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State of Utah

Department of Natural Resources

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September 12, 2006

Charles Reynolds, Resident Agent
Co-Op Mining Company
P.O. Box 1245
Huntington, Utah 84528

Subject: Permit area Additions U-46484, 61048, U-61049, and U-46484, and Fee Acreages, Task ID #2597, Co-Op Mining Company, Bear Canyon Mine, C/015/0025

Dear: Mr. Reynolds

The Division has reviewed your application to increase Lease Additions U-46484, 61048, U-61049, and U-46484, and Fee Acreages permit areas U-46484 and U-61049.

The Division has determined that there are some deficiencies that must be addressed before a determination can be made that the requirements of the R645 Coal Mining Rules have been met, and an approval can be granted. Those deficiencies are listed as an enclosure to this letter. We have also enclosed a list of deficiencies identified by the Manti La Sal National Forest. Please prepare your response to address their concerns as well.

Each deficiency identifies its author by that author's initials in parentheses, such that your staff can directly communicate with that individual should any questions arise relative to the preparation of Co-Op Mining Company's response to that particular deficiency. Please note that there are no deficiencies relative to bond determination or soils.

Please respond to these deficiencies as soon as possible, but by no later than October 13, 2006, such that we may efficiently process your application.

Sincerely,

D. Wayne Hedberg
Permit Supervisor

an
Enclosures (Deficiency List & USFS comments)

cc: Karl Boyer, USFS (Price)
Ranvir Singh, OSM (Denver)
Jim Kohler, BLM (SLO)
Steve Rigby, BLM (Price)

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Deficiency List
Task ID #2597

The members of the review team include the following individuals:

Joe Helfrich [JCH]
Steve Christensen [SKC]
Pete Hess [PHH]

Jim Smith [JDS]
Priscilla Burton [PWB]

Biology

R645-301-320, The riparian communities associated with the springs and perennial streams need to be documented in the text on page 3-32 section 322.220. [JCH]

R645-301-322, -301-333, -301-342, -301-358.

- The Applicant has committed to conducting Raptor surveys every five years and one year prior to mining in a new area or under an escarpment and one year following retreat mining. An estimated schedule needs to be included in the application.
- A map of the 2006 DWR raptor survey with the nest site locations needs to be included in the application and marked confidential. Plate 5-3A also shows that nests 902, 903, 904, 907, 920, 921, and 908 are within the limits of predicted subsidence. The applicant needs to explain how these nest sites will be protected from subsidence.
- Page 3-68 paragraph one of the application states that no mining will occur within 100' of an outcrop. This statement needs to be clarified as the outcrop may be located well below a nest site and the predicted subsidence within the angle of draw may impact a nest site at a higher elevation.
- Page 3-25, Bird paragraph, the text needs to be changed to agree with the text on page 3-30 Paragraph 3. Page 3-44, Lease Areas paragraph one, delete the text regarding retreat mining.
- As noted in the PHC, the mining operations consume approximately 22 acre-feet of water per year. The applicant needs to include the criteria and calculations used to calculate this figure as well as calculations for mine water consumption in the proposed lease area additions. The figures need to be revised in the current PHC to reflect projected mine water consumption in the longwall areas to be mined. These figures should be checked again when longwall mining operations commence in the new lease areas.

Most of these deficiencies in the Biology section were discussed with the applicant on August 31, 2006 at the PFO.

Cultural Resources

R645-301-411, The archeological survey as defined by the applicant, Sagebrush Consultants L. L. C. and Bruce Ellis needs to be completed and included in the application for the new lease additions. The survey should also include coordination with and evidence of clearances by the SHPO, (State Historic Preservation Office). [JCH]

R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731, The application needs to include Archeological Site maps and Cultural Resource maps for those acreages included in the lease addition. The maps need to be marked confidential. [JCH]

Engineering

R645-301-522, Coal Recovery; Confirmation from the USDOJ / BLM / SLO that the resource recovery and protection plan(s) is adequate for each of the Federal coal leases which is being proposed for addition to the Bear Canyon Mine permit area. [PHH]

R645-301-523; the Permittee must describe the anticipated annual production being recovered for each of the following mining methods;

- 1) Continuous mining primary development;
- 2) Continuous mining secondary extraction;
- 3) Longwall secondary extraction.

R645-301-525.200, R645-301-358.200, The Permittee must describe what measures are to be taken to prevent damage to this area from the underground secondary coal extraction activities. The Permittee must provide a map that correlates the surface location of this area to be protected with the underground workings, and how the protection area correlates with the extraction area, (i.e., how does the surface location correlate with the longwall face). The Permittee must revise Plate 5-3 to accurately reflect the area of potential subsidence above the perimeter of the projected mine workings, using the selected angle of draw determined above and the average depth of overburden within the mining area. [PHH]

R645-301-525.312, The Permittee must clearly define how it will monitor and/or protect this area. The Permittee must correlate this location with a map of the underground workings showing the protection area, and blocks of coal that are to be left to protect it. [PHH]

R645-301-525.440, the Permittee must commit to installing **ONE** subsidence monitoring point in each longwall panel as close to the longitudinal and latitudinal center of the panel as possible in order to determine when subsidence has reached its maximum in that area. Comparison of data with adjacent monitoring points will determine if the subsidence trough is at the supercritical stage.

