.

(B) Operational and maintenance procedures to place and compact the waste material within the disposal area in a controlled manner.

(4) A narrative addressing operational procedures within the permit area to minimize wind erosion of coal combustion waste during transport, storage, and handling activities as well as after initial placement in the disposal area.

(5) A narrative addressing erosion control measures, including, but not limited to, diversions to minimize surface water from coming into contact with coal combustion waste in storage or disposal areas.

(6) A narrative addressing any modifications to soil grading, covering, amendment, seeding, and mulching activities related specifically to a disposal area in order to support the approved postmine land use giving special

attention to operation and maintenance activities.

(7) A narrative addressing adequate protection against erosion of waste materials resulting in waste materials being deposited outside temporary storage or staging areas from direct precipitation.

(8) A narrative addressing adequate protection that describes measures taken to prevent wind deposition of coal combustion waste deposited outside temporary storage areas, staging areas, or disposal areas.

(9) A narrative addressing the control of air emissions resultant of coal combustion waste disposal.

(10) A narrative addressing the covering of the disposal area with a minimum of four (4) feet of nontoxic, noncombustible earthen material.

(11) For a waste stream that has not previously been approved for sampling under this rule, a sampling and analysis plan prepared in accordance with subsection (g) that includes the following:

(A) A description of the coal combustion waste, as defined by the coal combustion waste generator in the sampling and analysis plan.

(B) Methods for collecting representative samples.

(12) The certification form described in subsection (i).

(13) Results of the baseline ground water monitoring required by 310 IAC 12-5-161.

(14) Results of coal combustion waste testing required by subsection (g). Results shall contain the date and time that testing took place.

(15) A description of any sampling and analysis required by 310 IAC 12-5-161, including results of sampling and analysis pertaining to the demonstration in lieu of the vertical monitoring required by 310 IAC 12-5-161(b)(2).

(g) Sampling and analysis plan requirements shall be as follows:

(1) Number of samples includes the following:

(A) Prior to initiating disposal, a minimum of three (3) representative samples of each CCW stream shall be collected and analyzed for the parameters listed in subdivision (3) using the test method listed in subdivision (2)(C). The first three (3) samples shall also be analyzed for the same parameters using the test methods listed in subdivision (2)(A) and (2)(B).

(B) The samples required by this subsection shall be taken at intervals of no less than twenty-four (24) hours apart and no greater than thirty (30) days apart. One (1) sample shall be taken each month for the first twelve (12) calendar months in which CCW disposal takes place for a total of twelve (12) samples. The samples shall be analyzed using the test listed in subdivision (2)(C). For a waste stream that has been previously approved for disposal under this rule, a tabular summary of the results of all coal combustion waste testing for that waste stream previously submitted to the director within the prior twelve (12) months may be submitted in lieu of the sampling required by this subdivision.

(2) Each representative sample shall undergo testing as follows:

(A) An initial screening for chemical constituents using bulk analysis.

(B) A leaching test of eighteen (18) hours in duration using ASTM Method D3987-85, Shake Extraction of Solid Waste test method.

(C) A leaching test of thirty (30) days in duration using ASTM Method D3987-85, Shake Extraction of Solid Waste test method.

(3) Results from testing described in this subsection shall be reported for the following constituents:

(A) Arsenic.
(B) Barium.
(C) Cadmium.
(D) Chromium.
(E) Lead.
(F) Mercury.
(G) Selenium.
(H) Silver.
(I) Boron.
(J) Chlorides.
(K) Cyanide, total.
(L) Fluoride.
(M) Molybdenum.
(N) pH.
(O) Potassium.
(P) Sodium.
(Q) Sulfate.
(R) Sulfide, total.
(S) Total dissolved solids.

(4) The analytical methodology used for the analyses of constituents in subdivision (3) must have a practical quantitation limit:

(A) below the primary drinking water standard, or treatment technique level in the case of lead, for those constituents that have a primary drinking water standard issued by the United States Environmental Protection Agency;

(B) below the secondary drinking water standard for those constituents that have a secondary drinking water standard issued by the United States Environmental Protection Agency; or

(C) below one-tenth (0.1) the standard listed in subsection (b)(1) for Class A material that does not have a primary standard, secondary standard, or treatment technique level issued by the United States Environmental Protection Agency for that purpose.

