STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF MINING AND RECLAMATION

CLASS 5, TYPE 5X13 UNDERGROUND INJECTION CONTROL (UIC) REISSUANCE APPLICATION

For Coal Mines Slurry Injection

Applicant:

Permit Number:	Date Assigned:
Reissuance No:	
GENERAL INF	FORMATION
Objective: The purpose of this UIC reissuance applic the WVDEP and the Division of Mining and Reclam within the regulatory framework of West Virginia C state and federal mining regulations. All information information, sparse or misleading presentation of information or lead to disqualification or denial of the reissuance time during the review of this reissuance application.	nation requires to make sound permitting decisions, Code of State Regulations and all other applicable on requested is mandatory. Omission of required formation, will slow the review of this application; e. Additional information may be requested at any
I. Applicant Information	
Applicant Name:	
Address:	
City, State, Zip:	
Telephone:	
II. Facility Information	
Facility Name:	
Address (Physical location of facility):	
City, State, Zip:	
Telephone:	
County: Quadrangle:	District:
Nearest Town:	
Description of Operation:	
SIC Codes:	
Specific Directions to Facility:	

III. Operator Information

Operator Name:
IV. Other Permit Information
Article 3(4) Permit Number(s):
NPDES Permit number(s):
Other UIC Applications/Permits associated with this site: Yes No If yes, list by number, type, and date of issuance:
Other Permits associated with this site (list all):
A. Miners Safety and Health Administration (MSHA): B. Dredge or Fill Permits: C. Other Relevant Permits:
Has this permit been modified since most recent reissuance? Yes No If yes, list the Modification Number(s): Does this Application propose any changes from existing permit? Yes No
V. Contact Information
Company Name: Contact Person's Name: Address:
Telephone: E-mail (Required):
Consultant Name: Contact Person's Name: Address:
Telephone: E-mail (Required):
Do you authorize WVDEP to communicate with consultant on the permitting activity? Do you authorize the Consultant to be the Primary contact on this permitting activity? Yes

VI. Receiving Void Information

Α.	Name of Formation:		
В.	Name of Mine Void:		
C.	Height of Coal Void (in feet):		
D.	Disposal Rate (gpd):		
	Current Average:	Current Maximum:	
	Proposed Average:	Proposed Maximum:	
Ε.	Current Mine Pool Elevation:		
	Current Maximum Mine Pool Elevation:		
	Proposed Maximum Mina Pool Flavotion		
F.	Is the receiving void Up Dip of other mine workings? If Yes, What Mine(s) lie Down Dip?	☐ Yes ☐ No	
VII. N	Naterial to be Injected:		
	Fine Coal Slurry		
	Other (Explain):		

PROJECT DETAILS

Provide the requested information below or attach additional worksheets as needed.

VIII. Site Specific Details

A. Provide a General Description of this Proposed Project including any changes to existing Permit:

В.	List and provide a <u>detailed</u> description of all waste streams <u>proposed</u> for injection: i.e., comingled water, surface water, mine drainage water, etc. and relative proportions of each source.
C.	Provide general chemistry characteristics of source water (slurry).
D.	Describe how waste streams are <u>currently</u> managed; type of fluid, description of water source, current disposal method, handling features, associated permits, and NPDES outlet numbers that discharge receiving mine pool water.
Е.	Provide details of the proposed injection system, including: collection methods, conveyance methods (pipe size, pumped/gravity flow, injectate source(s), flow rates, etc.), number of boreholes and type of boreholes (drilled wells (dia.), shafts, drift openings, etc.), permit numbers and NPDES permit/outlet numbers.
F.	Describe any treatment of waste prior to injection.

G.	Provide details on the expected frequency of use (hrs/day; days/week) and expected
	quantities to be injected: average and maximum (in gallons per day).

