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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 9, 1993

Mr. Richard H. Allison, Jr. P.E.
Project Supervisor
AMAX Coal Company, Belle Ayr Mine
2273 Bishop Road
P. O. Box 3005
Gillette, Wyoming 82717-3005

Dear Mr. Allison:

Re: Resolution of Division Order 92A, AMAX Coal Company, Castle Gate Mine, ACT/007/004, Folder #3, Carbon County, Utah

The Division has completed a review of information AMAX submitted on February 11, 1993 intended to satisfy Division Order 92A with regard to sediment pond designs. The information provided is considered adequate to satisfy the order with a few noted exceptions. AMAX must still provide a "sign-off" by the Department of Environmental Quality for the proposed decant and spillway changes, particularly since these changes may affect the UPDES permit. Other deficiencies deal specifically with pond 009 and the methods used for demonstrating that it meets the 10 year 24 hour design. These deficiencies are further detailed in the enclosed memo by Sharon Falvey.

In light of recent statements made by AMAX regarding reclamation of the mine and ponds in the near future, there may be an alternative approach to completing Division Order 92A. Rather than reconstruction of ponds or altering the ponds at this time to meet operational standards, AMAX could commit to reclamation of the mine in the near future and provide a detailed storm probability analysis which would demonstrate that there is little or no risk of damaging the water quality by allowing the ponds to remain in their present configuration for a short period of time.

In any case, there appear to be a few remaining loose ends that need to be tied up with respect to Division Order 92A. Please provide a response by May 10, 1993.

If you have any questions, please call me or Sharon Falvey.

Sincerely,

Daron R. Haddock
Permit Supervisor

Enclosure

cc: S. Falvey
S. Demczak, PFO

PONDDO92.AMA





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March 23, 1993

TO: File

THRU: Daron Haddock, Permit Supervisor

FROM: Sharon Falvey, Senior Reclamation Hydrologist *SJF*

RE: Castle Gate Ponds Round 2 D.O. 92A and, Amendment 92C Pond 009, Recommended Denial, AMAX Coal Co., Castle Gate mine, ACT/007/004, Folder # 2, Carbon County, Utah

SUMMARY:

This review is divided into two sections, the first review is for Pond 009, Amendment 92C, submitted November 30, 1992, and the second review is for the remaining pond amendment deficiencies submitted on February 11, 1993. The Operator submitted new watershed delineations and ditch designs for Hardscrabble drainage as a direct result of addressing the pond deficiencies. The operational design amendment review is forthcoming. That amendment was submitted in the July 31, 1992 and October 14, 1992 submittal, with the pond amendment but were not reviewed at that time.

Round 2 Response to January 12, Deficiency Memo.

Note: Analysis cited only where clarification is considered pertinent.

R645-301-734

ANALYSIS:

The Operator in some cases has adjusted Manning's "n" based on the average riprap size. In a couple cases the Operator still uses a Manning's "n" for riprap sizing then indicates riprap is not required based on the presence of vegetation. In those cases the Operator should use the design based on Manning's "n" for existing vegetation. The information submitted will be accepted based on the engineers certification however, field verification will determine applicability based on stability of the channel and whether the ditches meet design assumptions.

DEFICIENCY:

None. Field verification will determine applicability based on stability of the channel and whether the ditches meet design assumptions.

R645-742.221.31

ANALYSIS:

The Operator has corrected the map indicating flow of drainage to the pond is the same as previously proposed.

DEFICIENCY:

None.

R645-301-742.221.32

ANALYSIS:

The Operator indicates that the regulations do not stipulate a minimum clearance between the decant entrance and the maximum sediment level. However, the regulations do require consent of other agencies. The distance identified was a permit condition of the original pond amendment approval which was not implemented. See the August 28, 1991 memo for pond approval.

The Operator has not provided the approval from the Department of Environmental Quality for the elevation difference on decants.

DEFICIENCY:

1. The Operator must obtain approval from the District Engineer Department of Environmental Health prior to approval of this amendment.

R645-301-742.223

ANALYSIS:

The Operator indicates the issue of UPDES permit for Pond 007 will be under a

separate cover. Pond 008 has also resulted in direct discharge to the undisturbed drainage area. Prior to extending culverts on ponds 007 and 008 the Operator must submit notice of approval from the Department of Health to the Division.

DEFICIENCY:

1. Prior to extending culverts on ponds 007 and 008 the Operator must submit notice of approval from the Department of Environmental Quality for the UPDES changes in discharge points to the Division.

Pond 009 Round 1

ANALYSIS:

The Operator is unable to demonstrate that pond 009 can contain the 10 year 24 hour event, using the available assumptions for the CN to determine runoff to the pond. The Operator proposes to demonstrate the design is adequate through back calculating the Curve Number (CN).

The Operator's proposal requires refinement prior to approval of this method. Because, the Operator is proposing to reclaim in the fall of 1994, a commitment to continue monitoring UPDES discharge points and to reclaim Hardscrabble Canyon by the fall of 1994, as well as, a probability analysis for exceeding the event that can be retained in the pond may be preferable to the proposed methodology. However, the Operator should be aware that this would not negate the Operators liability if the pond exceed NPDES discharge requirements.

The Operator needs to provide the following additional information and refine data gathering techniques to obtain approval for the proposed demonstration.

1. The Operator must provide references for design methodology, and statistical validation of the data, where applicable.
2. The existing sediment stake in the center of the pond will not provide adequate accuracy for changes in sediment volume. A survey or additional stakes located at points of varying deposition rates are necessary.
3. A continuous recording flume at the entrance to the pond that will account for losses due to seepage of the pond or other methods to determine pond seepage losses should be included in the design methodology in order to obtain a representative CN for the area draining to the pond.

4. To obtain representative precipitation data, collection sites must be located throughout the watershed and an applicable computation method applied.
5. In order to eliminate losses due to evaporation, pond elevation readings should be obtained at the end of the precipitation event. Documentation that drainages have functioned adequately to maintain drainage to the pond as designed should be included. Descriptive documentation of the type of event, beginning rainfall and runoff should be included in field notes and appendices.
6. The Operator indicates the CN will be extrapolated for the 10 year 24 hour event if it does not occur. The Operator should include greater detail on the proposed method. The Operator should describe how antecedent moisture condition will be accounted for.

DEFICIENCY:

1. The Operator must provide additional information on data gathering methodology.

RECOMMENDATION:

The Operator should be requested to submit sufficient copies for other agency review. Approval letters must be received from the Department of Environmental Quality Engineers and UPDES. A copy of this deficiency letter should accompany the copies submitted to the previously referenced agencies.

Additional information must be included for approval of the method for CN determination on Pond 009. The Operator has made informal indications that the Hardscrabble Canyon will undergo reclamation in 1994. The Division feels the demonstration of detention compliance would not be necessary if the Operator will reclaim in the time it takes to obtain data for demonstration. It is felt that the Operator should instead provide a commitment to reclaim the area by the fall of 1994 and provide a probability analysis for an event exceeding that which can be retained in the pond. The Operator will remain liable for meeting the UPDES discharge standards if the operator chooses to commit to reclaim.