(5) Classification of CCW shall be as follows:

(A) Following the completion of the sampling required by subdivision (1)(A), the results from the thirty (30) day leach test described in subdivision (2)(C) shall be averaged. The waste classification shall be determined

by comparing the average for each CCW stream and constituent to the concentrations listed in subsection (b)(1) and (b)(2).

(B) After initial classification, each subsequent sample taken shall be averaged with prior samples in chronological order not to exceed twelve (12) total samples averaged.

(C) If, prior to the completion of the first twelve (12) samples required by subdivision (1)(C), the limits for Class A coal combustion waste listed in subsection (b)(1) are exceeded by the average described in clause (B) for a constituent in a CCW stream, the CCW classification will not change, and disposal may continue, so long as the remaining sample results do not exceed the average of one and three-tenths (1.3) times the limits listed in subsection (b)(1) and the sample results for no constituent exceeds one and three-tenths (1.3) times the limits listed in subsection (b)(1) in any consecutive samples. If the average of subsequent sample results or the results for any constituent in consecutive samples exceed one and three-tenths (1.3) times the limit listed in subsection (b)(1), the permittee must comply with the notification provisions of subdivision (j)(2) *[sic.]*.

(D) If, prior to completion of the first twelve (12) samples required by subdivision (1)(C) *[sic.]*, the limits for Class B coal combustion waste listed in subsection (b)(2) are exceeded by the average for a constituent in a CCW stream or by one and twelve-hundredths (1.12) times the limit listed in subsection (b)(1) for a constituent in consecutive samples, disposal of the CCW stream shall cease immediately.

(h) Additional testing procedures shall be as follows:

(1) After the completion of the sampling required in subsection (g)(1), routine compliance testing shall be as follows:

(A) One (1) additional sample of each CCW stream shall be taken quarterly for four (4) calendar quarters and annually thereafter. Each sample shall be analyzed using the test method listed in subsection (g)(2)(C). The results of the testing shall be averaged as described in subsection (g)(5) using a twelve (12) sample rolling average of the most recent representative samples.

(B) In the event that the average for a coal combustion waste tests at one and three-tenths (1.3) times or greater of the criteria listed in subsection (b)(1) for Class A material or one and twelve-hundredths (1.12) times or greater of the criteria listed in subsection (b)(2) for Class B material, retesting for the constituent that exceeded the applicable criteria shall occur immediately for three (3) samples collected at no less than twenty-four (24) hours and no greater than seventy-two (72) hours apart. For Class A material, if these three (3) samples, on average, exceed the Class A standard, disposal shall cease or the material shall be disposed at an approved Class B disposal facility. For Class B material, if these three (3) samples, on average, exceed the Class B standard, disposal shall cease.

(C) All sample results required by this section shall be submitted to the director within sixty (60) days after the end of each calendar quarter for quarterly testing or calendar year for annual testing and shall contain the date and time at which sampling took place.

(2) After a permit for CCW disposal is issued, the permittee shall retest the CCW stream affected by a significant change, pursuant to the requirements of this subsection, if any of the following occur:

(A) A significant change in fuel type, such as burning coal from another basin.

(B) A significant change in process, including, but not limited to, an addition of pollution control equipment or a change of process additives that would alter the chemical characteristics of the coal combustion waste.

(C) A significant change in the facility from which the coal combustion waste is being removed, including, but not limited to, a change to disposal of CCW from an ash pond that has not previously been sampled and classified.

(i) Results of any retesting must be submitted to the director within sixty (60) days of the implementation of any significant change described in this subsection.

(j) As used in this section, "significant change" means a change that, based upon the best knowledge of the generator, is likely to result in a consequential change of the chemical composition or properties of the coal combustion waste. Any such significant change shall be subject to subsection (l).

