

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

Part III - Operation Plan

A. General Operation Information

1. Describe the type and method of coal mining procedures and major equipment to be used. (780.11)

See Attachment III-A-1

Major equipment to be used includes but may not be limited to:

- Backhoes
- Off Road Haulers
- Loaders
- Drills
- Service Trucks
- Dozers
- Track Backhoes
- Bulk Anfo Trucks

2. Describe the sequence and timing of increments to be mined (as shown on permit map) over the total life of the permit. (780.11)

The timing increments are as follows:

<u>Increment No.</u>	<u>Acres</u>	<u>From</u>	<u>Estimate Life</u>
1	131	Reclamation Phase	
3	100	Currently Being Mined	
4	144	End of Increment #3	12 Months
5	90	End of Increment #4	12 Months
2	54	End of Increment #5	12 Months
6	41	Issuance of Permit	60 Months

The sequence of mining operations will be generally as follows:

- 1) Construction of Sediment Control Structures
- 2) Clearing and Grubbing
- 3) Topsoil Removal (if required)
- 4) Overburden Drilling and Blasting
- 5) Overburden Removal
- 6) Coal Recovery
- 7) Re-Grading
- 8) Revegetation

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

ATTACHMENT III-A-1
TYPE AND METHOD OF COAL MINING PROCEDURES

The area method of surface mining will be used. Preparation will consist of (a) timber removal (b) topsoil removal (if required) (c) drilling and blasting of overburden (d) overburden removal (e) coal removal (f) regrading and revegetation. Once the site has been regraded and topsoiled (if required) soil samples will be analyzed (where required) and proper nutrients will be added before revegetation. Any problem that may arise will be handled by proper consulting personnel utilizing various support equipment and support personnel.

Increment No. 1 has been mined as previously approved and is currently in reclamation phase. Increments No. 3 is currently being mined. Increment No. 4 and No. 5 will be mined after mining in Increment No. 3 is completed. Increment No. 2 which is proposed to be mined will be divided into two areas; eastern western areas as proposed by this revision.

Mining of Increment No. 3 will continue at the current highwall as shown on the Operations Map. Pits will generally align northeast to southwest direction with advancement to the south. Spoil material from the first pits will be spoiled within the previously mined areas and subsequent pits. An area at the east end of the pits will be left open and a highwall will be left open to start mining in Increment No. 4. A letter asking for a delay in contemporaneous reclamation was submitted and approved with the original permit application. Mining will continue in this manner until the limits of the increment are reached.

Mining within Increment No.4 will commence along the west side of Increment No. 4 with the highwall left open from Increments No. 3 and area transferred to Increment No. 4 in the NW 1/4 of the SW 1/4, and SW 1/4 of the NW 1/4 of Section 5. Pits will generally align in a north to south direction with advancement to the east. Spoil material from the first pits will be spoiled within the previously mined areas, and subsequent pits. Mining will continue in this manner until the limits of the increment are reached.

A twenty-four (24) month delay in contemporaneous reclamation will be requested from the Director for the north ends of cuts between Basin 037 and Basin 043 within Increment No. 4 located within the SE 1/4 of the NW 1/4 and SW 1/4 of the NE 1/4 of Section 5 to remain open until mining has commenced within the western portion of Increment No. 2.

Mining within Increment No. 5 will commence along the west side in the SW 1/4 of the SE 1/4 of section 5. Pits will generally align in a north to south direction with advancement to the east. Spoil material from the first pits will be spoiled within the previously mined areas and subsequent pits. Mining will continue in this manner until the limits of the increment are reached.

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

A eighteen (18) month delay in contemporaneous reclamation will be requested from the Director for the north ends of cuts west of Basin 045 within Increment No. 5 located within the NW 1/4 of the SE 1/4 and NE 1/4 of the SE 1/4 of Section 5 to remain open until mining has commenced within the eastern portion of Increment No. 2.

Mining of Increment No. 2 will begin with the highwall left open along the north boundary of Increment No. 4 just Northeast of Basin 037E. Pits will generally align in a Northwest to Southeast direction with advancement to the Northeast until the Permit Boundary is reached. Also mining of Increment no. 2 will begin on the final highwall of Increment No. 5 just East of Basin 043P where cuts align in a West to East direction with advancement to the North until the Permit Boundary is reached. Spoil material from the initial cuts will be placed in previous open pits and subsequent open pits in both locations. These two locations may be mined simultaneously or in reverse order from stated above until the limits of increment No. 2 are reached at the North Permit Boundary.

As approved in Revision R-2 the pool areas of Basins 038P, 042P, and 044P will be mined through as mining advances. The embankment and spillway system will not be disturbed during the mining of the pool areas.

Prior to beginning disturbance in the drainage area of Basin 043P it will be constructed and certified to the Regulatory Authority. Basin 043P will be mined through and reconstructed in spoil. The embankment and discharge structures will not be disturbed, but only the interior of the basin. The area of the interior of the basin which comes into contact with the spoil material will be lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the normal pool elevation to minimize infiltration and to provide a stable pool level. The material will be placed in horizontal lifts not to exceed 6 inches and compacted to 95% of the standard proctor. During the mining through process runoff will be pumped to Basin 045 to maintain control of the runoff. After the mining and coal removal within Basin 043 is completed, Basin 043 will be reconstructed and certified to the Regulatory Authority.

Prior to beginning disturbance in the drainage area of Basin 038 it will be constructed and certified to the Regulatory Authority. Basin 038 will be mined through and reconstructed in spoil. The embankment and discharge structures will not be disturbed, but only the interior of the basin. The area of the interior of the basin which comes into contact with the spoil material will be lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the normal pool elevation to minimize infiltration and to provide a stable pool level. The material will be placed in horizontal lifts not to exceed 6 inches and compacted to 95% of the standard proctor.

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

During the mining through process runoff will be pumped to Basins 036E and 037E to maintain control of the runoff. After the mining and coal removal within Basin 038P is completed, Basin 038P will be reconstructed and certified to the Regulatory Authority.

Prior to beginning disturbance in the drainage area of Basin 042P it will be constructed and certified to the Regulatory Authority. Basin 042P will be mined through and reconstructed in spoil. The embankment and discharge structures will not be disturbed, but only the interior of the basin. The area of the interior of the basin which comes into contact with the spoil material will be lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the normal pool elevation to minimize infiltration and to provide a stable pool level. The material will be placed in horizontal lifts not to exceed 6 inches and compacted to 95% of the standard proctor. During the mining through process runoff will be pumped to Basin 045 to maintain control of the runoff. After the mining and coal removal within Basin 042P is completed, Basin 042P will be reconstructed and certified to the Regulatory Authority.

Prior to beginning disturbance in the drainage area of Basin 044P it will be constructed and certified to the Regulatory Authority. Basin 044P will be mined through and reconstructed in spoil. The embankment and discharge structures will not be disturbed, but only the interior of the basin. The area of the interior of the basin which comes into contact with the spoil material will be lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the normal pool elevation to minimize infiltration and to provide a stable pool level. The material will be placed in horizontal lifts not to exceed 6 inches and compacted to 95% of the standard proctor. During the mining through process runoff will be pumped to Basin 041P and Basin 042P to maintain control of the runoff. After the mining and coal removal within Basin 044P is completed, Basin 044P will be reconstructed and certified to the Regulatory Authority.

See Attachment III-A-1, Operations Map for cut sequence.



