

May 27, 2003

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist/Engineering, Team Lead

FROM: Gregg A. Galecki, Environmental Scientist/Hydrology

RE: Highwall As-Builts, West Ridge Resources, Inc., West Ridge Mine, C/007/041-DO00A-7

SUMMARY:

The following technical memo is a review of information submitted by West Ridge Resources, Inc. (Permittee) to the Division of Oil, Gas, and Mining on March 17, 2003, in response to deficiencies with the proposed highwall reclamation information. The review is solely from a hydrologic prospective and addresses only the hydrologic regulations pertinent to the proposal. From a hydrologic perspective, Appendix 5-9 has no deficiencies. However, modifications to the currently approved plan need to be made within the text of the mining and reclamation plan to refer to both Appendix 5-9 and 5-10. Additional information is needed relative to an adequate design for the relocated channel discussed within Appendix 5-10.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

TECHNICAL MEMO

Analysis:

Diversions: Perennial and Intermittent  eams

To make Appendix 5-10 a viable alternative for reclamation, additional design information and clarification is necessary. In Section II of Appendix 5-10, the text indicates the channel will be relocated approximately 40-feet to the northwest. A review of the Map 5-6B cross sections indicates that the widest location is 40-feet, while the average displacement is approximately 22-ft.

The following channel design information is needed: 1) a profile of the proposed channel illustrating the gradient of both the original and proposed channels; 2) flow and velocity calculations of the stream channel based on the watershed; 3) designs and calculations of the proposed channel demonstrating it will adequately maintain a 100-year / 6-hour storm event; and 4) using available information, provide the slope, width-to-depth ratio, channel material type, and other characteristics to classify the general channel geometry.

Using the latest stream relocation technology available, the Division would prefer that the Permittee refrain from designing a standard riprap channel. The Division recommends utilizing natural stream restoration techniques with drop structures, energy dissipaters, the combination of toe-rock and vegetation, tree revetments, and possibly matting (pyramat) to construct the channel and stream banks. Maps 5-13 and 5-13E (photos 33 – 37) provide photographic illustrations of how the stream channel existed pre-mining. The combination of channel measurements from Map 5-6B and the photographs indicate the original channel ranged from approximately 15 to 35-feet wide, in a very rocky, alluvial/colluvial environment. Reconstruction of this type of channel, given the native material should be relatively simple to construct. This type of design would also tie-in well with the experimental practice study area, as well as the rest of the channel reconstruction in the disturbed area.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – Hydrologic Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-742.211, Provide the requested channel design information to demonstrate there will be no additional contributions of suspended solids and sediment to stream-flow outside the permit area.

R645-301-742.312, -742.314, -742.321, -742.322, -742.323, -742.324, Per the above-cited discussion, provide maps, cross sections, calculations, and designs for the proposed reclamation channel.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

Section R645-301-553, Backfilling and Grading of the approved mining and reclamation plan (pg. 5-53), and Appendix 5-5 (section 4e, pg. 45) needs to be modified to reference that both Appendix 5-9 and Appendix 5-10 exist as options for reclaiming the portal highwall area. The text should also reference the Soils section of the MRP for a more detailed discussion of the approved experimental practice for topsoil storage with a discussion as to why the selected reclamation plan was chosen. This is necessary for a reader consulting the mining and reclamation plan at the time of reclamation so that the reviewer is aware that Appendix 5-10 exists and is a viable option.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – Backfilling and Grading section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-302-214.200, In the Backfilling and Grading section of the mining and reclamation plan, indicate that both Appendix 5-9 and Appendix 5-10 exist as reclamation options.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS



Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Reclamation Backfilling And Grading ps

A review of the resubmitted Map 5-6B (Mine Site Cross Sections) and Map 1 and Map 2 of Appendix 5-10 raised the following discrepancies:

TECHNICAL MEMO

- 1) On Map 5-6B, the location of the existing bypass culvert is different on stations 26+00 through 28+00 from the currently approved Map 5-6B in the MRP. There is no explanation as to why this is so.
- 2) On Map 1, the legend does not identify what the red-dashed line or coordinates represent. Looking at Map 2 the line appears to represent the bypass culvert; however, neither the lines nor map coordinates (Map 5-6) match either the approved Map 5-6B or the newly submitted Map 5-6B. Also on Map 1, the existing channel location does not correspond with the channel located on Map 5-6B.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – Maps, Plans, and Cross Sections of Reclamation Operations section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301.742.300, Provide the above-cited corrections so the Maps 5-6B, and Maps 1 and 2 from Appendix 5-10 consistently reflect the same information.

RECOMMENDATIONS:

Approval of the application by the Division is not recommended until the requisite deficiencies, cited above, are adequately addressed.