(k) After any testing or retesting under this section, the applicant or permittee shall submit to the director the form prescribed by the director in which the generator of the coal combustion waste certifies that the material tested and to be disposed under this rule meets the definition of coal combustion waste as set forth at 310 IAC 12-0.5-21.7, the material shipped, or to be shipped, for disposal is representative of that which was tested, and has been collected and analyzed in accordance with this section.

(l) Classification change shall be as follows:

(1) If the operator determines, based upon results of testing required by subsection (g)(5) or (h), that Class B coal combustion waste has exceeded the limits stated in subsection (g)(5) or (h), the operator shall notify the director within twenty-four (24) hours of receipt of the laboratory results indicating the exceedance. Upon this notification, the director shall issue notification to the operator that requires the operator to either cease disposal or to retest in accordance with subsection (h).

(2) If the operator determines, based upon results of

testing required by subsection (g)(5) or (h), that a coal combustion waste classified as Class A under subsection (h)(1) has changed such that it exceeds the limits stated in subsection (g)(5) or (h), the operator shall notify the director within twenty-four (24) hours of receipt of the laboratory results indicating the exceedance. Upon this notification, the director shall issue notification to the operator that requires the operator to:

(A) cease disposal;

(B) continue disposal of the material in a Class B permitted area;

(C) submit an application for approval of the area for Class B disposal; or

(D) retest in accordance with subsection (h).

(m) The director may allow a variance from this rule upon a showing in the application that the variance is necessary to avoid undue economic hardship. As used in this section, "undue economic hardship" includes losses that result because of physical preparations made or contractual obligation incurred prior to the adoption of this section and in reliance upon a previously issued permit.

(n) Any significant change, as described in subsection (h), shall require the permittee to gain written approval from the director prior to disposal of material generated after the significant change. For those permits that are not permitted to accept Class B coal combustion waste, any change from Class A coal combustion waste to Class B coal combustion waste shall be considered a significant permit revision of section 121 of this rule, and such revision shall be approved prior to continued disposal of the material that has changed. After the initial permit to dispose of Class B coal combustion waste is granted, the addition of combustion wastes sources that qualify as Class A or Class B coal combustion waste shall be considered a nonsignificant permit revision unless the director determines that such revision does not meet the requirements of section 121 of this rule. After the initial permit to dispose of Class A coal combustion waste is granted, the addition of coal combustion waste sources that qualify as Class A coal combustion waste, shall be considered a nonsignificant permit revision to the approved permit unless the director determines that such revision does not meet the requirements of section 121 of this rule. *(Department of Natural Resources: 310 IAC 12-3-93.1)*

SECTION 10. 310 IAC 12-5-159.1 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-5-159.1 Coal combustion waste disposal; special performance standards

Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34-13-2

Sec. 159.1. (a) The monitoring and corrective action requirements of sections 160 and 161 of this rule and percentage limitations of 310 IAC 12-3-93.1 shall apply to previously approved coal combustion waste disposal operations upon the midterm review of permit provisions required by the director pursuant to 310 IAC 12-3-120.

(b) Reports to the director shall be submitted on a quarterly basis with all quarterly monitoring based on a calendar quarter due on June 1, September 1, December 1, and March 1, and shall include the following:

(1) The quantity of coal combustion waste disposed from each source and the total quantity of coal combustion waste disposed to date at each site.

(2) The permittee's sales of coal tonnage mined under the permit for the quarter. This report may be submitted either in:

(A) the report required by this subsection; or

(B) the reclamation fee report required by IC 14-34-13-2.

(3) The results of monitoring required by section 161(c) of this rule.

(c) The applicant shall submit a map to the director that shows the locations of coal combustion waste placement in the previous year (January 1 to December 31). This map must be submitted by January 31 of each year.

(d) The CCW disposal area shall be covered with no less than four (4) feet of nontoxic and noncombustible earthen material.

(e) The CCW disposal area shall be adequately protected to effectively control wind deposition outside of approved temporary storage, staging, or disposal areas and from water erosion. *(Department of Natural Resources; 310 IAC 12-5-159.1)*

SECTION 11. 310 IAC 12-5-160 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-5-160 Special categories of mining; coal combustion waste disposal, ground water classification, ground water designations, and corrective action

Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 160. (a) All ground waters existing at facilities regulated by this article shall be classified in accordance with all applicable provisions established by the Indiana department of environmental management.