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Facsimile: (205) 295-3114 - Main Building
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April 25, 2012

Dr. Randall C. Johnson, Director
Alabama Surface Mining Commission
P. O. Box 2390
Jasper, AL 35502

RE: Black Warrior Minerals, Inc.
Manchester East Mine
P-3922 / Revision R-3

Dear Dr. Johnson:

Black Warrior Minerals, Inc., requests a twenty-four (24) month delay in contemporaneous for the north ends of cuts between Basin 037 and Basin 043 within Increment No. 4 located within the SE 1/4 of the NW 1/4 and SW 1/4 of the NE 1/4 of Section 5 to remain open until mining has commenced within the western portion of Increment No. 2.

Black Warrior Minerals, Inc., also requests a eighteen (18) month delay in contemporaneous reclamation for the north ends of cuts west of Basin 045 within Increment No. 5 located within the NW 1/4 of the SE 1/4 and NE 1/4 of the SE 1/4 of Section 5 to remain open until mining has commenced within the eastern portion of Increment No. 2.

Please respond in writing or via email with your decision on the delays in contemporaneous reclamation. Also, if you have any questions or require additional information, please feel free to call me at (205)295-3131 or smiles@percengineering.com.

Thank You,
PERC Engineering Co., Inc.

A handwritten signature in blue ink that reads "Stephen Miles".

Stephen Miles, E.I.
(for Black Warrior Minerals, Inc.)

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

3. Attach a narrative explaining the construction modification, use, maintenance, and removal of the following facilities: (780.11)
 - (a) Coal removal, handling, storage, cleaning and transportation structures and facilities;
 - (b) Spoil, coal processing waste and non-coal waste removal, handling, storage, transportation and disposal structures and facilities;
 - (c) Mine facilities; and
 - (d) Water pollution control facilities.

See Attachment III-A.-3 and the response in the original permit and subsequent revision applications.

4. Describe the means to be used to maximize the use and conservation coal reserves in the permit area. (780.18, 816.59)
Some of the measures are:
 - A) Mining the deepest seam that is economically feasible to mine.
 - B) Rehandling overburden in order to maximize coal recovery that would normally be lost in the toe of the spoil.
 - C) Processing and blending coal that in its "raw" condition would not have a market.
5. Describe measures to be taken to ensure that all debris, acid-forming and toxic-forming materials and materials constituting a fire hazard are disposed of in accordance with 816.89 and 816.103; include contingency plans to prevent sustained combustion of such material. (780.18)

See the response in the original permit and subsequent revision applications.

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

Attachment III-A-3

3.a) Crushing and screening of the coal to be mined will be performed utilizing a portable plant transported to the site by truck and erected on site. Regular maintenance will consist of routine lubrication, oil checking and changing as necessary, etc. and will be conducted during the period the crusher and/or screen is in use. Routine maintenance will be required to assure that the road continually meets performance standards and will consist of periodic grading, resurfacing, dust suppression and maintenance of sediment control facilities. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this process. When no longer needed the plant will be disassembled and transported offsite by trucks.

All haulage roads shall be designed to the following minimum criteria and/or prudent engineering practice for the design of haulroads, except where said haulroad is a public highway. See Part III-B-5 for primary and ancillary roads detailed design plans.

To the extent possible roads will be located on ridges or on the most stable available slopes to minimize erosion, downstream sedimentation and flooding in an effort to prevent adverse effects to fish, wildlife and related environmental values.

Prior to construction, the roadway areas shall be cleared, grubbed, and all topsoil shall be removed and stockpiled. Vegetation will not be cleared for more than the width necessary for the road and associated ditch construction.

Roads will be constructed by placing and compacting lifts of suitable subgrade material to a grade suitable for the intended use of the road. Drainage pipes will be placed in embankments or cuts as necessary to assure proper drainage. Once the desired grade of subgrade material has been attained and all drainage structures installed roads will be surfaced with available gravel, rock, chert or other suitable material as approved by the state regulatory agency sufficiently durable for the anticipated volume of traffic weight and speed of vehicles to be used. The surface will be compacted until a desirable grade and surface is attained. No toxic or acid forming substances will be used in this surface material. No sustained grade will exceed 10 percent unless deemed necessary, in which case appropriate sediment control facilities will be constructed. If grades of greater than 15 percent are required cross-over drains, ditch relief drains and road drainways will be located at a minimum of 300 foot intervals.

All roads will be constructed and maintained so as to have adequate drainage, using ditches, cross drains, and ditch relief drains. Drainage pipes will be placed in embankments or cuts as

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

necessary to assure proper drainage and hay bale check dams and silt fences will be used at strategic locations when necessary to control sediment runoff. Natural drainage ways will not be altered unless otherwise approved by the ASMC. For stability the side slopes of the road embankments and/or cuts will be seeded with temporary and perennial type grasses and mulched to aid in preventing erosion and to enhance germination of the seed. No modifications are expected and only routine maintenance will be required to maintain the surface of roads such as periodic grading and resurfacing. Spot seeded and mulching will take place as necessary to improve coverage of vegetation on side slopes and embankments. Haulroads and all routes of travel will be maintained with water and/or other materials to minimize fugitive dust emissions. Routine maintenance will be required to assure that all roads and Routes of Travel continually meets performance standards and will consist of periodic grading, resurfacing and dust suppression. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this process. Maintenance of erosion control facilities will include periodic removal of sediment from structures and repairs of areas damaged due to weather, etc. Unless retention of the roads is approved for post-mining land use the following procedures will apply. When no longer needed the roadbeds will be ripped, plowed and scarified. All road surfacing materials will be removed and placed within an open pit within the permit area. The natural drainage patterns will be restored by cutting slopes and shaping to blend with the natural drainage of surrounding areas. If necessary cross drains, dikes and water bars will be constructed to minimize erosion. Terraces will be used as necessary to provide long term stability on cut and fill slopes and to minimize erosion. Road surfaces will then be revegetated according to the reclamation plan approved for this permit application, which includes planting a mixture of up to 100 lbs. or more of various legumes and grasses.

Coal stockpiles, if determined necessary, will be located within the permitted and bonded area such that drainage from the area will be routed through one or more of the sediment basins that are to be constructed. In general an area will be graded to a relatively level state. Upon completion of the subgrade, a relatively impervious pad or liner will be constructed to a minimum thickness of 12 inches. The pad or liner will be made of a clayey material possessing a maximum permeability coefficient of 1×10^{-6} centimeters per second. The material will be placed in 6 inch compacted lifts to 95 percent of the standard proctor density. A pad will be constructed of coal material over the relatively impervious pad or liner with material created by cleaning the coal in the pit. The only modification to the stockpile areas may be to enlarge them and this operation, if necessary, will be handled in the same manner as new construction. Small

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

terraces and/or temporary diversions will be used as necessary to minimize surface runoff across the stockpile areas. These facilities will be maintained periodically along with the coal pad which will be maintained by grading and reshaping as necessary. Screening of coal to be mined will be performed utilizing a portable plant, transported to the site by truck and erected on site. Regular maintenance will consist of routine lubrication, oil checking and changing as necessary, etc. and will be conducted during the period the screen is in use. If concrete footings are used, they will be removed and hauled to an ADEM approved landfill during the reclamation phase. Waste from the screening operation will primarily consist of roots and woody debris which will either be burned or buried on site in the borrow pit areas. If burning is used, a burn permit from the Alabama Forestry Commission will be obtained. After the stockpile area has served its useful purpose the pad material that can not meet market specifications will be buried within the permit area no closer than 30 feet from any remaining highwalls and 100 feet from any drainage courses and a minimum of 10 feet above the bottom of the lowest coal seam being mined and will be placed under a minimum of four feet of the best available non-acid and non-toxic forming and non-combustible material.

