

June 30, 2003

TO: Internal File

THRU: Joe Helfrich, Team Lead

FROM: James D. Smith, Environmental Scientist

RE: Reformat and Digitization, CO-OP Mining Company, Bear Canyon Mine, Permit C/015/025-AM03A

SUMMARY:

The Permittee 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.

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 corrections needed, as outlined in the following analyses and findings.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

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

Analysis:

Scanning has introduced some “typographic” errors, such as on page 7-30:

“...exceeded the drinking water tandards (sic) of the U.S. Environmental Protection Agency (1976). ...Tar (sic) from the Star Point commonly contains slightly higher concentrations of both dissolved solids and sulfate than water from younger rocks in the area.”

The Division did not closely check the entire MRP for such slips, but the Permittee needs to review the entire submittal for these scanning errors and make necessary corrections.

Section 624.130 refers to Section R534-301-620 for information on geologic literature and references. Outside materials are cited throughout Chapter 6, but there is no bibliography or reference section where these cited works are described.

Findings:

R645-301-121.200, The Permittee needs to review the entire submittal for scanning errors such as misspellings and make necessary corrections.

R645-301-122, The Permittee needs to provide a bibliography or reference section where cited works are described.

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. However, there are some corrections needed in the electronic MRP.

On page 6-13 of the electronic MRP, Plates 5-4A, 5-4B, and 5-4C are listed as maps showing the mine workings: this should list Plates 5-1A, 5-1B, and 5-1C.

On pages 6-16, 6-18, and 6-20 of the electronic MRP, Plate 3-4A is identified as showing locations for the bore holes: Plates 3-4A, -4B, and -4C are not in the electronic MRP and reference should be to Plate 7-4 or another plate in the electronic MRP that shows the locations of these boreholes.

The links from the text on page 6-20 to Appendix 7-N do not function.

Table 6-2 on page 6-11 in the electronic MRP did not scan correctly and does not make sense.

The description of the Hiawatha Seam on page 6-12 in the electronic MRP has been truncated: the rest of the paragraph and the short paragraph that follows it – on page 6-19 of the current MRP - need to be incorporated into the electronic MRP.

The reference to Table 3K-1 on page 6-16 for parameters to be tested for roof, floor and mid-seam analyses is invalid: Appendix 3K now contains information on vertebrates of Utah.

Findings:

R645-301-121.200, The Permittee needs to (1) On page 6-13, refer to Plates 5-1A, 5-1B, and 5-1C as the maps showing the mine workings, instead of Plates 5-4A, 5-4B, and 5-4C (2) On pages 6-16, 6-18, and 6-20, change the reference from Plate 3-4 to Plate 7-4 or any other plate in the electronic MRP that shows the locations of the boreholes. (Plates 3-4A, -4B, and -4C are not in the electronic MRP) (3) Establish the link from the text on page 6-20 to Appendix 7-N (4) Table 6-2 on page 6-11 in the electronic MRP did not scan correctly, does not make sense, and needs to be redone (5) The description of the Hiawatha Seam on page 6-12 in the electronic MRP has been truncated: the rest of the paragraph and the short

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paragraph that follows it – on page 6-19 of the current MRP - need to be incorporated into the electronic MRP (6) The reference to Table 3K-1 on page 6-16 (for parameters to be tested for roof, floor and mid-seam analyses) is invalid, and the correct table needs to be referenced.

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-A

- FIG 7A-2: the bottom section is labeled “...some carbon and shale” instead of “...some carbon and coal”, as it is in the current MRP;
- FIG 7A-7: “(Trace coal)” at 40 feet is not shown, as it is in the current MRP.