H. Describe expected injection pressure(s) at each injection point.

I. <u>Chemicals</u>: Provide a <u>list</u> of <u>all</u> chemicals expected to be used during this Reissuance period. UIC Reissuance application review procedures require that all chemicals, whether currently approved or proposed, must be presented and evaluated for use in this Reissuance. Provide copies of Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for <u>each</u> of the chemicals currently approved or proposed for use in operations producing the injectate, and any chemical used in any part of waste generation process.

In addition to providing MSDS or SDS, the following information addressing Maximum Contaminant Levels (MCLs) must be addressed.

"The permittee has the burden of proof to demonstrate that human health effects will not occur related to the chemical components of the product and its usage will not affect any underground sources of drinking water.

For parameters with existing MCLs published by US EPA: This information will be reviewed to determine whether monitoring requirements and/or effluent limitations for those parameter(s) are required to be placed in the permit.

For parameters with no existing MCLs published by US EPA: The permittee must provide information from any other source regarding effects on human health, including but not limited to Integrated Risk Information System (IRIS), World Health Organization, US PEA risk-based criteria (RBCs), ATSDR, and/or OSHA. This information will be reviewed to determine whether monitoring requirements and/or effluent limitations for those parameter(s) are required to be placed in the permit.

The permittee may also provide usage rates, flows, and calculations to demonstrate the expected maximum concentration of the parameters in the injectate, which can be used for comparison with MCLs or other published literature regarding effects on human health. If this information is not provided, then WVDEP must assume that the maximum concentration in the injectate is equal to the concentration or content set forth in the SDS provided with the UIC application".

NOTE: Addition of chemicals after the permit is issued will require a permit modification.

<u>NOTE</u>: A permit WILL NOT be issued to an operation using diesel fuel, kerosene, or any other substance listed or having a component(s) listed as a Hazardous Waste by Toxicity under RCRA. An exception to this may be the use of pH adjusting chemicals such as sodium hydroxide, which may require additional waste characteristic sampling and monitoring, upon request.

J. Permitted Injection Point Locations:

Injection	Constructed	Injecting	Latitude	Longitude	Surface	Datum
Point	(Y/N)	(Y/N)	(deg/min/sec)	(deg/min/sec)	Elevation	(NAD27/NAD83/WGS84)
Number*					(feet)	·

^{*} Attach additional sheets as necessary.

K. Injection Points to be Added or Deleted:

Injection Well Identification	Add/Delete	Injection Well Status (Proposed/constructed)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/ WGS84)

^{*} Begin with the next available sequential 200-range number after existing permitted injection points.

L. Groundwater Monitoring Points Locations (GWM):

Groundwater Monitoring	Constructed (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/WGS84)
Point (GWM#)					

M. Receiving Mine Pool Monitoring Locations (MPM):

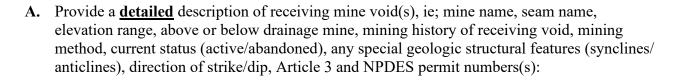
Mine Pool	Constructed	Latitude	Longitude	Surface	Datum
Monitoring	(Y/N)	(deg/min/sec)	(deg/min/sec)	Elevation (feet)	(NAD27/NAD83/WGS84)
Point (MPM#)					

N. Receiving Mine Pool Dewatering Site Locations (MPD):

Mine Pool Dewatering Site (MPD#)	Pumped (P) or Gravity (G)	Constructed (Y/N)	Latitude (deg/min/sec)	Longitude (deg/min/sec)	Surface Elevation (feet)	Datum (NAD27/NAD83/ WGS84)
	2 \					

О.	<u>Waste Baseline Characterization:</u> Provide results of a baseline waste characterization sample, as described by list of parameters in <u>Section XIV</u> , "Waste Characterization Analysis". (Attach certified lab report and fill in all results on supplied table.)
Р.	Does the facility have one or more bath houses? Yes No If yes, how many? Also, indicate whether the discharge is to the surface or subsurface of each.