- b) There is adequate spoil room available on site and excess spoil disposal facilities are not necessary. There will be no coal processing which generates waste so no coal waste disposal facilities are necessary. Any non-coal wastes will be disposed of in an approved offsite disposal facility.
- c) There will be no mine facilities at this site other than a portable office which will most probably be an office trailer or a converted mobile home and will be removed from the site soon after the end of the mining process. There is a possibility that during the life of the permit an equipment maintenance shop may be constructed at this site. If this decision is made the building will be located within the permitted and bonded area. Generally these buildings are constructed of sheet metal covering a wooden frame built around poles and are erected in a manner that will facilitate disassembly and relocation to another site after equipment is removed from the area. Any modification or addition to the structure would be of similar construction. Periodic maintenance including painting and winterizing will be done either by contractors or mine personnel. After mining is completed and the equipment is removed from the site, the building will be disassembled and the various structural components will be transported via truck to another location.
- d) Water pollution control facilities, sediment basins, berm, and drainage ditches shall be constructed prior to mine

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

operation in a particular increment according to approved plans. These facilities will be used to control runoff from the mine and will be inspected and maintained until reclamation of the area is complete. Sediment basin construction and any subsequent modifications that may be required will be conducted under the general supervision of a qualified registered professional engineer and will be done in accordance with the approved design plans. The dam will be constructed of the best available soil material based on soil strength parameters and permeability. The dam core wall will bear on unyielding, relatively impermeable consolidated rock and the balance of the dam structure on the prepared compacted natural soil material present at the site. The dam will be built in horizontal lifts beginning at the lowest point of the foundation with each lift being thoroughly compacted. The drainage structure will be installed as outlined on the detailed design plans and shall be stabilized with respect to erosion using riprap, concrete paving, energy dissipators, vegetation or otherwise. After construction of the basin, the dam and all areas disturbed by construction will be limed, fertilized, and seeded with an appropriate mixture of grasses and legumes, then mulched.

Routine maintenance of the sediment basins will consist of spot seeding, fertilization and mulching to insure that a good vegetative cover is maintained on the dam and areas around the pond, repair and stabilization of any rills and gullies which may develop, repairs to discharge structures and erosion protection structures as required, and removal of entrapped sediment from the basins prior to its reaching the maximum level indicated on the approved plans. All sediment basins will be inspected quarterly by the operator's personnel and annually by a registered professional engineer and any required maintenance will be completed at the earliest possible time by the operator.

Upon completion of mining, successful reclamation and effluent standards being met, each sediment basin not remaining as a permanent water impoundment will be dewatered in an environmentally safe manner (such as siphoning, pumping, etc.) and reclaimed to approximate original contours by the following procedure:

A permanent diversion channel (designed for a 10 yr. -24 hr. precipitation event) shall be cut along the outer edge of the basin to re-route drainage around the basin and back through the stabilized spillway to allow for the reclamation of the sediment basin. The diversion channel shall be designed and grassed as per enclosed information. (See permanent diversion channel for basin disposal) Upon completion of the diversion channel the embankment will be breached to the existing sediment level to prevent the

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

impoundment of water. The breach will be graded to a minimum side slope of 2.5 to 1 and revegetated and/or riprapped as to prevent erosion and ensure the stability of the exposed breach. The remaining back slope of the embankment will be graded to a minimum 3 to 1 slope. The dewatered sediment basin will be seeded with some combination of the following: Fescue, bermuda, rye grass, canary grass, and willows. After seeding the area will be mulched. Any additional sediment or embankment material not used to meet approximate original contour, if nontoxic, will be spread in thin layers within the permit area and vegetated as stated in the reclamation plan. All toxic material encountered in the basin disposal will be buried and covered with 4 feet of nontoxic and noncombustible material and vegetated a stated in the reclamation plan.

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

B. Engineering Plans

All cross-sections, maps and plans related to operations, reclamation and structures must comply with Section 780.10. Plans, appropriate calculations and conclusions shall be presented in a clear and logical sequence and shall take into account all applicable factors necessary to evaluate the proposed plan or design.

1. Existing Structures. (780.12, 786.21)

- (a) Describe each existing structure to be used, its location, current condition, approximate dates of construction and evidence (including relevant monitoring data) showing whether or not the structure meets the performance standards of Subchapter K or Subchapter B, whichever is more stringent and demonstrate whether or not the use of existing structures will pose a significant harm to the environment or public health or safety.

None.

- (b) If an existing structure requires modification or reconstruction to meet the performance standards, attach a compliance plan which includes design specifications, construction schedule, monitoring procedures, and evidence that the risk of harm to the environment or public health or safety is not significant during modification or reconstruction.

None.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

2. Ponds, impoundments, banks, dams and embankments. (780.25)

- (a) Submit a general plan which complies with Section 780.25(a)(1) for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam or embankment to be located within the proposed permit area.

See attachment III-B.-2.A

- (b) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.46 for each sedimentation pond to be constructed on the increment you currently propose to mine. If the sediment pond is to remain as a permanent water impoundment, design plans shall also comply with Section 816.49.

See attachment III-B.-2.A

- (c) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.49 for each temporary or permanent water impoundment to be constructed on the increment you currently propose to mine.

See attachment III-B.-2.A

- (d) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.81-816.85 for each coal processing waste bank to be constructed on the increment you currently propose to mine.

None proposed.

- (e) Submit detailed design plans which comply with Sections 780.25(a)(2 and 3) and 816.91-816.93 for each coal processing waste dam and embankment to be constructed on the increment which you currently propose to mine.

None proposed.

3. Diversions. (780.29, 816.43, 816.44)

Are diversions of overland flow or stream channel diversions proposed?

(XXX) Yes () No

If yes, complete the following:

- (a) Is the diversion to be permanent?

(XXX) Yes () No

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

CERTIFICATION STATEMENT:

I hereby certify that Attachment III-B.-2.A prepared for Black Warrior Minerals, Inc.'s Manchester East Mine, Revision R-3 are in accordance with the Regulations of the Alabama Surface Mining Commission as adopted by Act 81-435 of December 18, 1981 and amended to date, and are true and correct to the best of my knowledge and belief.

Leslie G. Stephens

Leslie G. Stephens, P.L.S. & P.E.
AL Registration #14117-E

03/07/2012
Date



Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

ADDENDUM TO THE GENERAL PLAN

The general plan is modified as follows. Add Basin 043 and submit detailed design plans. Basin 043 will replace Basins 009, 039, 040, and 041. Basin 043 will be constructed and certified to the Regulatory Authority allowing Basins 039, 040, and 041 to be removed. Prior to beginning disturbance in the drainage area of Basin 043 it will be constructed and certified to the Regulatory Authority.

The general plan now consists of constructing six(6)proposed basins, Basins 038, 042, 043, 044, and 045 for the life of the mine. Detailed design plans for the basins will be submitted to the regulatory authority and upon written approval from them the basins will be constructed and certified to the Regulatory Authority prior to disturbance in their drainage areas.

Basins 038, 042, 043, and 044 will be mined through and reconstructed. Only the pool areas will be mined through with the upstream toe and embankment areas left undisturbed.

Basins 008A,036, 037, 042, 043, 044 and 045 are to remain as permanent water impoundments, fish and wildlife habitat. Data to qualify the basins as permanent water impoundments will be submitted to the regulatory authority prior to Phase II Bond Release. (See attached data and watershed map for basin location and preliminary hydrologic information).

The stream located south of Basin 043 was found to be dry on 11/15/2011 and documented with Photo 1 and Photo 2. The locations of the photos are identified on the Watershed Map. Also, the US Corps of Engineers, Nation Wide Permit #21 identifies the entire section of the stream south of and within the pool area of Basin 043 which is proposed to be added by this revision as intermittent. See Part II-1(a)-5, US Corps of Engineers Nation Wide Permit #21.

