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STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

October 4, 1982

Mr. John Huefner
Kaiser Steel Corporation
Western Coal Operations
Sunnyside, Utah 84539

RE: Kaiser Steel Manshaft and Coarse
Refuse Pond Modifications
ACT/007/007
Carbon County

Dear John:

After reviewing the calculations that you submitted for both Manshaft and the Coarse Refuse Ponds, certain deficiencies have come to light. You have presented final calculations which do not meet minimum criteria based on certain incorrectly applied coefficients.

First of all, the curve number method is curvilinear relationship and by using an inappropriate CN, one can grossly overestimate or underestimate values of runoff. The Division feels that a CN=60 is not high enough to accurately reflect onsite disturbed conditions. A CN=70 or greater would more accurately reflect disturbed drainage conditions. AMC-I is not appropriate, AMC-II should be used when selecting CN's. In both cases, it would be more advantageous to delineate the drainage area contributing to the ponds and differentiate between disturbed and undisturbed drainage area. For example, (dirt roads, AMC-II, A soil group, CN=72) this is considerably higher than what you have selected. This will increase your runoff and also the size of your pond.

You have applied peak flows based on a CN=78 and runoff on a CN=60 together in your calculation of the Modified Univ. Soil Loss Equation (MUSLE). It seems that this is also not an appropriate selection of values, please remain consistent in applying your selection of values. The Division would also like some of the background data you used in your selection of coefficients for the MUSLE. It appears that your sediment yield/storm is well below what it should be designed for. Also, please justify why you chose or where you can document 1.5 storm events/year.

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It is felt, therefore, that you have undersized both sediment ponds and until these particular points are cleared up, the Division cannot approve your designs.

It should also be mentioned that 1 foot of freeboard is needed (UMC 817.46[i]) between your primary discharge pipe and your emergency spillway. It was noted that your designs only provided for .5 feet of freeboard on the Coarse Refuse Pond (the Manshaft pond couldn't be discerned).

Please also include your references, tables, etc., and sizing calculations for your primary discharge pipe showing 12" diameter pipe is adequate.

It is hoped that this review will be constructive in helping make your sediment ponds meet the minimum regulations criteria. If you have any questions, please feel free to call me.

Sincerely,



THOMAS MUNSON
RECLAMATION HYDROLOGIST

TM:sc

cc: Wayne Hedberg, DOGM
Joe Helfrich, DOGM