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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)

April 16, 1996

Ben Grimes, Sr. Staff Project Engineer  
Cyprus Plateau Mining Corporation  
P. O. Drawer PMC  
Price, Utah 84501

Re: Soils deficiencies, Cyprus Plateau Mining Company, Willow Creek Mine,  
PRO/007/038, Folder #3, Carbon County, Utah

Dear Mr. Grimes:

As you are aware the Division has been involved in reviewing the soils information in your application for the Willow Creek Mine. Various meetings and discussions have occurred regarding the adequacy or inadequacy of your application with respect to soils information. In an attempt to speed the process and aid you in completing your application, you have already been given draft findings regarding the deficiencies. Enclosed you will find a copy of the finalized version of the agreed upon course of action. Please make sure you have completed the required items and submit the results as quickly as possible. With the appropriate response to these deficiencies, the Division should be able to determine your plan to be complete with regard to soils information.

If you have any questions, please call me or Bob Davidson.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

Enclosure

cc: B. Davidson  
SOILDEFI.WIL





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April 15, 1996

TO: File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: Robert Davidson, Soils Reclamation Specialist *RD*

RE: Soils - Technical Analysis of Mining and Reclamation Plan, Willow Creek Mine, Cyprus Plateau Mining Company, PRO/007/038, Folder #2, Carbon County, Utah

## SYNOPSIS

The Division of Oil, Gas and Mining completed a Technical Analysis of the Willow Creek Mine Permit Application Package (PAP) on April 4, 1996. Several soils deficiencies were found in the sections Environmental Resource Information, Operation Plan and Reclamation Plan. On April 1, 1996, a meeting between the Division and Cyprus Plateau Mining Company (CPMC) was held to discuss the soils deficiencies concerning soil recovery availability, depth, and volumes. Information presented was reviewed and determined to be inadequate because of the lack of succinct soil resource information as explained in the Technical Analysis. An agreement was reached that CPMC would supply supplemental information justifying, correlating, and documenting soil recovery as presented in Table 4.2-1.

Review of the Technical Adequacy responses received from CPMC on April 10, 1996, showed deficiencies still remaining in the SOIL RESOURCE INFORMATION and in the OPERATION PLAN sections. Although the PAP was revised and expanded to contain the soils supplemental information requested in the April 1<sup>st</sup> meeting, accurate correlations were not sufficiently justified between soil resource information and soil recovery operations.

The Division verbally discussed with CPMC on April 11, 1996, the soils deficiencies still remaining within the Willow Creek PAP. Seven "course-of-action" items were discussed and a preliminarily draft memo was forwarded by facsimile transmittal (4/12/96) to Mr. Ben Grimes, Senior Staff Project Engineer, CPMC. Completion of these items will avoid further costly delay as conferred with CPMC. The Division requested that the soil pits be left open for review between the Division and CPMC.



## COURSE-OF-ACTION

1. Collect Order-I, soil pit information in the following construction sites:
  - Ventilation Fan area  
2 pits - 1 pit in disturbed soils  
- 1 pit in undisturbed soils
  - Upper Facilities Bench  
2 pits - 1 pit in disturbed soils  
- 1 pit in undisturbed soils behind ROM pile
  - Lower Facilities Area  
2 pits - 1 pit in disturbed soils (kidney shaped area between 95WCT05 and 06)  
- 1 pit in undisturbed soils (triangle area south of 95WCT06)
  - Stream Realignment #1  
1 pit (near WC-1)
  - Stream Realignment #2  
1 pit (east of 95WCT07)
  - Office Trailer and Rock Outcrop Area  
2 or 3 pits - 1 or 2 pits disturbed soils (near or around trailer)  
- 1 pit in undisturbed soils (below and west of rock outcrop, cliff area)
2. Amend section 3.1, Soils Information section to include 96 sampling soil pit information with complete soil Order-I description. Descriptions will include location, site description, horizon/layer identification, depth, color, texture, structure, acid reaction, and coarse/large fragments, boulders, etc. This information will meet the standards of the National Cooperative Soil Survey and will supply individual horizons/layers results of analyses plus morphological descriptions. Chemical analyses for each horizon/layer sampled will be supplied when completed and will amend the permit in Exhibit 5.
3. Update Map 4, Facilities Area Soils Map, to include 96 soil sampling pit locations.
4. Revise section 4.2, Soil Salvage, Handling, and Storage, tables 4.2-1 and 4.2-1A to accurately reflect new soil resource information, justification, and corrected volume amounts.

