

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 30, 2004

OK

TO: Internal File

THRU: *JH* Joe Helfrich, Team Lead

FROM: James D. Smith, Environmental Scientist *JDS*

RE: Reformat and Digitization, CO-OP Mining Company, Bear Canyon Mine, Permit C/015/0025, Task ID#1989

SUMMARY:

The Permittee initially submitted a reformatted MRP on January 27, 2003. Along with a hard copy of the plan, the entire plan was submitted in electronic format on a CD in Adobe® .pdf format.

Permittee's Action		DOGM's Action	
Original submittal - Task # 120	01/27/2003		
		Tech Memo – Geology and Hydrology	06/30/2003
		TA	07/30/2003
Response to TA - Task # 1863	03/01/2004		
		Tech Memo – Geology and Hydrology	05/03/2004
		TA	05/26/2004
Response to TA – Task # 1989	05/25//2004		
		Tech Memo – Geology and Hydrology	
		TA	

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Except for a few sections of the current MRP that make reference to other parts of the MRP and have become outmoded with this latest submittal, basically all information from Chapters 6 and 7 of the current MRP, including the appendices, has been incorporated into the electronic MRP. However, there are some deficiencies that need to be addressed, as outlined in the following analyses and findings.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

Outside materials are cited throughout Chapter 6. Section 624.130 refers to Section R534-301-620 for information on geologic literature and references. There is no bibliography in Chapter 6. There is two reference sections in Chapter 7: one on pages 7-85 and 7-86, the other on pages 7-142 and 7-143. These include some - but not all - of the referenced materials. There is no bibliography, reference section, or other information for identifying or locating copies of the following referenced materials:

Cordova, 1964

Doelling, 1972

Davis and Doelling, 1977

EarthFax Engineering, 1992

Paul Wier Company, 1977

Stokes, 1964

They need to be included in the References.

The first three are readily identified, being publications of the Utah Geological and Mineral Survey (UGMS; a.k.a. the Utah Geological Survey) and are generally available to the public:

Cordova, Robert M., 1964, Hydrogeologic reconnaissance of part of the headwaters area of the Price River, Utah, Utah Geological and Mineral Survey Water Resources Bulletin 4, Salt Lake City, Utah.

Doelling, H. H., 1972, Central Utah coal fields: Sevier-Sanpete, Wasatch Plateau, Book Cliffs and Emery, Utah Geological and Mineral Survey, Monograph Series. No. 3.

Davis, F. D., and Doelling, H. H., 1977, Coal drilling at Trail Mountain, North Horn Mountain, and Johns Peak areas, Wasatch Plateau, Utah, Utah Geological and Mineral Survey Bulletin 112, Salt Lake City, Utah.

EarthFax Engineering, 1992 is in Appendix 6-A. Paul Wier Company, 1977 and Stokes, 1964 are not readily identified and - especially as they may not be generally available - they need to be clearly identified in the References.

Findings:

Permit Application Format and Contents are not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-122, 624-130, The Permittee needs to clearly and sufficiently identify all referenced materials.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Basically all information from the text of Chapter 6 of the current MRP, including the appendices, has been incorporated into the electronic MRP. A few short statements that refer to other parts of the MRP have been omitted. Most references to maps, tables, figures, or text in other parts of the MRP are now connected to those referents by hyperlinks.

Findings:

Geologic Resource Information is sufficient to meet the requirements of the Coal Mining Rules.

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HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Basically all information from the text of Chapter 7 of the current MRP, including the appendices, has been incorporated into the electronic MRP. However, there are some corrections needed.

Appendix 7-L

- Appendix 7-L, the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA) is listed in the Table of Contents and referred to several times in the MRP; however, this appendix is empty in the electronic MRP. The Division is providing the latest version of the CHIA to the Permittee, in Adobe® .pdf format, so it can be included in Appendix 7-L.

Appendix 7-N-F

- “DH-1A Panther Slug Withdrawal Test #1” is on pages F-35 through F-37. Page 1 of the printout is out of sequence, located on page F-37 rather than F-35. It needs to be put in the proper sequence, preceding page 2 of the printout. The current and needed paginations are shown in the following table.

Page in Appendix 7-N-F	Current page from “DH-1A Panther Slug Withdrawal Test #1”	Needed page from “DH-1A Panther Slug Withdrawal Test #1”
F-35	Page 1-2	Test Description
F-36	Chart	Page 1-2
F-37	Test Description	Chart

- “DH-4 Slug Test #2” is on pages F-104 through F-126 and F-129. Page 3 of the printout is out of sequence, located on page F-104 rather than page F-106. It needs to be put in the proper sequence, following page 2 of the printout. The current and needed paginations are shown in the following table.

Page in Appendix 7-N-F	Current page from “DH-4 Slug Test #2”	Needed page from “DH-4 Slug Test #2”
F-104	Page 3	Page 1

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		Test Description
F-105	Page 1 Test Description	Page 2
F-106	Page 2	Page 3

- In addition, the charts for “DH-4 Slug Test #2” (page F-129) and “DH-4 Bail Test #2” (page F-127) are switched. The current and needed paginations are shown in the following table.