Geologic investigations of the area indicate layers of sandstone, siltstone, shale and minor amounts of bituminous coal and underclay. The coal to be mined by Black Warrior Minerals, Inc., will be confined to the Lick Creek and Jefferson seams. The strata in the area is characterized by small scale normal faulting and gentle open folding.

All surface drainage from the proposed mining area flows into Spring Creek.

All diversions are to be permanent (See diversion ditch criteria).

No existing or proposed underground mines are known to exist within 500' of the permit boundary.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

See Attachment III-B-2(a), Watershed Map.

See Attachment III-B-2(a), Basin 043 Detailed Design Plans.

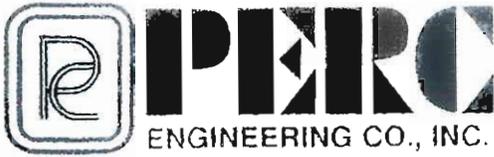
See Attachment III-B-2(a), Stream Photos.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

Attachment III-B-2-A

Basin No.	Location	Drainage Area (Acres)
038	NW 1/4 of NE 1/4, and SW 1/4 of NE 1/4, Section 5	15.0
043	NW 1/4 of SE 1/4, Section 5	101.0
042	SW 1/4 of NE 1/4, Section 5	6.0
044	SW 1/4 of NE 1/4 and SE 1/4 of NE 1/4, Section 5	14.0

All basins are located in Section 5, Township 13 South, Range 7 West; all within Walker County, Alabama, as found on the Manchester USGS Quadrangle.



Telephone: (205) 384-5553
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January 30, 2012

Mr. Andrew Burroughs
Mining & Natural Resources Section
NPDES Permits Branch
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, AL 36110-2059

RE: Black Warrior Minerals, Inc.
Manchester Mine NPDES Administrative Update
AL0025399

Dear Mr. Burroughs:

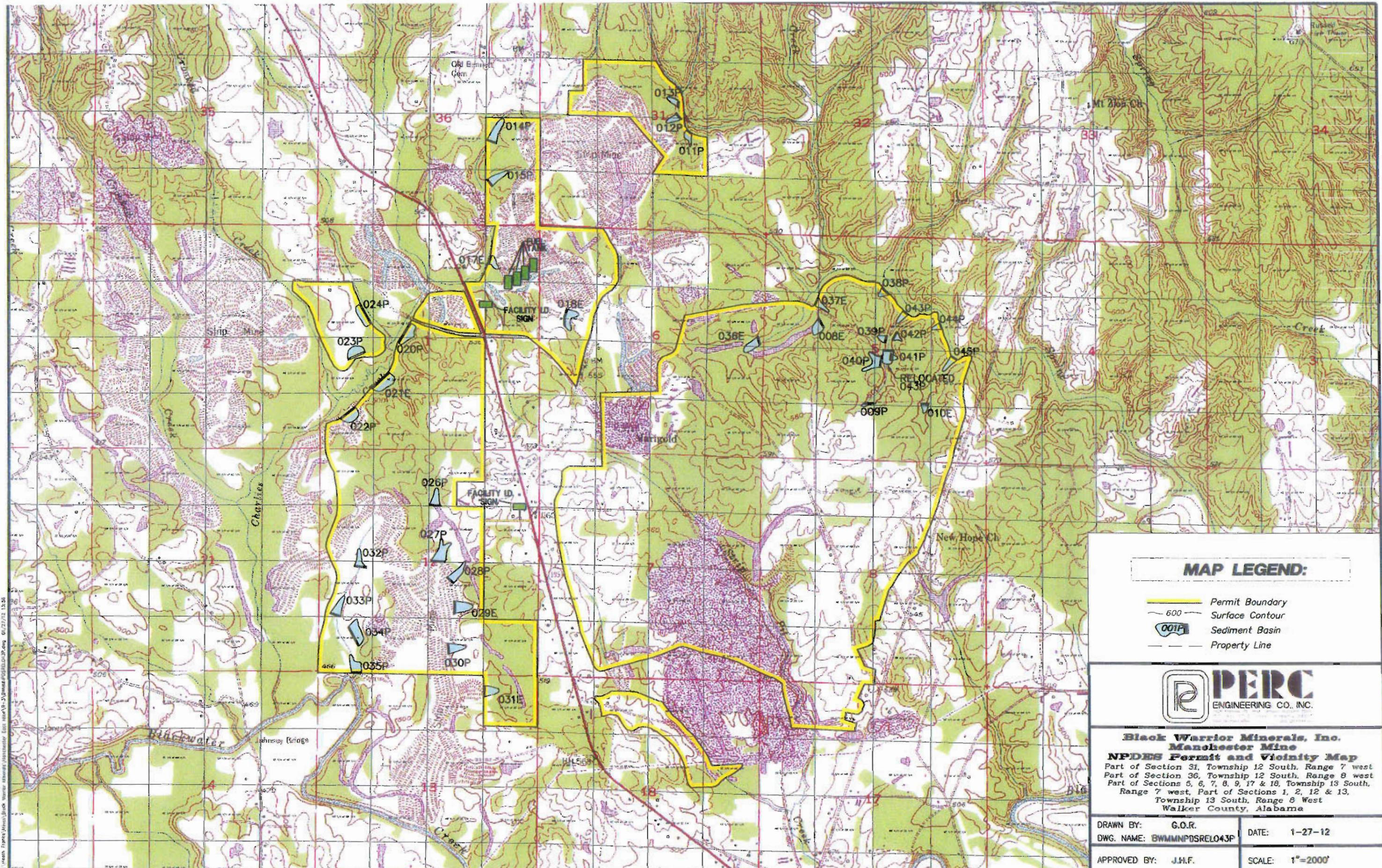
Attached please find attached updated pages for the Manchester Mine NPDES application for the relocation of Outfall 043P for the above referenced facility.

If you require additional information, please feel free to call me at (205) 295-3112.

Thank You,
PERC Engineering Co., Inc.

A handwritten signature in black ink that reads 'Heath Franks'. The signature is written in a cursive, flowing style.

Heath Franks
Environmental Scientist
(205) 295-3112
hfranks@percengineering.com
For Black Warrior Minerals, Inc.



MAP LEGEND:

-  Permit Boundary
-  600 Surface Contour
-  Sediment Basin
-  Property Line



Black Warrior Minerals, Inc.
Manchester Mine
NPDES Permit and Vicinity Map
 Part of Section 31, Township 12 South, Range 7 west
 Part of Section 36, Township 12 South, Range 8 west
 Part of Sections 5, 6, 7, 8, 9, 17 & 18, Township 13 South,
 Range 7 west, Part of Sections 1, 2, 12 & 13,
 Township 13 South, Range 8 West
 Walker County, Alabama

DRAWN BY: G.O.R.	DATE: 1-27-12
DWG. NAME: BWMMNPDSRELO43P	
APPROVED BY: J.H.F.	SCALE: 1"=2000'

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LANCE R. LEFLEUR
DIRECTOR



ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

February 14, 2012

Roger W. Perry
President
Black Warrior Minerals, Inc.
Post Office Box 1190
Sumiton, Alabama 35148

RE: Outfall 043P Relocation Request
Manchester Mine
NPDES Permit AL0025399
Walker County (127)

Dear Mr. Perry:

The Department has received an Outfall Relocation Request letter dated January 30, 2012, submitted by PERC Engineering Co., Inc. for Black Warrior Minerals, Inc. The request proposes the relocation of Outfall 043P at Manchester Mine from Latitude N 33° 56' 47," Longitude E -87° 17' 34" to Latitude N 33° 56' 38", Longitude E -87° 17' 39."