IX. Geologic and Receiving Mine Void Details

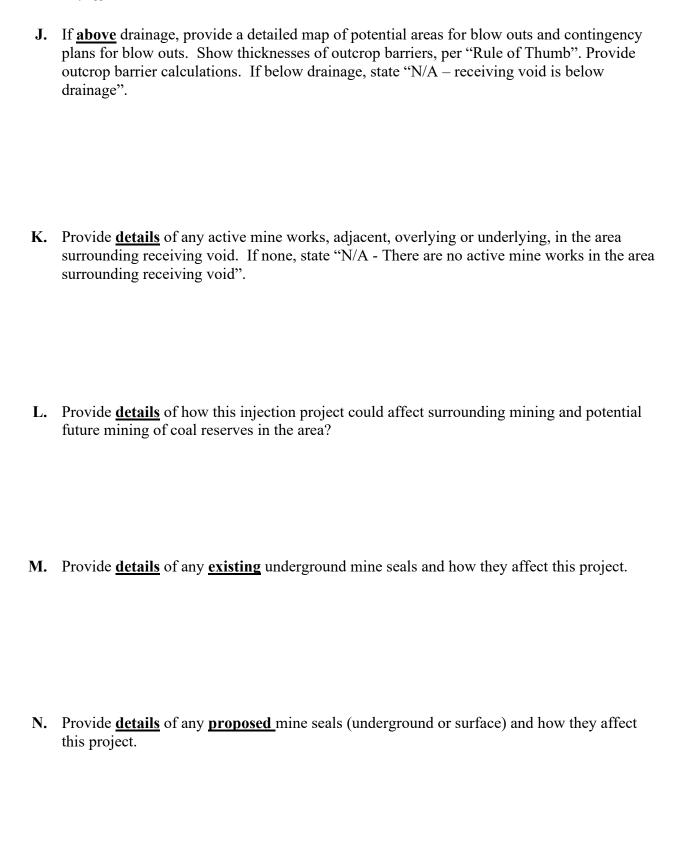


B. Provide <u>details</u> of <u>current</u> water levels in receiving void, <u>expected</u> water levels while injecting, <u>maximum</u> water levels while injecting, and <u>post-injection</u> water level.

C. Provide <u>details</u> on fate of mine water should maximum water level be exceeded while injection activities are occurring, i.e., discharge location(s), treatment options, NPDES permit numbers and outlets.

D. Provide <u>details</u> of geologic strata above and below receiving void, including coal seams or voids that will be influenced by, or have an influence on, the receiving void. Also, how will fluids in mine void interact with surrounding strata?

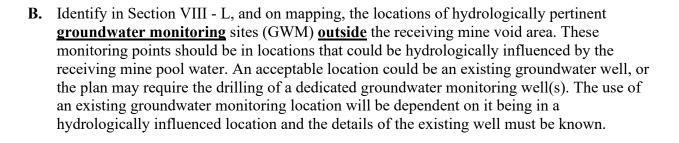
E.	Provide <u>details</u> on the effects of subsidence, current and potential future, on the receiving void, from both below and above receiving void.
F.	Provide <u>details</u> on the general depth of cover from receiving void to surface, emphasizing areas of low cover and high hydraulic head where surface or surrounding shallow groundwater could be influenced by injected fluid. Include " <u>Depth of Cover Map</u> " as an attachment.
G.	Provide original volume of receiving void, percentage of receiving void that is currently filled by injected material, and the percentage of receiving void that is expected to be filled during the proposed 5 year permitting cycle based on normal operation of the facility.
н.	Provide <u>details</u> of in-place coal barriers around receiving void, emphasizing whether above or below drainage, include widths and identify widths on mapping.
I.	If <u>above</u> drainage, provide <u>details</u> of barrier analysis, maximum hydraulic head on barriers, and seepage analysis. Provide barrier calculations. If below drainage, state "N/A – receiving void is below drainage".



