



## NR-135 Non-Metallic Mining Reclamation Program

(for the Counties of Calumet, Outagamie, Winnebago, Waupaca, and Shawano)

### *'Highwall' Reclamation Techniques*

Wisconsin Administrative Code NR-135.10(1) states that 'The reclamation plan may designate areas such as stable slopes and rock faces which do not require final grading'. Highwalls which remain on a site can present potential dangers due to their height, instability, or obscured view. Therefore; should this option be considered in a reclamation plan only if it is demonstrated that it is a safe and integral component of the proposed end land use for the site once reclamation is complete.

- **What is the extent and location of the highwall which is proposed to remain?** Staff will look at the locational aspects of the highwall as it relates to the overall reclamation plan as well as adjacent land uses and activities. The plan must adequately address any safety concerns or potential hazards regarding future public and/or private accessibility (intentional or accidental) to these areas of the site. At a minimum, earthen berms, fences, trees, or other structures may be required in such areas.
- **How does the vertical (or nearly vertical) rock face integrate into the overall reclamation plan based on the proposed 'end land use' of the site?** For example, if the 'end land use' is going to be 'wildlife habitat', is the rock face going to be located and configured in a manner during the excavation process so that a variety of rock faces and features (including areas that will support vegetation) be left in order to provide habitat for specific local species requiring such habitat? Another example may be an 'end land use' of an individual homesite or residential subdivision. If proposed, the reclamation plan should address how or why the face(s) are necessary for such an end land use. If justified, how will safety aspects be addressed? Will the face(s) be 'benched' into several smaller faces and steps (highwall reduction)? Will fencing or berms remain or will new ones be placed near the top or bottom of the face? If a pond/lake is proposed as the end land use, the sloping and benching aspects will be critical in addressing safety issues along its perimeter. If the area is to be used for recreation or nature study, how will access be provided, or prevented, to the face?
- **What information will we require to ensure that the rock face is, in fact, stable and will not cause future safety concerns?** In limestone quarries, these faces, particularly the uppermost material, is more susceptible to weathering or exposure to freeze/thaw cycles. It may be appropriate to remove this upper material above the rock face, and topsoil and seed it appropriately. Additionally, concerns may exist with regard to the ponding or flow of surface waters over, or near highwall faces, as this may increase the likelihood of having an unstable face in the future due to freeze/thaw cycles. The overall stability of the face(s) may be shown through certified geotechnical analyses along the proposed face line prior to mining this area.

Other options which address highwall area may also exist and will depend on the physical nature of the site and its proposed 'end land use'. No real specific guidance is given in the administrative code on this subject and, therefore; other methods pertaining to the reclamation of highwalls may be considered.



**For more information contact:** Eric W. Fowle – AICP, NR-135 Coordinator, or Scott Konkle, Reclamation Specialist, at (920) 751-4770, or visit East Central's website at [www.eastcentralrpc.org](http://www.eastcentralrpc.org) for a copy of this document as well as other materials and links related to the non-metallic mining reclamation program.