Ohio Department of Natural Resources
Division of Mineral Resources Management

****PROCEDURE DIRECTIVE****

Permitting 2009-01

Replaces Policy/Procedure Directives
Permitting & Hydrology # 98-1 & Regulatory 94-1

Subject: Stream Buffer Zone Variance Requests

Effective: July 1, 2009

Purpose: Guidance for Stream Buffer Zone Variance

General Discussion

Coal mining operations inherently affect the natural environment. The overall purpose of Ohio's mining law is to prevent, minimize, or mitigate the effects of mining so that the impacts are short-term (limited to the duration of mining and reclamation) and the post-mining environment has the capability to support the same variety of uses as prior to mining. Cost effective methods such as minimizing the area affected, using diversions and sediment structures to control erosion and prevent sedimentation, and revegetating as contemporaneously as possible are standard practices employed to minimize adverse impacts. These common sense approaches result in mitigated impacts and cost containment for the operator and represent only a few of the "Best Management Practices" (BMP) available to the mining industry.

A permit applicant must consider methods to first prevent any direct or indirect adverse impacts, then minimize and mitigate unavoidable impacts as a result of the proposed mining activities. Additional regulatory requirements need to be addressed if sensitive environmental resources such as streams and associated buffer zones (e.g. riparian corridors, wetlands, and floodplains) are located on an area to be mined. The Division of Mineral Resources Management must evaluate whether the permit applicant has incorporated applicable BMP within a comprehensive plan to prevent, minimize and mitigate unavoidable environmental impacts to streams and buffer zone areas.

Ohio Administrative Code (OAC) 1501:13-9-04 (E) prohibits disturbance of land for the purposes of conducting coal mining activities within one hundred feet of a perennial or intermittent stream (the "buffer zone"). The rule provides the chief the authority to grant a variance to this prohibition only upon finding that:

- The operations will not cause or contribute to the violation of applicable state or federal water quality standards, and will not adversely affect the water quantity and quality or other environmental resources of the stream; and

- If there will be a temporary or permanent stream channel diversion, it will comply with paragraph (F) of OAC 1501:13-9-04.

For the chief to grant a variance, the permit applicant must provide a written request that clearly addresses the activities proposed and that demonstrates water quantity and quality and other environmental resources of the stream will not be adversely affected. Other environmental resources of a stream include, but are not limited to, riparian vegetation, various physical characteristics (such as riffles, pools, and gradient changes), and substrates (such as large/small and coarse/smooth bottom) which interact to create a variety of habitats for aquatic use. Impacts to and restoration of affected stream buffer zone(s) are addressed in Part 3 of the coal permit application.

The Division has developed a *Stream Buffer Zone Variance* form that must be used when requesting a stream buffer zone variance. In addition, the Division, with the assistance of industry, has developed *SBZVR Tables* to aid in providing the required information in a uniform and consistent method. The use of these tables will provide some of the information required in the variance request as well as tables necessary for the 401 water quality certification and the 404 permit. The form and tables are currently available on the division's web site at http://ohiodnr.com/mineral/forms/tabid/10405/Default.aspx.

What to Include in a Stream Buffer Zone Variance Request (SBZVR)

1. Discussion of Specific Activities: The variance request must address the specific activities that need to be conducted within each buffer zone during both active mining and reclamation. Only those activities detailed in an approved SBZVR will be allowed during mining and reclamation operations. Conducting activities other than those specified would result in violation of permit conditions.

- Each activity must be clearly defined as to what will occur, the duration of the activity, and any special consideration and/or restoration effort that will be made when conducting the activity. Common activities necessary to facilitate a mining operation include, but are not limited to, stream crossings, sediment control construction (diversions, sumps, ponds, etc.), temporary topsoil and/or spoil storage, coal removal/mining through the stream, stream reconstruction, stream diversion and/or relocation, spoil blending (i.e. permanent placement of spoil), conveyance of drainage, and auger mining.

- The description must provide sufficient information to identify the location of the activities within each buffer zone. If there's more than one buffer zone, label them (by number) and address each individually. Use linear stream measurements or surveyed points to indicate where specific activities will occur. For example: Stream A will be affected by pond 01 construction between stations 1+00 and 2+50 and stream reconstruction between stations 4+50 and 10+00.

2. Discussion of Why the Activities are Necessary: A permit applicant must sequentially consider prevention, minimization, and restoration for adverse impacts to streams and buffer zone areas during development of a mining and reclamation plan. The applicant is aware of the "*what* and *why*" of stream buffer zone disturbance as a result of this process. It is likely that different operational plans were considered during permit development and, for certain reasons,

a particular plan was chosen. Briefly address the reasons activities in each buffer zone are needed and why the proposed plan was chosen.