O. Provide <u>details</u> of how mine pool water in receiving void will be managed, including;

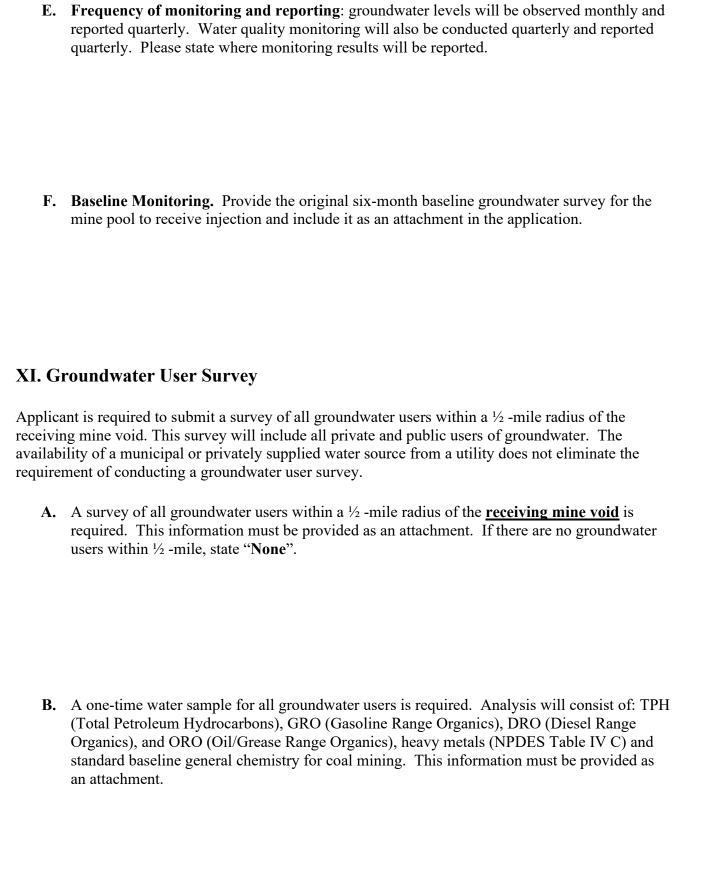
	pumped), associated NPDES permit numbers, outlet numbers, general water chemistry, and treatment methods.
P.	Provide <u>details</u> of mine water fate, quantities in/out/water balance and address elements associated with Probable Hydrological Consequences (PHC).
Q.	Provide any additional comments or information the applicant feels is pertinent or noteworthy concerning this proposed project and is relevant to application review.
UIC Per	nitoring Plan rmits are required to monitor water quality within the receiving mine void, surrounding water outside the mine void, and if needed, surface water.

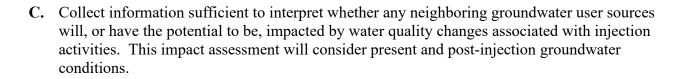
A. Identify in Section VIII - M, and on mapping, the locations of permanent receiving mine pool water quality monitoring sites (MPM). These locations will be down dip of injection point. Mine dewatering pumps often are good locations for monitoring mine water quality while injecting. Site specific conditions may require installation of permanent monitoring wells.



C. Identify in this section and on mapping, <u>surface water</u> monitoring locations that could be expected to be impacted by receiving mine pool water. Surface water monitoring sites will consist of one upstream and one downstream location of a receiving stream. The need for surface water monitoring will be dependent on site-specific conditions.

D. Analysis of monitored water will be dependent on type of material injected. For instance: AMD treatment sludge will require at a minimum; heavy metals (NPDES Table IV C) and standard baseline chemistry for coal mining.





XII. Abandonment Plan

A.	Provide details of ex	spected life, or le	ngth of time of this p	proposed injecti	on activity.

B. Provide **details** of expected post-injection mine pool water elevations.

C. Provide <u>details</u> of expected <u>post-injection</u> mine pool surface discharges, locations of discharges, pumped or gravity controlled, associated NPDES permit numbers, outlet numbers, treatment methods and expected general water chemistry characteristics.