The Department has reviewed the document and has determined that relocation of Outfall 043P does not require a modification of the NPDES Permit. Therefore, the request is approved.

If you have any questions regarding this matter, you may contact Andrew Burroughs at 334-274-4197 or aburroughs@adem.state.al.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Vernon H. Crockett". The signature is stylized and cursive.

Vernon H. Crockett, Chief
NPDES Stormwater Management Branch
Water Division

VHC/apb

File: BASF/1845

cc: Johnathan E. Hall, ADEM – Water Division
Andrew Burroughs, ADEM – Water Division

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)



Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

Attachment III-B-2-A

Pond Construction Criteria

The embankment for sediment basins (temporary and permanent) shall be designed and built using the following as minimum criteria:

1. The top of the dam shall be no less than 12 feet wide.
2. See design sheet for maximum and minimum embankment slopes.
3. The foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundments, with a minimum static safety factor of 1.5 for the normal pool with steady seepage saturation conditions, and a seismic safety factor of at least 1.20.
4. The dam shall be constructed with a cutoff trench based upon prudent engineering practices for the site. The cutoff shall be located on the dam centerline and be of sufficient depth to extend into a relatively impervious material from which the core of the dam shall also be constructed.
5. The embankment foundation area shall be cleared of all organic matter, all surfaces sloped to no steeper than 1v:1h, and the entire foundation surface scarified.
6. The entire embankment and cutoff trench shall be compacted to 95 percent density, based on standard proctor as outlined in ASTM.
7. The material placed in the embankment shall be free of sod, roots, stones over 6 inches in diameter, and other objectionable materials. The fill material shall be placed and spread over the entire fill area, starting at the lowest point of the foundation, in layers not to exceed 12 inches in thickness. Construction of the fill shall be undertaken only at such times that the moisture content of the fill material will permit satisfactory compaction in accordance with paragraph 5.
8. The pool area of the basin will be cleared of timber and large undergrowth.
9. The primary decant system when consisting of a pipe shall be installed according to Class C pipe installation for embankment bedding.
10. The primary decant system shall be equipped with a device, or constructed, such as to insure that subsurface withdrawal is accomplished to prevent discharge of floating solids. If a channel is used as the primary decant a skimmer shall be installed to prevent floating solids from discharging.
11. A splash pad or riprap may be required under the discharge of the

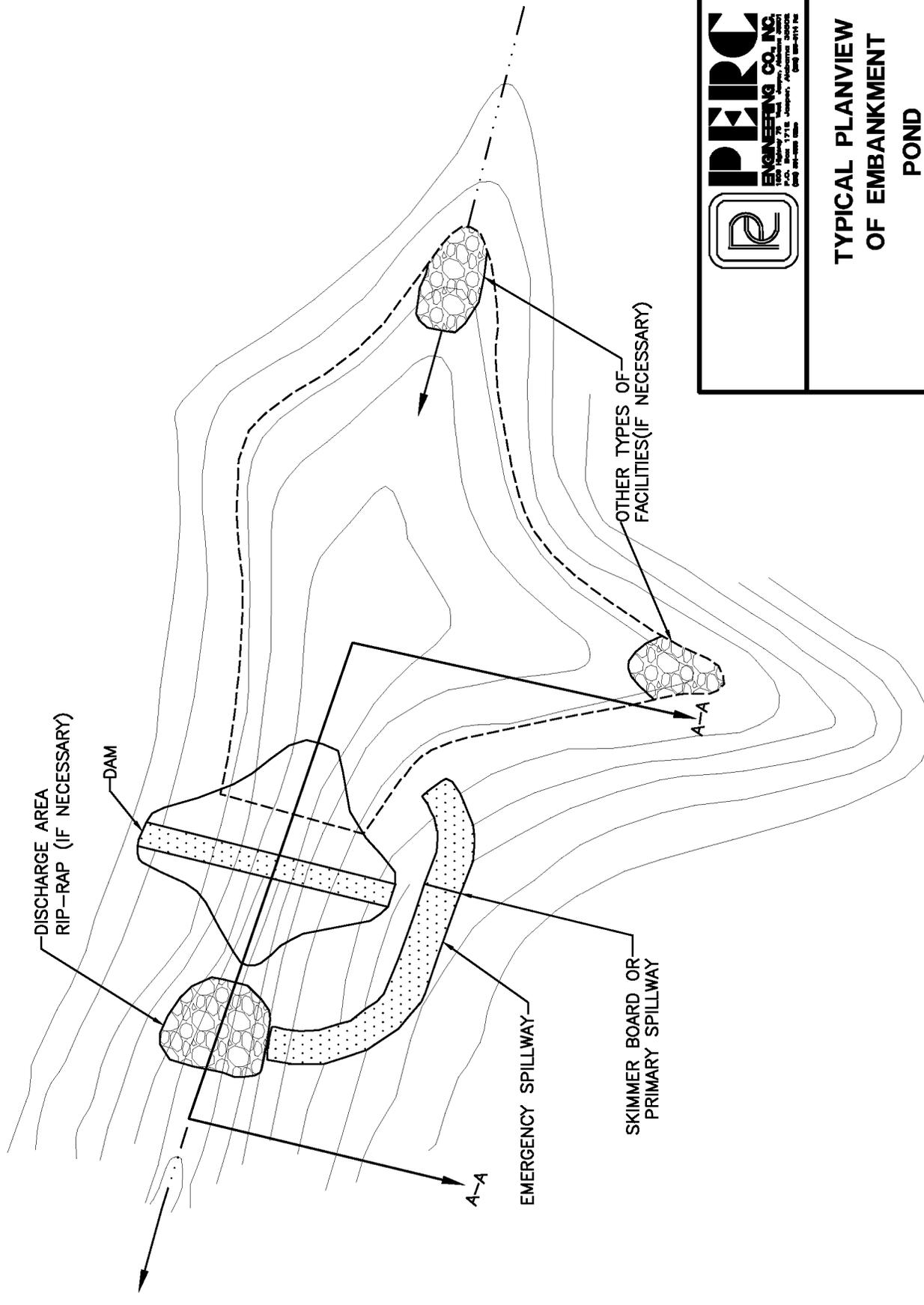
Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

primary decant system where necessary to insure that the discharge does not erode the embankment.

12. The combination primary and secondary decant system shall be designed to safely carry the expected peak flow from a 25 year - 6 hour storm. The entire emergency overflow spillway channel will be a stabilized channel and will be stabilized upon completion of construction as specified within the detailed design plans using prudent engineering measures. These measures may consist of lining the spillway with concrete or a durable rock riprap, or the spillway being constructed in consolidated non-erodible material and planted with a mixture or both annual and perennial grasses, or a combination of any or all of the above.
13. Sediment basins using a single spillway system shall be an open channel of non-erodible construction consisting of concrete, durable rock riprap or its being constructed in consolidated non-erodible material as specified in the detailed design plans.
14. The settled embankment for temporary impoundments shall be a minimum of 1.0 foot above the maximum water elevation for the runoff from a 25 year - 6 hour, or a 10 year - 24 hour precipitation event (whichever has the greatest runoff). The settled embankment for permanent impoundments shall be a minimum of 1.0 foot above the maximum water elevation for the runoff from a 25 year - 6 hour, or a 10 year - 24 hour precipitation event (whichever has the greatest runoff).
15. If basins are built in series, then the combined decant system for each shall be designed to accommodate the entire contributing drainage area.
16. The dam and all disturbed areas shall be seeded with both perennial and annual grasses, fertilized and mulched in order to insure erosion is minimized. Hay bales or riprap may be placed at the toe of the dam immediately upon completion of construction.
17. The constructed height of the dam shall be increased a minimum of 5 percent over the design height to allow for settlement over the life of the embankment.
18. Final graded slopes of the entire permanent water impoundment area shall not exceed 2.5H-1.0V to provide for adequate safety and access for proposed water users.
19. Prior to Phase II bond release, additional data concerning water quality, water quantity, depth, size, configuration, postmining land use, etc., for each proposed permanent water impoundment, shall be submitted to the Regulatory Authority for permanent water impoundment approval.
20. All sediment basins will be inspected for stability, erosion, etc. two (2) times a month until removal of the structure or release of the reclamation bond.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