(b) Coal combustion waste disposal shall be planned and conducted to comply with the requirements of this article and any applicable nondegradation standards established by the Indiana department of environmental management.

(c) Operations that are conducting or have conducted coal combustion waste operations shall not release any contaminant to ground water so as to exceed the applicable ground water standards parameters to be monitored at the compliance monitoring well locations as specified at section 161 of this rule.

(d) In the event of a release described in subsection (c), which the director determines has been a result of the disposal of coal combustion waste, the operator shall, as needed to minimize the degree and extent of contamination, take the corrective actions described in this subsection. Within thirty (30) days of discovery of the release, the operator shall submit to the director a plan describing, in detail, the action that must be taken and a timetable for taking the action. The action shall include, when applicable, the following:

(1) The prevention or removal of water from contact with coal combustion waste.
(2) The treatment of drainage to reduce toxic content that adversely affects downstream ground or surface waters.
(3) The replacement of the affected water supply of an owner of interest in real property who obtains all or part of the owner's supply of water from domestic, agricultural, industrial, or other legitimate use from an underground or surface source.
(4) The cessation of disposal operations.
(5) Additional monitoring to determine the areal extent of any plume of contamination for each constituent under section 161 of this rule that has been measured at concentrations that exceed applicable ground water standards.
(6) Additional monitoring to demonstrate the effectiveness of the action program.
(7) The prevention of further migration of all constituents that exceed applicable ground water standards.
(8) Minimize increases in concentrations of any constituents for which an applicable ground water standard exists.
(9) Any other action needed to satisfy applicable state and federal requirements.

(e) The director shall review, modify, approve, or disapprove, in writing, the operator's action plan within forty-five (45) days of receipt.

(f) Within thirty (30) days of approval of its action plan, the operator shall initiate action pursuant to the plan and shall follow the approved action timetable.

(g) The director may determine appropriate monitoring requirements on a site-specific basis to demonstrate the continued effectiveness of the action taken. *(Department of Natural Resources; 310 IAC 12-5-160)*

SECTION 12. 310 IAC 12-5-161 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-5-161 Special categories of mining; coal combustion waste disposal, ground water monitoring, and analytical procedures

Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 14-34

Sec. 161. (a) To demonstrate compliance with applicable ground water standards, in the case of Class A coal combustion waste classified in accordance of 310 IAC 12-3-93.1, the application shall state measures to be taken for containment and ground water monitoring that are consistent with 310 IAC 12-3-32 and section 27 of this rule. The application shall also contain narratives generated from local information and facility data, where possible, addressing the hydrogeology of the disposal area.

(b) To demonstrate compliance with applicable ground water standards, in the case of Class B coal combustion waste, ground water shall be monitored at both upgradient and downgradient locations. The application shall contain narratives, generated from local information and facility data, where possible, addressing the hydrogeology of the disposal area. The following requirements apply to Class B coal combustion waste disposal sites:

(1) The applicant for a Class B coal combustion waste disposal site shall place coal combustion waste disposal monitoring wells at approved locations as follows:
(A) A minimum of one (1) upgradient monitoring well and two (2) downgradient compliance monitoring wells are required at each monofill.
(B) Downgradient compliance monitoring wells shall be placed every seven hundred fifty (750) feet along the downgradient side of the monofill.
(C) Any upgradient monitoring well shall be located in unmined land or strata no more than three hundred (300) feet from the coal extraction area.
(D) Downgradient compliance monitoring wells shall be located in unmined land or strata no more than three hundred (300) feet from the coal extraction area.
(E) Sufficient monitoring devices shall be installed where necessary in order to determine the hydraulic gradient between waste placement and monitoring wells listed in clause (A).
(F) Monitoring wells and compliance monitoring wells are to be constructed as collection wells that screen appropriate lithologic sections where the domestic wells in the adjacent area are constructed in a similar manner.
(G) Monitoring wells and compliance monitoring wells are to be constructed as zone-specific wells that screen individual strata where domestic wells in the adjacent area are constructed in a similar manner.
(H) During and after coal combustion waste disposal, monitoring devices shall be monitored for water eleva-

tions each calendar quarter. Reports of the water elevations to the nearest one-hundredth (0.01) foot and referenced to mean sea level shall be submitted to the director no later than thirty (30) days following the end of the calendar quarter in which the water elevation was taken.

