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April 8, 2002

TO: Internal File

THRU: Pam Grubaugh-Littig

FROM: Gregg Galecki, Reclamation Hydrologist

RE: Abatement to Notice of Violation (NOV) N02-49-1-1, West Ridge Resources Inc. West Ridge Mine, C/007/041-AM02A

SUMMARY:

On March 29, 2002, the Division received an abatement response to NOV N02-49-1-1, which was issued on February 20, 2002, with an initial abatement date of March 21, 2002. An Abatement Extension was received by fax from West Ridge Resources on March 19, 2002, and the NOV was modified and extended to April 19, 2002. The following is a technical review of the information submitted to abate the violation. The violation concerned inconsistencies between the approved Mine Reclamation Plan (MRP), a pending application concerning a Division Order, and ground-truth observations made by the Division inspector of the disturbed-area ditches. All the information provided is hydrologic related. The information provided is considered inadequate to abate the Violation.

TECHNICAL ANAYLSIS:

OPERATION 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.

Analysis:

General

The source of the NOV is the submittal of both text and certified maps indicating a commitment to armor disturbed area ditches with flow velocities exceeding 5 feet/second in designed disturbed area ditches. The ditches are currently designed for a 10-year / 24-hour storm event. Changes admitted to the Division as part of the NOV abatement are incomplete when compared to the currently approved MRP incorporated in April 1999. The information submitted is complete however, when compared to the as-built information submitted in August 2000. Changes to Table 13 are supported with as-built survey information.

In Appendix 7-4, Section 2.1 Precipitation, a sentence needs clarification. 'Although regulations only require ditches to be designed for the 10-year / 6-hour storm event, the design has been increased to the 10-year / 24-hour storm event at the request of the Division'.

State regulation R645-301-742.333 is the only reference of a diversion (ditch) citing a 10 year / 6-hour storm event for 'Miscellaneous Flows' (ephemeral). 'Miscellaneous flows' consists of 'all flows except for perennial and intermittent streams, may be diverted away from disturbed areas....'. It is the Division interpretation that Regulation R645-301-742.333 addresses diversion design for ditches in *undisturbed areas*, not disturbed area ditches, because flow is directed towards the sedimentation pond in disturbed areas and not away from it.

The Division likely requested the 10-year / 24-hour storm event to be compatible with the regulations of the design event of the Sedimentation Pond to which the disturbed-area ditches report. State regulation R645-301-742.221.33 clearly states the Sedimentation Pond be designed to contain a 10-year / 24-hour storm event.

Diversions

Sections 2.1 and 2.10 and Figures 3 and 4 indicate all ditches are designed for a 10-year / 24-hour storm event. One design parameter of the 10-year / 24-hour ditch design (in the currently approved MRP) requires ditch sections having flow velocities greater than 5 fps need to be armored. No demonstration to indicate a 5 fps flow velocity does not need to be armored has been made.

The MRP needs to be consistent in Sections 2.1, and 2.10 and Figures 3 and 4. Either fulfill the requirements of the 10-year / 24-hour storm event design or demonstrate that armoring the channels at or greater than 5 fps flow velocities is not necessary. As an example, if the channels or sections of the channels are comprised of coarse noncolloidal gravel, shale or hardpan the limiting flow velocities will increase. Rip rap calculations will also need to be submitted if chosen as the armoring method.

The submitted application indicates Disturbed ditches DD-6 and DD-8A are constructed in bedrock or lined. Additional information needs to be provided. As an example, if in bedrock the Manning roughness coefficient (n) in Table 12 and the resulting flow velocity in Table 13 will need to reflect this change; and if rip rap is used, the rip rap sizing calculations need to be available. A more detailed description of the ditch also needs to include what type of bedrock, and whether the channel is constructed completely out of bedrock or only one side.

Findings:

The information provided is not adequate to fulfill the requirements of the Hydrologic Information section of the regulations. Prior to approval, in accordance with:

R645-301-742.120, -742.124, -742.300, the applicant must demonstrate that ditches with flow velocities greater than 5 feet/second are stable and do not need armoring. If demonstrated that the current design is sufficient, the cited text and design figures need to be consistent.

Analysis:

Mining facilities maps

The 'Note' on Figures 3 and 4 in Appendix 7-4 is confusing. Clearly define what is based on a 10-year / 24-hour flow.

Findings:

R645-301-121.200, the applicant must clearly define what is based on a 10-year / 24-hour flow in Figures 3 and 4 in Appendix 7-4.

RECCOMENDATIONS:

The application should not be approved until the deficiencies discussed in this memorandum have been adequately addressed.

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