D. Plugging and Abandonment of wells: Submit a description of the plan for the plugging and abandonment of each injection point, according to Title 47 CSR 13.13.7.f (Underground Injection Control).

XIII. Required Documentation

A. Map Documentation - Note: All maps MUST be P.E. certified. Submit a general site map (1" = 2000' [1:24,000] is acceptable); topographic map(s) providing the following:

Mine Maps must provide the following:

- 1. Show the extent of all adjacent/underlying/overlying, active/abandoned mine works within a 1-mile radius of the receiving mine void. Include company name, mine name and permit numbers. If NONE, state so.
- 2. Legibly show structural coal seam contours of receiving mine void.
- 3. Identify **current** and **maximum** mine pool elevations.
- 4. Identify all Class 5 Type 5X13 injection points identified in Section VIII J.
- 5. Show flow direction arrows in receiving mine pool.
- 6. Identify all injection points to be <u>added/deleted</u> identified in Section VIII K.
- 7. Identify all **Groundwater Monitoring** Points identified in Section VIII L.
- 8. Identify all **Receiving Mine Pool Monitoring Site** locations identified in Section VIII M.
- 9. Identify all Receiving Mine Pool Dewatering Site locations identified in Section VIII N.
- 10. Identify all underground mine seals.
- 11. Identify mine barrier thicknesses between receiving mine void and adjacent mine voids on mapping.
- 12. Provide "<u>Depth of Cover Map</u>" with contour lines showing distance between receiving mine void and the surface.
- 13. Identify <u>all</u> surface and underground piping associated with the proposed injection activity.
- 14. Identify ½ -mile radius from each existing and proposed injection well.
- 15. Identify all groundwater supply sources within a radius of ½ -mile around the receiving mine void (include public and private drinking water wells, springs, and seeps). If NONE, state so.
- 16. Identify all applicable details, including surface water features and NPDES outlets and permit numbers associated with this permitting activity.
- 17. Identify the locations of current mine discharge points, future mine discharge points, portals, shafts, access points. Include surface elevation and status (proposed, existing, abandoned, sealed).
- 18. Include the local strike and dip on each map.
- 19. Include any other pertinent feature that will influence operations of injection activities.

B. Flow Chart – Submit the following:

1. A Flow Chart that details all elements of the existing and proposed underground injection activity. Drawing should include identification of injectate source, treatment sites, injection sites, dewatering sites, monitoring sites, receiving mine void(s), elevations, pipe diameters, flow direction, gravity or pumped flow, max flow rates, sample ports (with coordinates), mine void discharge sites, receiving streams, NPDES and Article 3 permit numbers.

C. Construction Details – Submit the following:

- 1. A representative geologic cross-section of the proposed injection activity area. Identification of subsurface layers, all aquifers, and designating the receiving void.
- 2. Provide a detail drawing of each injection well including piping to the well head, sample port with coordinates, all valves and controls necessary to manage the injection flow rate, borehole and pipe dimensions, surface and mine void elevations, materials and details of the construction.

3. If the injection point is other than a well (i.e. fan shaft, portal, etc.), describe the method by which the injectate will be conveyed in the receiving void. Include details such as dimensions of pipelines, materials, etc.

- **D.** Drilling Plugging and Abandonment: Provide the following documents if applicable.
 - 1. Well Installation Document.
 - 2. Pre-Closure Notification Document.
 - 3. Closure Notification Document.
 - 4. Safety precautions for drilling into mine voids.

E. Baseline Chemistry Details:

1. Provide analyses (performed by a laboratory certified by the State of West Virginia) of all parameters on the Waste Characterization Analysis form (Section XIV) for <u>each</u> injectate source and include certified lab sheets for each analysis.