Page in Appendix 7-N-F	Current page content	Needed page content
F-126	Page 23 of “DH-4 Slug Test #2”	No change
F-127	Chart for “DH-4 Bail Test #2”	Chart for “DH-4 Slug Test #2
F-128	Test description for “DH-4 Bail Test #2”	No change
F-129	Chart for “DH-4 Slug Test #2”	Chart for “DH-4 Bail Test #2”

Baseline Information

Water Rights are listed in Table 7-6 and locations shown on Plate 7-4. Printouts of water right information from the Division of Water Rights, which are in Appendix 7-C of the current MRP, have not been included in Appendix 7-C of the digitized and reformatted MRP. Instead of providing printouts, which can become outdated, the digital MRP refers to the Utah Division of Water Rights website at:

<http://nrwrt1.nr.state.ut.us/wrinfo/query.asp>

However, the MRP does not have this as an active link to the Water Rights web page. Additional information, which is not found on the Division of Water Rights web site, is in Appendix C.

Baseline Cumulative Impact Area Information

Section 729 of the electronic MRP refers to Appendix 7-L as the location of the CHIA. Appendix 7-L, the Gentry Mountain Cumulative Hydrologic Impact Assessment (CHIA), has been omitted from the electronic MRP. This findings document is prepared by the Division and

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inclusion of the CHIA in the MRP is not necessary; however, The Division is providing the latest version of the CHIA to the Permittee, in Adobe® .pdf format, so it can be included in Appendix 7-L.

Probable Hydrologic Consequences Determination

Section 728 of the electronic MRP refers to Appendix 7-J, which contains the PHC determination.

Findings:

Hydrologic Resource Information is not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121, The Division is providing the latest version of the CHIA to the Permittee, in Adobe® .pdf format. This CHIA needs to be in Appendix 7-L.

R645-301-121, There are some pagination corrections needed in Appendix 7-N-F

Page in Appendix 7-N-F	Current page from "DH-1A Panther Slug Withdrawal Test #1"	Needed page from "DH-1A Panther Slug Withdrawal Test #1"
F-35	Page 1-2	Test Description
F-36	Chart	Page 1-2
F-37	Test Description	Chart

Page in Appendix 7-N-F	Current page from "DH-4 Slug Test #2"	Needed page from "DH-4 Slug Test #2"
F-104	Page 3	Page 1 Test Description
F-105	Page 1 Test Description	Page 2
F-106	Page 2	Page 3

Page in Appendix 7-N-F	Current page content	Needed page content
F-126	Page 23 of "DH-4 Slug Test #2"	No change
F-127	Chart for "DH-4 Bail Test #2"	Chart for "DH-4 Slug Test #2"

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F-128	Test description for “DH-4 Bail Test #2”	No change
F-129	Chart for “DH-4 Slug Test #2”	Chart for “DH-4 Bail Test #2”

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Coal Resource and Geologic Information Maps

Plates 6-1 through 6-16 cover the permit and adjacent areas. The order of the plates is different from the current MRP, and Plates 6-5 through 6-8 have been added to provide information on the Bear Canyon Seam. Except for Plate 6-6, plates listed in Table of Contents are linked to the corresponding map files, and except for the reference to Plate 6-15 on page 6-15, each reference in the body of the text is linked to the appropriate map. (Missing hyperlinks are not a deficiency in the plan but these links should be completed to take fullest advantage of the digital format.) The maps now cover areas north and east of the areas shown on the old, paper maps.

Findings:

Maps, plans, and cross sections of Resource Information are sufficient to meet the requirements of the Coal Mining Rules.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

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Analysis:

General

Basically all information from the text of Chapter 7 of the current MRP, including the appendices, has been incorporated into the electronic MRP. However, there are some corrections needed.

Appendix 7-H:

Previous amendments to the Bear Canyon Mine hard-copy MRP have required additional pages be inserted into Appendix 7-H. The inserted pages were labeled with numbers followed by letters (e.g. 7H-14A) rather than page numbers alone so that pages that followed the inserted material did not need to be renumbered. In the electronic MRP, all pages have been given sequential numbers, which puts the page numbering of the digital MRP out of sequence with that of the paper MRP, for example 7H-14A has become 7H-15 and pages 7H-112A through 7H-112E are 7H-110 through 7H-115 in the latest electronic version: this results in page references in the text on pages 7H-16, 7H-47, 7H-49, 7H-75, and 7H-130 of Appendix 7-H (and probably others elsewhere) that are not correct.

On page 7H-47 it states:

The channel cross-sections are shown on pp. 7H-47 through 7H-50. A minimum freeboard of 1.0 ft or 20% of the flow depth was provided, whichever is greater (Barfield et. al., 1981).

There were two pages labeled 7-47, two labeled 7-48, two labeled 7-49, and two labeled 7-50 in Appendix 7-H of the previous version of the electronic MRP. In the latest electronic submittal, the pages 7H-47 through 7H-50 that showed channel cross-sections for RC-1 through RC-12 have been removed: they must be restored to the MRP.

Groundwater Monitoring

Cation-anion balance has been added to Table 7-13, the Ground Water Quality Parameter List.

Findings:

Operation Plan Hydrologic Information is not sufficient to meet the requirements of the Coal Mining Rules. Before the proposed amendment can be approved, the Permittee needs to provide the following information:

R645-301-121.200, In Appendix 7-H, the Permittee needs to:

- (1) Restore the four pages showing channel cross-sections RC-1 through RC-12;
- (2) Repaginate; and
- (3) Match page references in the text to the new page numbers.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Hydrology maps have been digitized. Plates listed in Table of Contents are linked to the corresponding map files.

Findings:

Maps, plans, and cross sections of Mining Operations are sufficient to meet the requirements of the Coal Mining Rules.

RECOMMENDATIONS:

The Reformat and Digitization of the MRP cannot be approved until the deficiencies described above are addressed satisfactorily.