(I) If an outward gradient from the disposal area has been established, those parameters referred to and stated in subsection (d)(1) shall be monitored each calendar quarter. Reports of these analyses shall be submitted to the director no later than sixty (60) days following the end of the calendar quarter in which the sample pertains.

(2) The applicant for disposal shall place coal combustion waste disposal monitoring wells for the purpose of monitoring beneath the site at approved locations as follows:

(A) A minimum of one (1) upgradient monitoring well and two (2) downgradient compliance monitoring wells are required.

(B) Downgradient compliance monitoring wells shall be placed every seven hundred fifty (750) feet along the downgradient sides of the monofill area.

(C) Any upgradient monitoring well shall be located in unmined land or strata no more than three hundred (300) feet from the coal extraction area.

(D) Downgradient compliance monitoring wells shall be located in unmined land or strata no more than three hundred (300) feet from the coal extraction area.

(E) The monitoring wells shall be constructed by screening through the first ten (10) feet of strata beneath the base elevation of the mined out area at which coal combustion waste placement is proposed and adequately sealed upward.

(F) The monitoring wells shall be monitored for those parameters referred to and stated in subsection (c)(1) each calendar quarter. Reports of these analyses shall be submitted to the director no later than sixty (60) days following the end of the calendar quarter in which the sample pertains.

(G) Instead of the requirements in this subdivision, information may be submitted that demonstrates a permeability of less than or equal to 1×10^{-6} centimeters per second through the initial three (3) feet of strata beneath the base of the area to be mined at which CCW placement is proposed and shall include the following information:

(i) A map showing the location of boreholes from which samples of this strata was collected. Boreholes shall be located such that at least one (1) per five (5) acres occurs for the areas in which Class B coal combustion waste is to be placed.

(ii) A description of how the samples for testing were collected.

(iii) A description of the strata.

(iv) Results of permeability testing reported in centimeters per second at one (1) foot intervals, for no less than three (3) feet.

(c) The following criteria pertain with regard to baseline ground water monitoring for both Class A and Class B coal combustion waste disposal sites, before coal combustion waste disposal takes place, the applicant for disposal must conduct baseline monitoring as follows:

(1) Six (6) samples in six (6) separate months from each well used for baseline ground water monitoring.

(2) The parameters listed in 310 IAC 12-3-93.1(g)(3) shall be analyzed as well as the following parameters:

(A) Water elevations to the nearest one-hundredth (0.01) foot and referenced to mean sea level.

(B) Alkalinity.

(C) Calcium.

(D) Field pH.

(E) Field temperature.

(F) Magnesium.

(G) Total dissolved solids or field specific conductance corrected to twenty-five (25) degrees Celsius.

(d) Sampling and analytical procedures are as follows:

(1) Samples must be collected and preserved in accordance with the procedures set forth in:

(A) ASTM D4448-85a, Standard Guide for Sampling Ground Water Monitoring Wells;

(B) United States Department of Energy, Procedures for Collection and Preservation of Ground Water and Surface Water Samples and for the Installation of Monitoring Wells (DOE/GJ/TMC-08);

(C) the latest edition of Standard Methods for the Examination of Water and Wastewater; or

(D) a method approved by the United States Environmental Protection Agency for that purpose.

(2) The analytical methodology used for the analyses of constituents must have a practical quantitation limit below:

(A) the primary drinking water standard, or treatment technique level in the case of lead, for those constituents that have a primary drinking water standard issued by the United States Environmental Protection Agency;

(B) the secondary drinking water standard for those constituents that have a secondary drinking water standard issued by the United States Environmental Protection Agency; and

(C) one-tenth (0.1) the standard listed in 310 IAC 12-3-93.1(i) for Class A material for any constituent that does not have a primary standard, secondary standard, or treatment technique level issued by the United States Environmental Protection Agency.