F. Submit a complete copy of the Groundwater Protection Plan (GPP)

If no GPP exists, please complete one in accordance with Title 38 CSR 2F of the Code of West Virginia. The GPP much include all UIC approved chemicals currently on site. **This application will not be processed without the current, approved GPP.**

G. Legal Right to Inject:

Please present copies of signed and notarized documents showing that, should this permit be issued, applicant has the legal right to inject into the proposed mine void including any, and all down dip workings likely to receive water from the target void. This document should provide specific approval from the mineral owner to allow the proposed injection activity to occur. **Without proper documentation, application will be denied.**

XIV. Waste Characterization Analysis

General Chemistry		Sample Source ID:		
Acidity		mg/1 CaCo ₃		
Alkalinity		mg/1 CaCo ₃		
BOD		mg/1		
Bicarbonate	Total:	mg/1	Dissolved:	mg/1
Calcium	Total:	mg/1	Dissolved:	mg/1
Chloride	Total:	mg/1	Dissolved:	mg/1
COD		mg/1		
Iron	Total:	mg/1	Dissolved:	mg/1
Magnesium	Total:	mg/1	Dissolved:	mg/1
Nitrate	Total:	mg/1	Dissolved:	mg/1
Nitrite	Total:	mg/1	Dissolved:	mg/1
Potassium	Total:	mg/1	Dissolved:	mg/1
PH		s.u.		
Sodium		mg/1		
Specific Conductivity		Umhos/cm ³		
Sulfate	Total:	mg/1	Dissolved:	mg/1
Total Dissolved Solids		mg/1		
Total Suspended Solids		mg/1		
Organics - Baseline		/4		
Acrylamide		mg/1		
(BTEX) Benzene		mg/1		
Toluene		mg/1		
Ethylbenzene		$\frac{\text{mg/1}}{\text{mg/1}}$		
Xylene	7000)	$\frac{\text{mg/1}}{\text{mg/1}}$		
Cumene (Isopropyl Benz	zene)	$\frac{\text{mg/1}}{\text{mg/1}}$		
Ethylene Glycol Benzo [A] Pyrene		$\frac{\text{mg/1}}{\text{mg/1}}$		
Phenols		mg/1		
		$\frac{\text{mg/1}}{\text{mg/1}}$		
(TPH) GRO DRO		$\frac{\text{mg/1}}{\text{mg/1}}$		
ORO		$\frac{\text{mg/1}}{\text{mg/1}}$		
TOC		mg/1		
Vinyl Chloride		mg/1 mg/1		
v myr Cmonde		111g/ 1		

Inorganics - Baseline

Aluminum	Total:	mg/1	Dissolved:	mg/1
Antimony	Total:	mg/1	Dissolved:	mg/1
Arsenic	Total:	mg/1	Dissolved:	mg/1
Barium	Total:	mg/1	Dissolved:	mg/1
Beryllium	Total:	mg/1	Dissolved:	mg/1
Boron	Total:	mg/1	Dissolved:	mg/1
Cadmium	Total:	mg/1	Dissolved:	mg/1
Chromium	Total:	mg/1	Dissolved:	mg/1
Copper	Total:	mg/1	Dissolved:	mg/1
Cyanide	Total:	mg/1	Dissolved:	mg/1
Fluoride	Total:	mg/1	Dissolved:	mg/1
Lead	Total:	mg/1	Dissolved:	mg/1
Manganese	Total:	mg/1	Dissolved:	mg/1
Mercury	Total:	mg/1	Dissolved:	mg/1
Nickel	Total:	mg/1	Dissolved:	mg/1
Selenium	Total:	mg/1	Dissolved:	mg/1
Silver	Total:	mg/1	Dissolved:	mg/1
Thallium	Total:	mg/1	Dissolved:	mg/1
Zinc	Total:	mg/1	Dissolved:	mg/1

XV. Permit Re-issuance Fee & Annual Fee Calculations

Complete this Permit Reissuance Fee Worksheet and return it with the completed Permit Reissuance Application and a check for the **Actual Permit Reissuance Fee** amount. The minimum Permit Application Fee is \$25.00, and the maximum Permit Application Fee is \$1,500. **Note:** Permits are in effect for a period of five years during which an Annual Permit Fee is due on each anniversary of the issuance of the Permit. The minimum Annual Permit Fee is \$25.00, and the maximum Annual Permit Fee is \$500.