5. Include soil field log information for 96 sampling in Exhibit 5.

6. Still include text revision to reflect the soil recovery supervision commitment as well as a commitment to complete and provide a written narrative to UDOGM, following completion of soil removal operations, documenting actual soil recovery thicknesses and volumes and comparing actual recovery versus projected recovery based on 96 sampling results.

7. Make corrections to errors and inconsistencies within Section 3.1, SOILS INFORMATION, and Map 4, FACILITIES AREA SOILS MAP, as verbally discussed with Kent Crofts in April 1st meeting. These corrections are outlined below:

- pp 3.1-5 thru pp 3.1-6, 1979 Soil Investigations. Reference is made to excavation of 13 pits whereas only 10 pits are given in the text. These include 3 pits in Crandall Canyon area, 2 pits in Willow Creek area and 5 pits in Castle Gate Coal Company prep plant area.
- pp 3.1-6, 1979 Soil Investigations. Symbol discrepancy and confusion which symbol is referenced in text - HC or ⊕HC symbol. Symbol HC is shown on Soils Map 4 in CGCC prep area but not included in Legend. However, symbols ⊕HC are also shown in prep area with symbols given in Legend.
- pp 3.1-6, 1990 Sampling Program (CGCC). Preparation Plant Sample sites 1-8 are referenced in text but can only find 6 sites on Map 4. Sites on Map 4 and Legend are given by ◇#. The Legend simple states "Soil Sampling Site" and would be clearer if referenced as "1990 Soil Sampling Site."
- pp 3.1-6, 1991 Soils Mapping (CGCC). The text references Map 4 and reads at the end of the paragraph as "Extent of the Castle Gate Soils Survey Area" but is actually shown on Map 4 as "Limits of Castle Gate Coal Co. Soils Study Area."
- pp 3.1-6, 1994 Soil Sampling Program (CPMC). Twelve soil samples are referenced but can only find 1, 3, 4, 5, 6, 7, and 10 on Map 4. Can't find sites 2, 8, 9, 11, and 12 on Map 4. Text reads "soil pits" when in actuality they are "soil sampling sites" as shown in Exhibit 5.
- pp 3.1-6, 1995 Soils Sampling Program (CPMC). Text reads "13 additional soils pits were excavated" when in actuality the text should read as "13 additional soil sampling sites were sampled by auger" (see Exhibit 5).

- pp 3.1-10 thru pp 3.1-11, Pit 6 thru Pit 10. Each entry references “(Exhibit 8-4)” and would be clearer if shown as “(Castle Gate Coal Co. permit, Exhibit 8-4).”
- pp 3.1-12, 1994 Soils sampling Efforts section, 2nd paragraph, line 4. Map 4 reference given as “WC-1 through WC-12” and can’t find 2, 8, 9, 11, and 12. Again, text references “pits” and “1) Soils profile descriptions ...” when only grab-type samples were taken (see Exhibit 5).
- pp 3.1-13, Summary - Undisturbed Soils section, line 2. A total of 6.8 acres of new ground will be impacted and is discussed as: 4.2 acres as Soil 107, 1.3 acres as Soil 121, and 0.7 acres as Soil 63. These total up as 6.2 acres or 94%. The text is missing 0.6 acres at approximately 8.8%. Is the missing area Soil 72?
- pp 3.1-17, 3.1.2.4 Soil Availability and Suitability section, 1st paragraph. In Section 3.1.2.4, Soil Availability and Suitability, a comparison of the existing surficial soil materials is made for evaluation of reclamation suitability. The section implies that coal refuse materials and mine development wastes will be used as substitute topsoil. The implication is given by the evaluation of the suitability of all materials which could be utilized as potential growth media, which includes the separate evaluations of coal refuse materials and mine development wastes. Handling and disposal of coal refuse materials and mine development waste is regulated by 30 CFR 817.81, Coal Mine Wastes: General Requirements, and R645-301-528, Handling and Disposal of Coal, Overburden, Excess Spoil, and Coal Mine Waste. **Clarification of the text needs to make clear that the use of coal refuse, coal, mine development wastes or waste rock will not be used as substitute topsoil.**
- pp 3.1-25, 1st paragraph, line 2. These are not “conclusions” but “comparisons.”
- pp 3.1-25, Selenium (Se) section, 1st paragraph, line 2. The “0.076 mg/kg” should be “0.0076 mg/kg” since the values range between <0.005 and 0.010.