(3) The methodology must be consistent with the methodologies contained in the latest edition of Standard Methods for the Examination of Water and Wastewater, or a

method approved by the United States Environmental Protection Agency for that purpose.

(e) Reporting of ground water monitoring results shall include, at a minimum, filing of results on a form prescribed by the director and an original laboratory-certified copy of the analytical results and information, procedures, and techniques for the following:

(1) Sample collection, including, but not limited to, the following:

(A) Identification of the monitoring location.

(B) Time and date of sample.

(C) Name of sample collector.

(D) Method of collection.

(E) Description of the sample color.

(F) Clarity.

(G) Odor.

(H) Notes on weather and other field and well conditions at the time of sampling.

(2) Sample preservation and shipment, including, but not limited to, the following:

(A) Field quality control.

(B) Documentation of holding times.

(3) Analytical procedures, including, but not limited to, the following:

(A) The method detection limit or practical quantitation limit.

(B) The laboratory quality control data and narrative.

(4) Chain of custody control.

(Department of Natural Resources; 310 IAC 12-5-161)

SECTION 13. 310 IAC 12-5-162 IS ADDED TO READ AS FOLLOWS:

310 IAC 12-5-162 Special categories of mining; coal combustion waste disposal; severability

Authority: IC 14-10-2-4; IC 14-34-2-1
Affected: IC 1-1-1-8; IC 14-34

Sec. 162. If any provision of this rule as now or later amended or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions that can be given effect without the invalid provision or application. *(Department of Natural Resources; 310 IAC 12-5-162)*

SECTION 14. 310 IAC 12-5-72.6 IS REPEALED.

SECTION 15. **SECTIONS 1 through 14 of this document take effect upon the Department of Natural Resources receiving notice of approval from the Office of Surface Mining and Reclamation of the U.S. Department of the Interior and notice of that approval being published in the Indiana Register.**

Notice of Public Hearing

Under IC 4-22-2-24, notice is hereby given that on February 23, 1999 at 9:00 a.m., at Jasper Holiday Inn, 951 Wernsing Road, Jasper; AND on March 4, 1999 at 9:00 a.m., at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room 4, Indianapolis, Indiana the Department of Natural Resources will hold a public hearing on proposed amendments to add new definitions and to establish application procedures, performance standards, analytical procedures, and monitoring requirements for the disposal and beneficial use of coal combustion waste and byproducts as regulated under IC 14-34. Copies of these rules are now on file at the Indiana Government Center-South, 402 West Washington Street, Room W272 and Legislative Services Agency, Indiana Government Center-South, 302 West Washington Street, Room E011, Indianapolis, Indiana and are open for public inspection.

Michael Kiley
Chairman
Natural Resources Commission

TITLE 312 NATURAL RESOURCES COMMISSION

Proposed Rule
LSA Document #98-238

DIGEST

Amends 312 IAC 9-1 to add definitions for amphibians, reptiles, and venomous reptiles. Amends 312 IAC 9-5 to regulate the sale and transport of reptiles and amphibians native to Indiana and to regulate the sale and transport of dangerous reptiles. Establishes a captive breeding permit for qualified species of reptiles. Amends 312 IAC 9-11 to include venomous snakes among the animals requiring a wild animal possession permit. Adds and modifies definitions. Effective 30 days after filing with the secretary of state.

312 IAC 9-1-1.5	312 IAC 9-5-7
312 IAC 9-1-13.3	312 IAC 9-5-8
312 IAC 9-1-14.5	312 IAC 9-5-9
312 IAC 9-5-1	312 IAC 9-5-10
312 IAC 9-5-2	312 IAC 9-11-8
312 IAC 9-5-3	312 IAC 9-11-9
312 IAC 9-5-5	312 IAC 9-11-10
312 IAC 9-5-6	312 IAC 9-11-13.5

SECTION 1. 312 IAC 9-1-1.5 IS ADDED TO READ AS FOLLOWS:

312 IAC 9-1-1.5 "Amphibian" defined
Authority: IC 14-22-2-6; IC 14-22-26-3; IC 22-34-17
Affected: IC 14-22