3. Discussion of Protection of Water Quality, Quantity and Environmental Resources: In order to demonstrate that stream resources will not be adversely affected, the variance request must describe the current stream environment and measures to be taken to protect water quality/quantity and other environmental resources.

- Describe the premining water quality/quantity data and other environmental resources of the stream.

- Describe the existing riparian vegetation and anticipated impacts. Riparian vegetation is that which exists on, or pertaining to, the banks of a body of water. Areas where the existing riparian vegetation will not be disturbed need to be referenced also.

- Other relevant observations about a specific stream should be included in the discussion. Previous mining, poor management practices, or other existing conditions in the watershed that contribute to a stream's current condition should be noted.

- Describe measures to protect and/or restore water and other environmental resources and how reclamation to restore the affected stream segment(s) will be accomplished. The description may vary along the length of the stream and should specifically address different segments and activities to occur. A restoration plan may include, but isn't limited to:

  a. Discussion of sequencing of restoration activities and detailed work descriptions
  b. Engineering designs, plan views, cross-sections, and profiles,
  c. Sediment control measures (in-stream and out-of-stream energy dissipation and scour prevention), and,
  d. Ecological and habitat features (e.g. riffle-pool sequencing, stream meandering, rock clusters, wing deflectors, vegetative revetments, lunkers, vegetated stream corridors, etc.).

- If wetlands exist within the buffer zone area and will be impacted by the proposed operations, the variance request must clearly indicate or reference the measures that will be taken to mitigate the wetland impacts.

- The variance request must indicate that the applicant has contacted the OEPA and U.S. Army Corps of Engineers for applicable permits as required pursuant to Clean Water Act, Sections 401/404.

4. Stream Reconstruction or Stream Diversion and/or Relocation: Mining through a stream and reconstructing a channel/floodplain configuration in the approximate premining location without constructing a permanent or temporary stream diversion is commonly referred to as "stream reconstruction". Moving a stream, either temporarily or permanently, to a constructed channel location to facilitate mining is commonly referred to as "stream diversion and/or relocation". Designs for stream reconstruction/diversion must comply with paragraph (F) of OAC 1501:13-9-04. Additional mitigation for stream impacts may be required by other agencies including, but not limited to, the OEPA and ACOE.

- The variance needs to address the location of activities and the sequencing or relative timing of events.

- A detailed description of measures to be taken to address issues of channel stability, flooding and sediment control must be included.

- The variance request must reference appropriate reconstruction and/or diversion/relocation engineering plans submitted with the application. The engineering plans developed for stream construction should consider current ecological practices and incorporate those practices necessary to restore the environmental resources of a stream as required by OAC 1501:13-9-04 (F). Specific engineering plan elements for restoration of environmental resources must be referenced in the variance request. Identify important design element such as reconstruction of pools and riffles, rock sizes, etc.

5. Revegetation: Where avoidance is not possible, the permittee must restore the riparian vegetation. The BZVR should detail the species to be planted, methods to be employed, and area to be planted. The riparian planting plan must include at least four species identified in the attached species list and no more than 25 percent of any individual species may be included in the planting mixture. The Ohio Stream Management Guide No. 07 on "Restoring Streambanks with Vegetation" is attached for your reference. The Ohio Department of Natural Resources, Division of Water has additional stream management guidance documents that can be found at http://www.dnr.state.oh.us/water/pubs/fs_st/streamfs/tabid/4178/Default.aspx. Woody species plantings must be in rows spaced 4 feet apart, with a staggered 8 feet spacing between seedlings/cuttings. In general, for areas where all or substantial amounts of existing riparian vegetation will be removed, a minimum width along affected portions of the stream must be planted. The minimum riparian planting width is a distance of two and one half times the channel bottom width or 50 feet on each side of the stream, whichever is greater.

Compliance with the BZVR permit condition to restore riparian vegetation will be based on the proper planting of the approved species and rates using the appropriate, accepted methods. Planting must be completed prior to a phase 2 performance security release.

Within one week of the completion of the riparian planting, the attached form "Verification of Proper Planting of Tree Seedlings/Posts" must be completed and submitted.

Site-specific conditions and the proposed mining plans must be considered when determining the appropriate riparian vegetation plan. The Division encourages consultation with and consideration of input from other knowledgeable sources.

In order to increase the survival and growth of the riparian planting, it is recommended that resoiled areas to be planted with riparian vegetation be lightly compacted or ripped. To meet stream and habitat restoration criteria, success standards on riparian plantings may be required by other agencies including, but not limited to, the OEPA and ACOE.