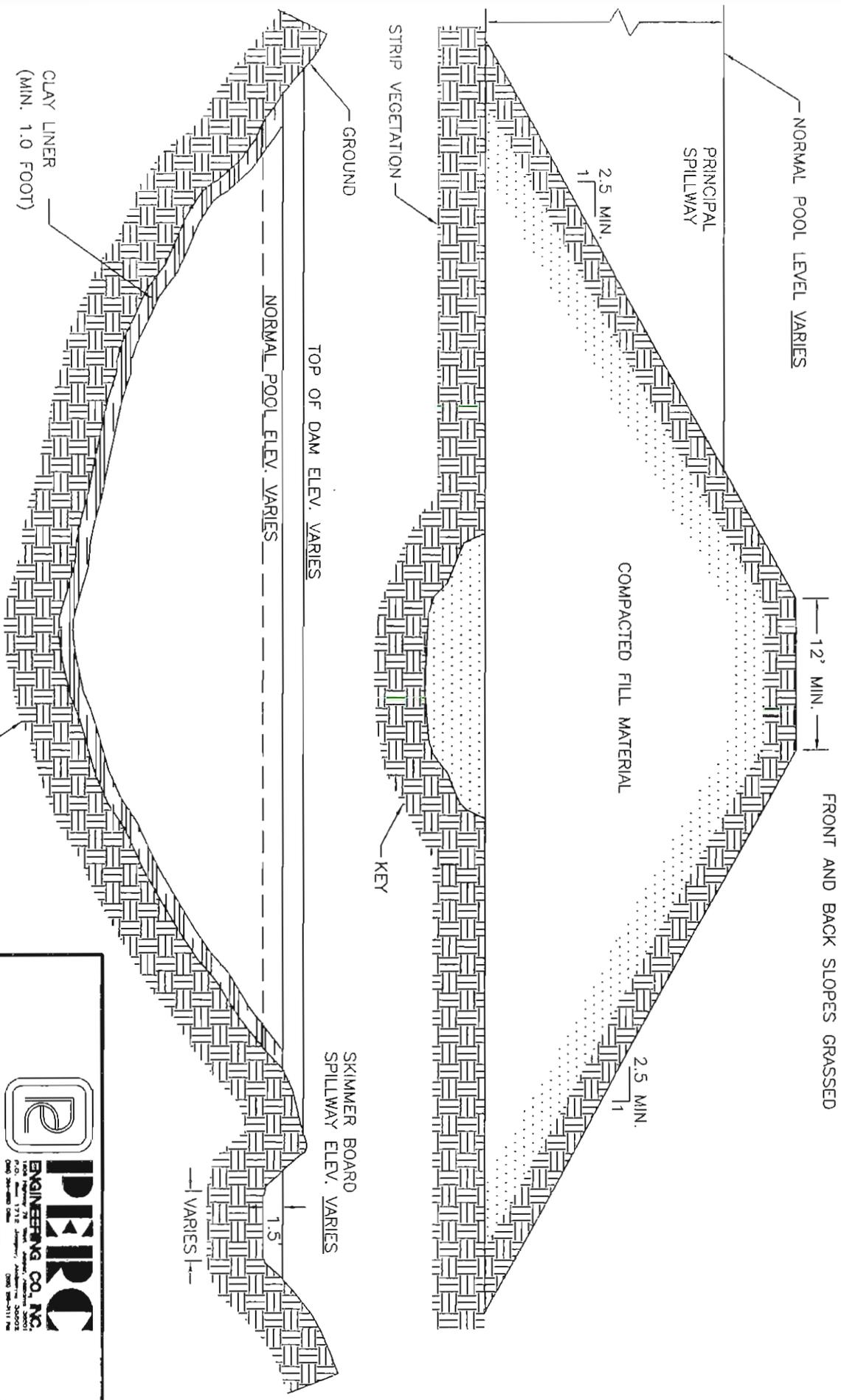
21. The embankment and spillway will be maintained by repairing any damage such as erosion, slope failure or spillway damage until removal of the structure or release of the performance bond.
22. All ponds shall be examined quarterly for structural weakness, instability, erosion, or other hazardous conditions and maintenance performed as necessary. Formal inspections shall be made on an annual basis, including any reports or modifications, in accordance with 880-X-10C-.20[1(j)] of the Alabama Surface Mining Commission Regulations.
23. Sediment will be removed from each pond when the accumulated sediment reaches the sediment storage volume as shown on the detailed design sheet.
24. Upon completion of mining, successful reclamation and effluent standards being met, each sediment basin not remaining as a permanent water impoundment will be dewatered in an environmentally safe manner (such as siphoning, pumping, etc.) and reclaimed to approximate original contours by the following procedure: A permanent diversion channel (designed for a 10 year - 24 hour precipitation event) shall be cut along the outer edge of the basin to re-route drainage around the basin and back through the stabilized spillway to allow reclamation of the sediment basin. The diversion channel shall be designed and grassed as per enclosed information. (See permanent diversion for basin disposal). Upon completion of the diversion channel the back slope of the dam shall be graded to a minimum 3H to 1V slope. The dewatered sediment basin area shall be seeded with some combination of the following: Fescue, bermuda, rye grass, canary grass and willows. After seeding the area shall be mulched. Any additional sediment or embankment material not used to meet original contour, if non-toxic, shall be spread in thin layers within the permit area and vegetated as stated in the approved reclamation plan. All toxic material encountered in the basin disposal shall be buried and covered with 4 feet of non-toxic material and vegetated as stated in the approved reclamation plan.
25. A qualified registered professional engineer or other qualified professional specialist, under the direction of the professional engineer shall conduct regular inspections during construction and upon completion shall inspect each basin for certification purposes.
26. Point source discharge embankments shall be constructed and abutments keyed into desirable material if at all possible. In the event that undesirable material is encountered, addition design and construction criteria shall be submitted prior to certification.