Appendix 7-L

- Appendix 7-L is referred to several times in the MRP, but this appendix was not included as part of the electronic MRP. The CHIA (Appendix 7-L) is prepared by the Division, and is available in Adobe® .pdf format

Appendix 7-M:

- For the June 24, 1993 sample at FBC-4, the sample ID number and the analysis report number (59-13225) on the first page of the lab sheet (page 36) are not legible in the electronic MRP;
- Some lab reports are intermixed or out of sequence in the electronic MRP:
 - 59-13474 (pages 38 and 40) and 59-13637 (pages 39 and 41);
 - UO09000 (pages 294 and 296) and UO08996 (pages 295 and 297);
 - UO17431 (pages 304 and 306) and UO17430 (pages 305 and 307);
- The second page of the September 11, 1997 report for FBC- 5 (lab report number 559-17762) is missing in both the current MRP and electronic MRP. The first page is page 71 in the electronic MRP;
- The first page of report 59-13625 for WHR-3, dated October 11, 1993 is missing in the electronic MRP (the second page is on page 211 in the electronic MRP)

Appendix 7-N

- The graph of the slug test at DH-3 is out of place;
- Table D-4 in Appendix 7-N-D in the electronic MRP is incorrectly labeled Big Bear Spring: it should read Birch Spring;
- The chart for “DH-4 Slug Test #2” is missing from Appendix 7-N-F in the electronic MRP;
- Plates 7N-3, 7N-4, and 7N-5 are missing from the electronic MRP.

Baseline Information

Only a fraction of the water rights information has been included in Appendix 7-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 inclusion of the CHIA in the MRP is not necessary; however, either the statement in Section 729 needs to be revised or the current CHIA needs to be added to the electronic MRP.

Probable Hydrologic Consequences Determination

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

Findings:

R645-301-121.200, The Permittee needs to(1) Either revise the statement in Section 729 or add the CHIA as Appendix 7-L (2) Include all water-rights information in Appendix C (3) Correct FIG 7A-2 of Appendix 7-A: the bottom section is labeled “...some carbon and shale” instead of “...some carbon and coal” (4) Show the “(Trace coal)” at 40 feet on FIG 7A-7 of Appendix 7-A (5) Include the CHIA as Appendix 7-L (6) In Appendix 7-M, provide legible version of the June 24, 1993 sample at FBC-4, the sample ID number and the analysis report number (59-13225) on the first page of the lab sheet are not legible in the electronic MRP (7) In Appendix 7-M, collate the following lab reports into correct sequence: 59-

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13474 (pages 38 and 40) and 59-13637 (pages 39 and 41); UO09000 (pages 294 and 296) and UO08996 (pages 295 and 297) (8) UO17431 (pages 304 and 306) and UO17430 (pages 305 and 307) (9) In Appendix 7-M, include the second page of report 59-17762 for FBC- 5, dated September 11, 1997 (the first page is page 71 in the electronic MRP) (10) In Appendix 7-M, include the first page of report 59-13625 for WHR-3, dated October 11, 1993 (the second page is on page 211 in the electronic MRP) (11) In Appendix 7-N, put the graph of the slug test at DH-3 in a logical sequence with the rest of the information (12) In Appendix 7-N-D, correctly label Table D-4 in Appendix 7-N-D as Birch Spring (13) In Appendix 7-N-F, provide the chart for “DH-4 Slug Test #2”-F (14) In Appendix 7-N, provide Plates 7N-3, 7N-4, and 7N-5.

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

New Plates 6-6, 6-7, 6-8, and 6-9 have not been included in the electronic MRP submittal.

Information sent with the submittal indicates that the other maps – Plates 6-1 through 6-5 and 6-10 through 6-16 – are to cover an extended area; however, only Plate 6-1 was submitted with the electronic MRP, and it is password protected and cannot be viewed. Therefore none of these maps could be checked.

Findings:

R645-301-121.200, The Permittee needs to include electronic versions of Plates 6-1 through 6-16.

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.

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-F

- Page 7F-72, "Protection From Rapid Drawdown" is missing from in the electronic MRP.

Appendix 7-G.

Information on the following watersheds, culverts, and diversions has not been included in the electronic MRP or differs from that in the current MRP:

- AU-23A (current page 7G-33A) is missing;
- AU-28A (current page 7G-36A) is missing;
- C-36U through C-40U (current page 7G-46) are missing;
- D-17D (current page 7G-98) is missing;
- D-6U, additional minimum depth and freeboard information in the current MRP (page 7G-142) is missing from the electronic MRP;
- C-37U on page 7G-89 in the electronic MRP, required riprap size is given as 6 feet instead of 6 inches;
- D-35U, minimum freeboard value in the electronic MRP is different from that in the current MRP;
- D-43U, velocity is shown as 6.69 fps at the bottom in the electronic MRP, rather than 6.96 fps as in the current MRP.

