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 DIVISION OF OIL, GAS AND MINING

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March 28, 2000

TO: Internal File

THRU.: Mary Ann Wright, Associate Director *MAW*

THRU.: Daron Haddock, Permit Supervisor *DH*

FROM: *wfw* Wayne H. Western, Reclamation Specialist III

FROM: *JB* Priscilla Burton, Soils Reclamation Specialist

RE: Earthwork Calculation,(Reclamation Plan), PacifiCorp, Cottonwood/Wilberg Mine ACT/015/019-AM00B

SUMMARY:

The Division reviewed the earthwork calculations for the Cottonwood/Wilberg mine. The Division found the earthwork calculations defective. Before the bond calculations can be completed, the Permittee must give the Division detailed earthwork costs.

Part 4 is the reclamation plan portion of the Mining and Reclamation Plan for the Cottonwood/Wilberg Mine. This reorganization of the text utilizes appendices for figures, tables and baseline survey information. There has been no change in the content of the text. There is one error of fact and one error of omission to be corrected.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-411, -301-220.

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Analysis:

Most of the soils information has been placed in Part 4 Appendix D. However, a discussion of the soils of the Old Waste Rock Site: UTU-37642 is found on page 32 of the text. On page 34 of the text, the reader is referred to Volume 10 for information on the New Waste

Rock Site: UTU-65027. Volume 10 could not be found. This may be a typographical error that should read Volume 1 or Appendix XXI.

Both Appendix XXI and Volume 1 Part 2, pages 2-143 to 2-158 and Maps 2-17 and 2-18 describes soils of the waste rock site. It is unclear whether either of these soils reports describes the New Waste Rock Site UTU-65027.

Part 4, page 21, item #7 indicates that there should be laboratory reports for the fill slopes seeded in 1988. The reporting was to be conducted at 5 year intervals to record productivity changes on the slopes. At five year intervals pH, EC, SAR, O<%, SP%, AWC, and soil fertility (P, K) analyses were to have been performed on five composite samples from five fill slopes. This information was not included in Part 4 Appendix D, nor could it be found in the Annual Reports for the site. This information may be useful for the Permittee and the Division. It should be located and placed in Part 4 Appendix D.

Findings:

The Permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-220, On page 34 of Part 4, clarify the location of the information for the New Waste Rock Site UTU-65027.

R645-301-143, Indicate the location of the soil sampling information referred to page 21, Item #7 of Part 4.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:**Determination of Bond Amount**

The Environmental Subcommittee requested that the Division investigate the use local costs instead of national averages to reduce the reclamation bond amounts. The Division is

studying the currently studying the request. As the Division was reviewing the bond calculation we found some bond calculations had deficient earthwork calculations or the earthwork was not being done efficiently.

The Division has found that major reductions in the reclamation bond can be made if the Permittee has a detailed reclamation plan and efficient earthwork calculations. As part of the Cottonwood/Wilberg bond review the Division looked at the earthwork calculations. The Division found several problems with those calculations. If the problems were corrected, the bond amount would most likely be reduced. The deficiencies are as follows:

- The Division was unable to find the cross section that the Permittee used to calculate the earthwork costs. The cut and fill volumes for the cross section are shown on Plates CW-10500-WB and CW-10378-WB. However, the Division is not able to verify the cut and fill quantities, the haul distances or grades.
- The information in the bond calculations does not agree with the cut and fill quantities given on Plates CW-10500-WB and CW-10378-WB.

The cross section and cut and fill quantities on Plates CW-10500-WB and CW-10378-WB do not correspond with the information in the bond calculations. On Plates CW-10500-WB and CW-10378-WB the Permittee shows two areas with excess material and 3 areas that need fill. In the bond calculations the Permittee shows 9 areas that need fill and does not identify where the material will come from.

The Division was unable to correlate the cut and fill quantities on Plates CW-10500-WB and CW-10378-WB with the information in the bond calculations. The names of the cut and fill sources are not the same and the material quantities are different.

On Plates CW-10500-WB and CW-10378-WB the total amount of fill material needed is 182,856 CY. The bond calculations show only 171,169 CY of fill is needed.

On Plates CW-10500-WB and CW-10378-WB the Permittee shows that 1927 CY of asphalt and concrete will be buried on site. In the bond calculations the Permittee states that there will be 2,014 CY of asphalt that will be disposed on site.

On Plates CW-10500-WB and CW-10378-WB the cut and fill calculations show that 67,571 CY out of 182,856 CY material will be placed as fill within 100 feet

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of the cut. The bond calculations show that most of the fill material will be hauled 1,000 to 1,500 feet. If the Permittee were to use the correct haul distances then the earthwork costs could be substantially reduced.

Findings:

The information provided in the bond calculations is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-830.140, The Permittee must give the Division detailed earthwork calculations. Those calculations must show the cut and fill quantities and the supporting information. The Permittee must give detailed material balance information that included the areas where material will be cut and sent for fill. See the analysis section for more details.

RECOMMENDATIONS:

The Permittee should be required to give the Division detailed reclamation plan.

Note: The Permittee used the reclamation cost data for the Cottonwood/Wilberg mine in the presentation to the Division, at the Environmental Subcommittee, on bond costs. The Permittee stated several times that significant cost reduction could be achieved by better materials handling methods. Those methods include leaving concrete in place if the material would be adequately covered during backfilling or use the concrete as backfill. The Division agrees that the reclamation cost estimate could be reduced if such methods were used. Unfortunately the Permittee did not include that information in the reclamation plan. Without that information the Division cannot use the Permittee's cost saving suggestions.

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