A. Permit Application Fee Calculation – For New Permit Application Only.

Formula for calculation of Permit Application Fee:

Volume Fee (Table A) x Treatment Factor (Table B = 3 for Type 5X13 wells) x Well Type Factor

(3 for Type 5X13 wells) = Fee

Table A – Volume Fees

Volume (gallons per day)	Fee
<250	\$ 50.00
250 – 500	\$ 75.00
501 – 1000	\$150.00
1001 – 5000	\$200.00
5001 - 50,000	\$400.00
50,001 - 100,000	\$600.00
>100,001	\$850.00

Table B – Treatment Factors

Level of Treatment	Factor
No Treatment	3
Primary Treatment	2.5
Secondary Treatment	2
Tertiary Treatment	1.5
>Tertiary Treatment	1

\$	X		X		= \$	(Calculated Permit Fee)
	(Table A)	(Table B)		(Well Type Factor)		(Calculated Permit Fee)
	Calcul	ated Fee is greater	than	han \$25.00, the Act \$1500.00, the Actus	al Fee i	s \$1500.00.
	Actual I Cili	nt Application	rec	ioi tilis i acility	• Ф	
3. An	nual Permit Fee (Calculation				
Form	ula for calculation	of Annual Permit Fo	ee: A	ctual Permit Applicat	ion Fee	x 0.333 = Fee
Calcu	late the Annual Per	mit Fee for this faci	lity he	ere:		
		\$	(P	ermit Application Fee)	_ X 0.3	(Calculated Fee)
Note:	\$500.00, the An ı		. This			t is greater than versary date of permit

Please be advised that, in accordance with the Code of West Virginia, Title 47 Series 55, Groundwater Protection Act Fee Schedule, Section 3.5.17, a Groundwater Protection Fee of \$15.00 per year will be assessed for every Class 5 injection well permit. This is a separate fee and is in addition to the Annual Permit Fee.

XVI. Certification

All permit applications must be signed by an authorized signatory authority, i.e.: a corporate officer for a corporation, a general partner for a partnership, the proprietor of a sole proprietorship, a principal executive or ranking elected official for a public agency, or any person who has been granted signatory authority by an existing signatory authority.

Α.	Name and Title of authorized signatory authorized	ority:			
		(Please type/print)			
В.	Signature and Date: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and/or imprisonment."				
	(Signature)	(Date)			
XVII.	Financial Responsibility				
A.	Name and title of person(s) who will:1. Assume financial responsibility in the event of environment contamination.2. Maintain resources necessary for proper closure of injection point(s).				
	Name (Type or Print)	Title			
	Name (Type or Print)	Title			
В.	Signature(s) and date:				
	Signature	Date			
	Signature	Date			

Please submit one (1) complete Original application along with the appropriate fee to:

West Virginia Department of Environmental Protection

Division of Mining and Reclamation UIC Mining Program 601 57th Street SE Charleston, WV 25304-2345

Also

Please send Two (2) complete copies of this Application to appropriate MSHA office:

Carlos Mosley, District Manager	Brian Dotson, District Manager
District 3, MSHA	District 12, MSHA
604 Cheat Road	4499 Appalachian Hwy.
Morgantown, WV 26508	Pineville, WV 24874
David (Scott) Mandeville, District Manager District 4, MSHA 1293 Airport Road Beaver, WV 25813	