6. Markers: 1501:13-9-01 (E) and 1501:13-9-04 (E)(2) require the operator to mark the buffer area not to be disturbed with clearly visible markers. For instances where the proposed permit area includes area within 100 feet of an intermittent or perennial stream that is not

proposed to be disturbed, the applicant must mark these areas in a manner similar to the markers required for the perimeter of the proposed permit area. The applicant must use orange flagging with black stripes. Said markers must be located so that they clearly define the proposed buffer zone area. When a person is standing at any marker on the proposed buffer zone area, the adjacent markers in either direction must be visible.

7. Mapping: When identifying stream buffer zones on the application/hydrology map, areas within 100 feet of a perennial or intermittent stream shall have their perimeters designated with a solid red line. Areas within 100 feet of a perennial or intermittent stream where the buffer area will not be disturbed shall have their perimeters designated with a solid red line and the areas therein shall be shaded red.

In conclusion, the BZVR needs to be a detailed and site specific document addressing each individual intermittent and perennial stream to be affected by the proposed mining and reclamation operations. The request must provide the chief sufficient information to approve or disapprove a variance from the regulatory prohibition to mining within one hundred feet of a perennial or intermittent stream. In order for the chief to grant a variance, findings must be made that the operations will not cause or contribute to the violation of applicable state or federal water quality standards; will not adversely affect the water quantity and quality or other environmental resources of the stream; and, if there will be a temporary or permanent stream channel diversion, it will comply with paragraph (F) of OAC 1501:13-9-04.

John F. Husted, Chief
Division of Mineral Resources Management

Riparian Tree Species

Eastern Cottonwood (Populus deltoids)
American Elm (Ulmus Americana)
Slippery Elm (Ulmus rubra)
Bitternut Hickory (Carya cordiformis)
Shagbark Hickory (Carya ovata)
Shellbark Hickory (Carya laciniosa)
Black Locust (Robinia pseudoacacia)
Red Maple (Acer rubrum)
Silver Maple (Acer saccharinum)
Sugar Maple (Acer saccharum)
Black Oak (Quercus velutina)
Post Oak (Quercus stellata)
Red Oak (Quercus rubra)
Shingle Oak (Quercus imbricaria)
White Oak (Quercus alba)
Sassafras (Sassafras albidum)
River Birch (Betula nigra)
Sweetgum (Liquidambar styraciflua)
Black Walnut (Juglans nigra)
Tulip Poplar (Liriodendron tulipifera)
Eastern Sycamore (Plantanus occidentalis)
Flowering Dogwood (Cornus florida)
Red-osier Dogwood(Comus stolonifera
Bankers Willow (Salix cotteti)
Streamco Willow (Salix purpurea)
Black Willow (Salix nigra)
White Willow (Salix alba)
Sandbar Willow (Salix interior)
Box Elder (Acer negundo)

To promote diversity, no more than 25 percent of any single tree species should be included in planting plans.

OHIO DEPARTMENT OF NATURAL RESOURCES
Division of Mineral Resources Management
Verification of Proper Planting of Tree Seedlings/Posts

Permit Number _____ **Permittee** _____ **Mining Year** _____

Date(s) of planting _____ Number of seedlings/posts planted _____

Indicate Planting Method:

☐ Hand-Planted ☐ Machine-Planted ☐ Direct-Seeded

I witnessed tree planting operations by _____ on _____ and attest that:
(date)

Y	N	
☐	☐	1. Seedling roots were kept moist and properly protected from exposure to air and sun during planting.
☐	☐	2. Not more than one seedling was placed in each hole.
☐	☐	3. Roots were not excessively pruned prior to planting.
☐	☐	4. Seedlings and stakes or posts were planted at correct planting depths; roots are not exposed and at least 40-50% of the total length of the stake or post is beneath the soil surface.
☐	☐	5. Roots remained straight when planted; there were not bent or doubled.
☐	☐	6. Soil is right around the seedling, stake or post; a gentle tug will not pull it out of the ground.
☐	☐	7. Stakes and posts are planted right-side-up; tops of posts are not split or damaged.

_____ **Name of Evaluator**

_____ **Signature of Evaluator**

_____ **Date**

Date and location of participation in the Division of Mineral Resources Management's Tree Planting Workshop:

_____ Location

_____ Date

Inspection by Division of Mineral Resources Management

I inspected tree planting operations by _____ **on** _____
and find the planting ☐ acceptable ☐ not acceptable

_____ **Name of Division Inspector**

_____ **Signature of Division Inspector**

_____ (date)