Appendix 7-H:

- WS-27, Peak Flow and T results on page 7H-15 in the electronic MRP are different from those on page 7H-13 of the current MRP;
- The channel cross-sections, shown on pages 7H-47 through 7H-50 of the current MRP, are not in the electronic MRP;
- RC-RD17 through RC-RD21 are missing from the table on page 7H-76 in the electronic MRP (page 7H-79 in the current MRP);

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- RCC-12 through RCC-15 are missing from the table on page 7H-77 in the electronic MRP (page 7H-80 in the current MRP);
- RC-RD21 on page 7H-114 in the electronic MRP: several parameter values, especially minimum depth, freeboard, and D_{50} (for steep slope?) are different from values given in the current MRP; (see page 7H-112E in the current MRP);
- RCC-12 on page 7H-126 in the electronic MRP does not give the minimum riprap conditions;
- RCC-13 on page 7H-127 in the electronic MRP does not give the minimum riprap conditions;
- RCC-14 on page 7H-128 in the electronic MRP does not give the minimum riprap conditions;
- RCC-15 on page 7H-129 in the electronic MRP does not give the minimum riprap conditions.

Appendix 7-O

- Page 7O-45 is missing from the electronic MRP

Groundwater Monitoring

Table 7-13 lists the parameters for ground-water monitoring. Cation-anion balance is not included: this parameter needs to be added.

Findings:

R645-301-121.200, The Permittee needs to (1) Provide page 7F-72 in Appendix 7-F; Provide information in Appendix 7-G on the following watersheds, culverts, and diversions; AU-23A (current MRP page 7G-33A); AU-28A (current MRP page 7G-36A); C-36U through C-40U (current MRP page 7G-46); D-17D (current MRP page 7G-98); D-6U, additional minimum depth and freeboard information (current MRP page 7G-142); Determine the correct riprap size for C-37U on page 7G-89 in Appendix 7-G; Determine the correct minimum freeboard value for D-35U in Appendix 7-G; Determine the correct velocity for D-43U in Appendix 7-G (2) Determine the correct Peak Flow and T results for WS-27 on page 7H-15 in Appendix 7-H (compare with page 7H-13 of the current MRP) (3) Provide the channel cross-sections, shown on pages 7H-47 through 7H-50 of the current MRP, in Appendix 7-H (4) Provide information for RC-RD17 through RC-RD21 in the table on page 7H-76 Appendix 7-H (see page 7H-79 in the current MRP) (5) Provide information for RCC-12 through RCC-15 in the table on page 7H-77 in Appendix 7-H (see page 7H-80 in the current MRP) (6) Determine the correct parameter values,

especially minimum depth, freeboard, and D_{50} (for steep slope?), for RC-RD21, on page 7H-114 in Appendix 7-H of the electronic MRP (see page 7H-112E in the current MRP) (7) Determine minimum riprap conditions for RCC-12, on page 7H-126 in Appendix 7-H (see page 7H-123A in the current MRP) (8) Determine minimum riprap conditions for RCC-13, on page 7H-127 in Appendix 7-H (see page 7H-123B in the current MRP) (9) Determine minimum riprap conditions for RCC-14, on page 7H-128 in Appendix 7-H (see page 7H-123C in the current MRP) (10) Determine minimum riprap conditions for RCC-15, on page 7H-129 in Appendix 7-H (see page 7H-123D in the current MRP) (11) In Appendix 7-O, provide page 7O-45.

R645-301-731.210, Cation-anion balance needs to be added to Table 7-13

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:

Maps have been digitized.

- Plate 7-1B in the current MRP is the 9th revision, dated approved on 02/10/2000: the electronic MRP contains the 8th version, dated approved on 09/04/1996;
- Plate 7-1E in the current MRP is the 5th revision, dated approved on 02/10/2000: the electronic MRP contains the 4th revision, dated approved on 4/15/1998.

Findings:

R645-301-121.200, The Permittee needs to provide the latest versions of Plates 7-1B and 7-1E.

RECOMMENDATIONS:

The electronic version of the MRP cannot be approved until the deficiencies described above are addressed satisfactorily.