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Norman H. Bangerter
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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

April 15, 1992

Mr. Richard H. Allison, Jr.
AMAX Coal Company
Belle Ayr Mine
273 Bishop Road
P. O. Box 3005
Gillette, Wyoming 82717-3005

Dear Mr. Allison:

Re: NOV N92-28-1-1 Approval for Pond 012B Embankment Reconstruction, AMAX Coal Company, Castle Gate Mine, ACT/007/004, Folder #3, Carbon County, Utah

The April 8, 1992 submittal for construction of the embankment on Pond 012B has been reviewed and is hereby approved. You should refer to the attached memo to insure all regulations regarding construction of the ponds are addressed during and following construction.

The Applicant is required to submit certified as-built designs and a certified report as required by R645-301-514.300. Additionally any incidental changes, including the discrepancies in text addressed in the attached memo from Sharon Falvey and design changes must be included in the form of an amendment. The amendment must come in a form directly insertable to the MRP identifying all pages to be removed and/or replaced.

Please submit ten (10) copies of the amendment to update all agency copies of the MRP. Thank you for your attention in correcting these matter. If you have any questions or need additional information, please contact us.

Sincerely,

A handwritten signature in cursive script that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

Enclosures

cc: S. Falvey
AMAXAPPRV.LET



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April 15, 1992

TO: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Reclamation Specialist *SKF*

RE: NOV N92-28-1-1, Castle Gate Ponds 012, AMAX Coal Company, Castle Gate Mine, ACT/007/004, Folder #2, Carbon County, Utah

SUMMARY AND RECOMMENDATION

On December 4, 1991 AMAX Coal Industries submitted the as-built designs for modified Pond 012. Notice of Violation N92-28-1-1 was issued for unauthorized construction and failure to demonstrate compliance. This review analyses the applicants' submittal received at the Division on April 8, 1991. This review also re-iterates some deficiencies identified in the April 14, 1992 review that the Operator should consider during construction.

The Operator proposes to raise the embankment 2 feet above the existing open channel spillway to provide adequate freeboard. I recommend that the Operator be allowed to proceed with the increased embankment height. Let it be noted that the construction permit issued on October 17, 1991 by the DEQ is valid until October 18, 1992. The construction to be completed is directly related to construction of the approved facilities. The Operator is advised to review this document and pay attention to the regulations addressed herein. I also recommend the Division provide for an engineer to be available while the Operator is actively pursuing construction.

R645-301-120 Application Format

Operator's Proposal:

The Operator submitted new pond volume summaries for the as-built designs and proposed embankment changes. The changes include routing the 25 year-6 hour storm through Pond 012A and 012B spillways, and changes in sediment storage volume and elevation.

Analysis:

The Operator has submitted and retained some conflicting information. **Designs for an 8' bottom width on the spillway for Pond 012B conflict with the as-builts.** Exhibit 11.9 indicates the bottom width varies from 6' to 8'. The smaller width effects the maximum stage. The limiting design width must be used for routing flow. Text conflicts with the certified as-built. **The Operator has not provided for the change in the vertical head drop on page 10 of the 4/92 submittal.** It reads 8.3 feet whereas the as-built shows a difference of 7.5'. These inconsistencies have not been determined to significantly change the ability of the proposed design to meet design regulations. However, the width of the spillway could potentially change the maximum stage elevation and will need to be corrected.

Pond 012A has an existing decant. The text indicates the decant used will be a portable pump. The Operator will need to submit the changes for as constructed text and certified designs in a format that indicates the pages to be removed for replacement with the new designs. **All changes submitted by the Applicant must come in the form of an amendment to be inserted into the MRP identifying the pages to be removed and replaced in a summarized table. The applicant shall be sure all conflicting information is removed from the permit application.**

R645-301-713. Inspection. Impoundments will be inspected as described under R645-301-514.300.

Operator's Proposal:

None.

Analysis:

R645-301-514.312 requires the qualified registered professional engineer to promptly, after each inspection, provide to the Division a certified report that the impoundment has been constructed as designed and in accordance with the approved plan and the R645 Rules. The report is to include discussion of any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation and any other aspects of the structure affecting stability. **The Operator must include a certified report addressing R645-301-514.312 for the impoundments following construction changes.**

R645-301-733.210. Permanent and temporary impoundments will be designed to meet the requirements of 533.100.

Operator's Proposal:

The Operator has proposed to construct the minimum embankment height on Pond 012B to a relative height of 93.

Analysis:

The Operator will increase the height of embankment on Pond 012B. **The Operator will be required to supply information to demonstrate the safety factor and the requirements of R645-301-533.100 have been met. The Operator may be requested to include all engineering reports containing information methods of pond construction.**

R645-301-742.221.37. Ensure against excessive settlement;

Operator's Proposal:

None.

Analysis:

In general construction of the pond embankments include a surge berm for protection against excessive settlement. **The Operator should provide for settlement in the design. The Operator may be required to indicate how the construction method employed ensures against excessive settlement if deemed necessary by the Division.**

R645-301-742.221.39. Be compacted properly.

Operator's Proposal:

None

Analysis:

Standard engineering methods require compaction in 2 ft lifts. **The Operator may be**

requested to demonstrate that adequate compaction was met.

R645-301-742.223. Sedimentation ponds provide a combination of principal and emergency spillways that will safely discharge a 25-year, 6-hour precipitation event

Operator's Proposal:

The Operator provides the demonstration for safely discharging the 25-year 6-hour precipitation event on Pond 012. The ability of the ponds to pass the event is based on routing with the SEDIMOT II program through the proposed structures, assuming maximum sediment is contained in the pond.

The Operator routes the 25-year 6-hour event through the emergency spillway using conventional channel design methods.

Analysis:

The Operator has adjusted the pond volume curve used in SEDIMOT II when determining maximum stage and attenuation of the peak. The Operator has not used the limiting spillway width on Pond 012B which could result in a higher maximum stage elevation. However, the Operator provides for sufficient design allowing for adequate freeboard so the difference although not accurate (see R645-301-120), is not significant.

The Operator has less than 1 ft. of freeboard between the Primary Spillway maximum stage and the Emergency Spillway on Pond 012A the Operator shows the peak attenuated by the pond results in 0.4' between the Primary Spillway maximum stage and Emergency Spillway flow line, 1.1 ft between the primary and the minimum embankment, and 0.7' between the Emergency Spillway and the embankment. The standard design criteria is for one foot freeboard between the Primary and Emergency Spillway and one foot freeboard between the Emergency Spillway and embankment.

The Applicant has submitted conflicting information on the primary inlets for Pond 012 between drawings and certified as-builts. The Operator should indicate the maximum stage for the principle and emergency spillways for all ponds on as constructed maps and in text, and correct maps identifying the newly constructed freeboard elevation.

R645-301-742.233.1 A single open channel spillway of non-erodible construction and designed to carry sustained flows

Operator's Proposal:

Typical cross-sections are used to demonstrate design.

Analysis:

The Applicant uses typical spillway cross-sections. In many of the cross-sections the depth indicated from the spillway elevation to the channel embankment is greater than the depth to the freeboard at the level of the spillway. **The Operator should realize the typical design sets the minimum design criteria. Therefore any design less accommodating than the certified design will result in enforcement actions.**