**TYPICAL PLANVIEW
OF EMBANKMENT
POND**

DRAWN BY:	P.T.O.	DATE:	8-10-05
DWG. NAME:	TYPICALS	APPROVED BY:	W.K.M.
		SCALE:	NONE

PLANVIEW OF EMBANKMENT POND



TYPICAL DAM DETAIL
NO SCALE

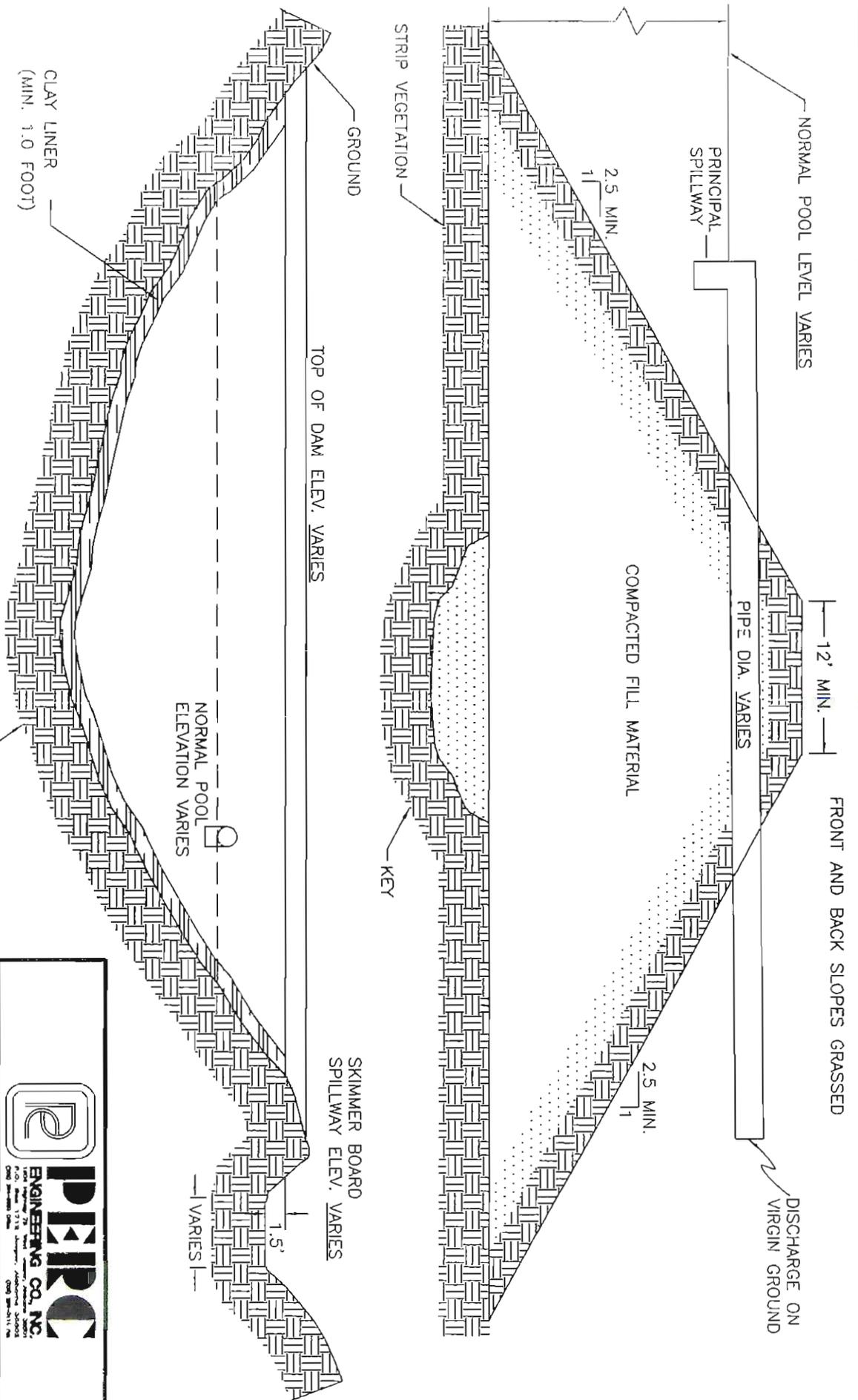
Lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the emergency spillway elevation to minimize infiltration and to provide a stable pool level with the clay placed in 6" lifts compacted to 95% of standard proctor.

ATTACHMENT III-B-2-A



TYPICAL DAM DETAIL
WITH CLAY LINER

DRAWN BY: DWG. NAME:	J.W.T. TYPICALS	DATE:	4/10/2009
APPROVED BY:	L.G.S.	SCALE:	NONE



TYPICAL DAM DETAIL
NO SCALE

Lined with 1.0 feet (minimum) of clay material with a permeability no greater than 1×10^{-6} cm/sec up to the emergency spillway elevation to minimize infiltration and to provide a stable pool level with the clay placed in 6" lifts compacted to 95% of standard proctor.

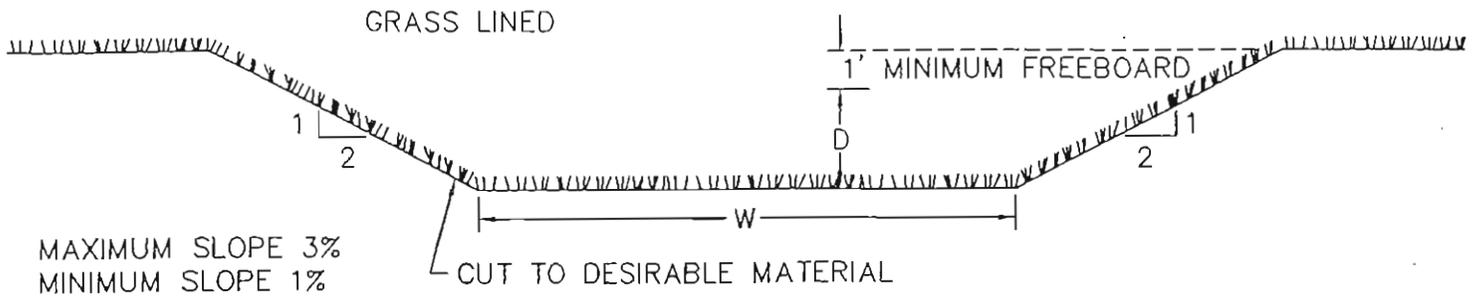
ATTACHMENT III-B-2-A



PEPC
ENGINEERING CO., INC.
1400 West 7th Street, Suite 2000
Denver, Colorado 80202
Tel: 303.733.1111 Fax: 303.733.1112

TYPICAL DAM DETAIL
WITH CLAY LINER

DRAWN BY: J.W.T. DWG. NAME: TYPICALS	DATE: 4/10/2009
APPROVED BY: L.G.S.	SCALE: NONE



$$Q = \frac{1.49}{N} A R^{2/3} S^{1/2}$$

$N(\text{loose stone or grass lined}) = 0.035$
 $A = \text{area}$
 $R = \text{area/wetted perimeter}$
 $S = \text{slope}$

* Grass lining: fescue, bermuda, rye grass

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 8.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-15	0.5
15-50	1.0
50-100	1.5
100-180	2.0
180-270	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 10.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-15	0.5
15-60	1.0
60-120	1.5
120-210	2.0
210-320	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 12.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-20	0.5
20-70	1.0
70-150	1.5
150-250	2.0
250-383	2.5

DIVERSION CHANNEL DEPTH (D) FOR WIDTH (W) 15.0 Ft.	
PEAK FLOW Q (CFS)	DEPTH D (Ft.)
0-25	0.5
25-90	1.0
90-180	1.5
180-300	2.0
300-450	2.5



PERC
ENGINEERING CO., INC.

*PERMANENT DIVERSION CHANNEL
FOR BASIN DISPOSAL*

DRAWN BY:

DATE:

APPROVED BY:

SCALE: NONE

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

5. Transportation Facilities (780.33, 780.37)

Primary Road 2E shall be extended from station 24+50 to station 52+46 with a low water crossing at DS1 located at station 34+22.

(a) Describe the measures to be taken to ensure the interest of the public and landowners affected are protected if disturbance within 100 feet of the right-of-way or relocation of a public road is proposed.

- 1) Safety berms will be constructed adjacent to roadways to be disturbed to contain traffic.
- 2) Proper signs, informing the traveling public of the disturbance, will be posted along the road right-of-ways 500 feet from the beginning of the disturbance.
- 3) All safety requirements of the appropriate public health and safety, will be followed.

