



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

Michael O. Leavitt
 Governor
 Ted Stewart
 Executive Director
 James W. Carter
 Division Director

355 West North Temple
 3 Triad Center, Suite 350
 Salt Lake City, Utah 84180-1203
 801-538-5340
 801-359-3940 (Fax)
 801-538-5319 (TDD)

November 5, 1996

TO: Folder #2

THRU: Joe Helfrich, Permit Supervisor *DATA for*

FROM: Robert Davidson, Soils Reclamation Specialist *RAD*

RE: Topsoil Borrow Area "A", Hiawatha Complex, U. S. Fuel Company, ACT/007/011-96C, Folder #2, Carbon County, Utah

SYNOPSIS

U. S. Fuel Company originally submitted to the Division on 8/20/96 an amendment for the Topsoil Borrow Area "A" in preparation to continue reclamation of Slurry Pond #5. A revised submittal was received on 9/6/96. A Technical Analysis review showed several deficiencies associated with soils and hydrology for the revised submittal. An additional response to the deficiencies was submitted on 10/7/96. This TA reviews the soils portion of the most recent response for the permit amendment ACT/007/011-96C.

RECLAMATION PLAN TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

In order to continue with the reclamation of Slurry Pond #5, United States Fuel Company has submitted an amendment to the Mining and Reclamation Plan (MRP) to open Topsoil Borrow Area "A". The top 7 feet of soil will be removed from an effective surface area of 16.85 acres. Based on the cross sectional area and profile data of Borrow Area "A", the projected cumulative volume of substitute topsoil is 138,426 yd³. Soil borrow will affect horizons A1 (0" to 3" or 4944 yd³), B1 (3" to 11" or 13,183 yd³), C1 (11" to 37" or 42,846 yd³), C2 (37" to 78" or 67,565 yd³), and C3 (78" to 94" or 9,888 yd³). Beyond the C3 horizon are cobbles and boulders.

Since the volume of the A and B horizon soil provides little benefit for appreciable cover on the slurry pond surface, the A and B horizon topsoil will be used to reclaim the Topsoil Borrow Area "A". The total depth of the A and B horizons is 11 inches and provides an estimated 18,127 yd³ of soil. This topsoil will be removed as a unit, stockpiled and redistributed over the borrow area upon completion. The lower section of Borrow Area "A" was used for equipment



storage and has already had the A1 and B1 horizons removed from the east one-half of the site. This topsoil stockpile sits at the western edge of the equipment storage area. Prior to soil replacement, Borrow Area "A" will be prepared for reclamation by shaping and grading the side slopes and floor and installing diversion and erosion control features. After the topsoil is replaced on the borrow area, the surface will be disced to a depth of 10"-12" at approximate right angles to the slope. The discing will be discontinuous to reduce the formation of rills and gullies from runoff. The soil will then be upgraded in accordance with requirements of Table II-8 and reseeded according to the plan. *Live haul of the A and B horizon topsoil will heighten the reclamation success and recovery of the Topsoil Borrow Area "A".*

The C horizons are 73 inches thick and amount to 120,299 yd³ of soil. Therefore, a total of 120,299 in-place yd³ substitute topsoil is available for reclaiming Slurry Ponds 5 and 5A. The total surface area of the slurry ponds is 60.3 acres and require 129,712 yd³ of material for the 16" of substitute topsoil cover. The 120,299 yd³ volume will provide a 15 inch thick soil layer. A 10% swell factor provides a total of 132,329 yd³ of expanded soil material. The C horizon soils will be physically and chemically amended using fertilizers and organic mulch. Proper surface roughening and seeding density will further ensure revegetation success of the Slurry Pond #5.

The surface of Slurry Pond #5 has been graded at a slope 5:1 with the resulting surface appreciable altered since the MRP was originally approved. Additional sampling of the newly disturbed surface material was required to ascertain the toxic and acid forming properties before reclamation proceeded with Slurry Pond #5. The sampled material was analyzed according to the Divisions guidelines for management of topsoil and overburden¹. Results show that pH values are good, EC values are fair, pyritic ABP values are good, boron levels are good, and soluble selenium levels are good. Thus, all sampled parameters meet the Division's guidelines for overburden and approval for the 16 inches of soil cover as stated in the MRP.

Findings:

The amendment meets the regulatory requirements.

cc: Daron Haddock
Susan White
Pete Hess
O:\007011.HIA\DRAFT\STA#2HIA.RAD

¹ Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.