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State of Utah

DEPARTMENT OF NATURAL RESOURCES
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October 28, 1994

Michael Watson, President
U. S. Fuel Company
P. O. Box 887
Price, Utah 84501

Re: NOV Abatement Deficiencies, U. S. Fuel Company, Hiawatha Mines, ACT/007/0011-94F, 94G, 94H, Folder #5, Carbon County, Utah

Dear Mr. Watson:

The Division has completed a review of the information submitted on October 24, 1994 which was intended to abate NOV N94-41-5-6. The plans are not considered adequate for the abatement of parts 3 and 4 of the NOV and additional information is still required. Please review the enclosed technical memo which discusses the deficiencies and respond as quickly as possible. You should be aware that the abatement requirements and time frames are still in effect.

Please call me, Paul Baker or Steve Johnson if you have any questions.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

Enclosure
cc: P. Baker
J. Helfrich
S. Johnson
NOVDEFI.HIA

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October 26, 1994

TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist SMJ

RE: Draft Review, Abatement plan NOV N9441-5-6 parts 3,4 and 6, Hiawatha Mines, U.S., Fuel, ACT/007/011-94F, 94G and 94H, Working File, Carbon County, Utah

SYNOPSIS

Notice of violation (NOV) N94-41-5-6 was written by the Division to U.S. Fuel during an oversight inspection with the Office of Surface Mining (OSM) at the Hiawatha Mines, September 13 and 14, 1994. U.S. Fuel submitted abatement plans to the Division on parts 3, 4 and 6 on October 24, 1994. Part 3 of the NOV addresses diversion designs for ditch DD10; part 4 addresses catch basin designs; and part 6 addresses inlet designs for ponds D004 and D007.

ANALYSIS

Proposal:

U.S. Fuel has addressed the regulation for sediment pond designs for catch basins 1, 3, 4 and 6 under NOV N94-41-5-6 part 4. Catch basin 5 has been eliminated and replaced with a rock gabion structure. They show that catch basins 2 and 7 are already included in the plan with designs that are satisfactory. Basins 1, 3, 4, and 6 have been designed to fully contain the 10-year, 24-hour storm event (which is larger in volume that the 100-year, 6-hour). Topographic drawings are included for each of these structures and they will be inspected quarterly.

Designs for DD-10 were submitted. The designs show that the ditch is on slopes of 2 to 10%, 1800 feet long, triangular shape, and side slopes are 2 to 1. The drainage area is disturbed, with a curve number of 90, and area is 5.23 acres. The 10-year, 6-hour event results in a peak discharge of 2.41 cfs at a velocity of 4.92 fps. This velocity, according to the amendment, is non-erosive. Some erosion has occurred in this ditch, but it is attributed to a breach in the Slurry Pond No. 1 dike and has been repaired.

Part 6 of the violation was for failure to provide adequate slope protection on impoundment embankments. U.S. Fuel has designed and proposed the placement of riprap on the inlets to Pond 004 and Pond 007. Riprap will be added to ditches DD-10, DD-2 and DD-3. DD-11 was shown to have a non-erodible flow velocity.

Analysis:

The catch basins have been designed large enough to contain the 10-year, 24-hour storm even, but have not been designed to store any sediment volumes. A typical sediment pond would contain, at minimum, three years of sediment volume.

Photograph of the ditch taken at the time of the inspection show that the ditch is not triangular. It appears either rectangular or trapezoidal. It is not clear when the Slurry Pond dike was breached and how much water the ditch carried then. The ditch has continued to erode after the repairs were made.

Ditch DD-11 has a design flow velocity of 4.77 fps which is usually considered non-erosive. It is acceptable to use no riprap in situations like this since there is no erosion occurring in the application. DD-10, DD-2, and DD-3 are designed to have riprap of 5 inches, 4 inches, and 4 inches, respectively. These riprap calculations appear accurate; however, U.S. Fuel has proposed to place a filter blanket of fabric or 3/4 inch road base gravel between the base material and the riprap. The placement and size of filter blankets is commonly derived by analyzing the gradation of the riprap and base material. There are cases where no blanket is require, but that can only be determined with a gradation analysis of the base material.

Deficiencies:

1. U.S. Fuel must design sediment catch basins to have adequate sediment storage volume. **R645-301-742.221.31.**

2. DD-10 was shown to have a non-erodible design flow velocity. However, there is erosion that is occurring and has occurred since the repairs were made to the damage that occurred when the up slope berm breached. U.S. Fuel should clarify why this new erosion is happening. **R645-301-742.312.1.**

RECOMMENDATION

Amendment 94F, Catch Basin Designs, should not be approved because the designs submitted do not show adequate sediment storage in the catch basins. Amendment 94G, DD10 Ditch Designs, should not be approved based on the U.S. Fuel's determination that the

flow velocities are not erodible when erosion is occurring from discharges below the design magnitude. Amendment 94H should be approved with the condition that U.S. Fuel either use the filter fabric as a channel liner, or analyses the base material to determine the necessity and size requirements of a granular channel liner.

CC: Paul Baker
Joe Helfrich

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