(b) Describe any unique design, feature, or structure which is necessary for the road to meet the performance standards of Subchapter K using any necessary maps, plans, or cross-sections.

See Attachment III-B-5 for specifications.

See Attachment III-B-5, Detailed Design Plans for the extension of Primary Road 2P.

See Attachment III-B-5, Primary Road Location Map.

(c) Describe, in detail, the measures to be taken during construction, maintenance and use of the transportation facilities to prevent damage to fish and wildlife and their habitat; public and private property; and erosion, siltation, and pollution of water. Roads will be constructed with the required ditching for proper drainage. Roads will be maintained with a dozer and motor grader patrol as required. Water will be used to reduce erosion and dust emissions. Roads will be located on ridge tops where possible or on the most stable slopes to minimize erosion. Vegetation will not be cleared except as necessary for roadway and ditch construction. After construction of the roads is complete, vegetation will be established on cut and fill slopes that exist along the all roads. To the extent possible, roads will be located above the sediment basins to be constructed for the mining operation in an effort to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area and to comply with State and Federal water quality standards applicable to receiving waters and avoid the alteration of the normal flow of water in streambeds or drainage channels while preventing or controlling damage to public or private property. Where it is not possible or is impractical to locate roads in this manner, sediment control

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

devices such as silt fencing, hay bale check dams and rock filter check dams will be used as necessary to maintain water quality. Roads not required for fire and sediment basin access will be reclaimed. See Attachment III-B-5, Attachment III-B-5(b), and Specifications for the construction, maintenance, and reclamation of primary roads.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

**SPECIFICATIONS FOR THE CONSTRUCTION, MAINTENANCE
AND RECLAMATION OF PRIMARY ROADS**

1. Primary roads shall be designed by or under the direction of a registered professional engineer in accordance with the Alabama Surface Mining Commission rules and regulations and prudent engineering practice.
2. Each roadway embankment will be designed and constructed so as to have a minimum static safety factor of 1.3.
3. To the extent possible, roads will be located on ridges or on the most stable available slopes to prevent or minimize erosion, downstream sedimentation and flooding in an effort to prevent adverse effects to fish, wildlife and related environmental values.
4. To the extent possible, roads will be located above the sediment basins to be constructed for the mining operation in an effort to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area and to comply with State and Federal water quality standards applicable to receiving waters and avoid the alteration of the normal flow of water in streambeds or drainage channels while preventing or controlling damage to public or private property. Where it is not possible or is impractical to locate roads in this manner, sediment control devices such as silt fencing, hay bale check dams and rock filter check dams will be used as necessary to maintain water quality. No fording of intermittent or perennial streams will be conducted unless specifically approved by the Alabama Surface Mining Commission as temporary routes to be used during road construction.
5. Prior to construction, the roadway will be cleared, grubbed and will have the topsoil removed. The clearing limits will be kept to the minimum necessary to accommodate the roadbed and associated ditch construction.
6. Roads will be constructed of suitable compacted subgrade material. The material will be free of sod, roots, stones over 12 inches in diameter, and other objectionable materials. The material will be placed and spread over the entire fill area, starting at the lowest point in layers not to exceed 12 inches in thickness. The material will be compacted to 95 percent of the density, based on standard proctor as outlined in ASTM.
- 7) Primary roads will have a minimum width of eighteen feet and a maximum width necessary to accommodate the largest equipment traveling the road.

Applicant: Black Warrior Minerals, Inc.
Mine Name: Manchester East Mine
Permit Number: P-3922 Revision R-3

- 8) Roadbeds will be cut to consolidated non-erodible material or will be surfaced with durable non-toxic, non-acid forming substances. The wearing surface will consist of durable sandstone, chert, crushed limestone, crushed concrete, crushed asphalt, red rock, ironore refuse, gravel, or other durable non-toxic, non-acid forming material approved by the Regulatory Authority. The wearing surface will be placed on the roadbed to a depth of four inches.
9. No sustained grades will exceed ten percent unless deemed necessary, in which case appropriate sediment control facilities will be constructed. If grades in excess of fifteen percent are required, cross drains, ditch relief drains and road drainways will be located at a minimum distance of three-hundred feet.
10. Roads will be constructed so as to have adequate drainage utilizing ditches, culverts, cross drains and ditch relief drains designed to safely pass the peak runoff from a ten year, six hour precipitation event. Drainage pipes and culverts shall be installed as designed and will be maintained in a free and operating condition to prevent and control erosion at inlets and outlets. Culverts have been designed to support the load of the heaviest equipment to travel the road and are based on the Handbook of Steel Drainage and Highway Construction Products by the American Iron and Steel Institute and the equipment specifications. Drainage ditches will be constructed and maintained in accordance with the approved design to prevent uncontrolled drainage over the road surface and embankment. Roads will not be located in the channel of an intermittent or perennial stream unless specifically approved by the Alabama Surface Mining Commission. Additionally, no relocation and/or alteration of an intermittent or perennial stream will be done unless specifically approved by the Alabama Surface Mining Commission. In the event that it becomes evident that any drainage structures including culverts, bridges and/or low water crossings will be required in order to cross an intermittent or perennial stream, the structure will be designed and constructed in accordance with Alabama Surface Mining Commission requirements and prudent engineering practice and the approval of the design(s) will be acquired prior to the commencement of construction. Hay bale check dams and silt fences will be used at strategic locations when necessary to control sediment runoff. Immediately upon completion of construction, the side slopes of the road embankments and/or cuts will be fertilized, seeded with annual and perennial grasses and mulch will be added to aid in the prevention of erosion and to enhance seed germination. The seed mix will consist of, but is not limited to, some combination of the following species: Bermuda grass, fescue, lespedeza, rye grass, brown top millet, clover and vetch. The particular species to be planted will vary with the planting season at the time of

Applicant: <u>Black Warrior Minerals, Inc.</u>
Mine Name: <u>Manchester East Mine</u>
Permit Number: <u>P-3922 Revision R-3</u>

seed application. Upon completion of construction of each phase of the roadway the construction will be certified to the Alabama Surface Mining Commission as having been done in accordance with the approved plans for the roadway and associated facilities.

11. Routine maintenance will be required to assure that the road continually meets performance standards and will consist of periodic grading, resurfacing, dust suppression and maintenance of sediment control facilities. Dust suppression will consist of the application of water, chemical binders and/or other dust suppressants. No oil will be utilized in this process. Spot seeding, fertilizing and mulching will be performed as necessary to improve vegetative cover on roadway slopes. A road damaged by a catastrophic event shall be repaired as soon as practicable after the damage has occurred.
12. Roads not to be retained as part of the post mine land use shall be reclaimed in accordance with the approved reclamation plan for this permit as soon as practicable after they are no longer needed as part of the mining and reclamation operation, using the following procedures:
 - a. The road will be closed to traffic.
 - b. All bridges, culverts and other drainage structures not approved as part of the post mine land use will be removed.
 - c. All road surfacing materials that are not compatible with the post mine land use or revegetation requirements will be properly disposed of on-site or removed from the site for re-use.
 - d. Roadway cut and fill slopes shall be regraded and reshaped to be compatible with the post mine land use and to compliment the natural drainage pattern of the surrounding terrain.
 - e. The natural drainage patterns shall be protected from surface runoff and erosion utilizing the installation of dikes and/or cross drains as necessary.
 - f. The roadbed shall be ripped or scarified as necessary, the topsoil or substitute or approved growing medium shall be replaced and revegetated in accordance with the approved reclamation plan for this permit.
13. The drawings and data contained in the specific design plans illustrate typical roadbed configurations for primary roads as well as site specific design of drainage structures, stability analysis and ditch sections.