R645-301-525.440, the Permittee must commit to compiling an analysis of the subsidence monitoring data that is submitted with the annual monitoring report for the area, which was extracted during the current monitoring year. An analysis of the monitoring data for previous years over areas adjacent to those extracted during the current monitoring years is also required. However, the analysis of data for areas which have been extracted two years prior to the current monitoring year **IS NOT NECESSARY**. [PHH]

R645-301-525.480,

- The Permittee must provide a description of the measures to be taken to replace adversely affected state-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures. [SKC]
- The Permittee should commit to replacing any water resource that has been materially damaged as a result of mining activity, as well as delete the language connecting water replacement efforts directly to an impacted state appropriated water right on pages 5C-9 and 7-48. [SKC]

Hydrology

R645-300-133.100, 301-121.200, 522, The Permittee must: Correct or update the “Total Tons” and “TOTAL” tonnages in Table 5-1; and correct or update the tonnage Subtotal for lease U-46484. (This has already been discussed with Mark Reynolds, and he has a corrected version of Table 5-1 ready to insert in the next submittal.) [JDS]

R645-301-724.100, -724.200: State Appropriated Water Rights

- The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. (See State Appropriated Water Rights section for detailed information). [SKC]
- The Permittee should provide additional state appropriated water right information. Per a conversation with Marc Stillson, Price, UT Water Rights Division Office and Mark Reynolds, C.O.P., it was agreed that: priority date, place of use, point of diversion and nature of use associated with each state appropriated water right located on the proposed lease expansion would be included in the MRP. [SKC]

R645-301-724, -724.100, -724.200, -731.210 and -731.220: (Baseline Information and Ground Water and Surface Water Monitoring –Operational Plan)

- The Permittee should provide a written description in the pertinent text sections (i.e. Ground and Surface Water sections in the Baseline Environmental Description; 724.100 and 724.200, as well as in the Ground and Surface Water Monitoring sections in the Operational Plan; 731.210 and 731.220) clearly outlining what year specific ground and

surface water sites will begin to be monitored as mining activity approaches their location (i.e. 3 years prior to undermining). In addition, the Permittee should provide a written explanation as to why the sites are being slated for future monitoring as opposed to immediate operational monitoring in each of the aforementioned sections. (See Ground and Surface Water Monitoring sections for further comments on proposed monitoring plan.) [SKC]

R645-301-728: Probable Hydrologic Consequences

- The application does not meet the hydrology Probable Hydrologic Consequences Determination requirements as provided in R645-301-728. Page 7-60 makes a brief reference to water mitigation efforts in the event that mining activity impacts either the Left or Right Fork of Fish Creek. The Permittee should remove mitigation language from this section and discuss the proposed plan in the Replacement of State Appropriated Water Supply in the Operational Plan section. [SKC]

R645-301-722, -731: Maps, Plans and Cross Sections

- The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. In addition, the title of Plate 7-12 should be changed to Water Rights. (See State Appropriated Water Rights section for detailed information). [SKC]
- The Permittee should update Plate 7-4 to reflect water monitoring and mine plan changes as brought about by recent site visits and meetings with the Division, water users and the USDA Forest Service. (See the Maps, Plans and Cross Sections of Mining Operations in the Operational Plan section, R645-301-731, of this memo for specific comments). [SKC]
- The Permittee needs to clarify which Plate 7-4 is the correct one, as the digital version depicts an area of concern on the Right Fork of Fish Creek, yet the hard copy version submitted to the Division does not depict this area of concern. [SKC]

R645-301-731.210, -731.220: Surface and Groundwater Monitoring

- Page 7-48 of the MRP states, "A recommended water monitoring program is included in Appendix 7-J, Section 10.0". The Permittee should make clear which monitoring program is to be followed; i.e., the program outlined in Appendix 7-J, or the program outlined in Chapter of 7 of the MRP, as they are different. [SKC]
- The Permittee should provide a written commitment to begin sampling sites FC-2, FC-3, FC-4, SBC-18, and SBC-20 beginning the 1st quarter of 2007. A start date of 2007 is listed on Table 7-14 for the aforementioned ground and surface water sites, but there is no specification in the text of the MRP that states when in 2007. [SKC]

- Plate 5-1B, Hiawatha Seam Workings, does not depict a start date for (presumably) long wall panels 5 and 6. The Permittee needs to clarify in the MRP when these areas are to be mined in order to adequately identify the 3-year baseline collection/water monitoring commencement date for the hydrologic resources identified in this area: SCC-5, WR-2, WR-3 and WR-4. The sites have a water monitoring start date of 2013 according to Table 7-14, yet Plate 5-1B does not support this. [SKC]
- The Permittee needs to provide a more detailed monitoring program to assess potential impacts to the Left and Right Forks of Fish Creek, as they have been identified as perennial in Appendix 7-J (See the Operational Plan Surface and Groundwater Monitoring section for more comments). [SKC]

R645-301-731.210: Groundwater Monitoring

- The Permittee will need to amend Table 7-14, Plate 7-4 and related text portions of chapter 7 Groundwater Monitoring, to reflect recent changes to the mine plan as well as the alteration of the water-monitoring program. (See Groundwater Monitoring section, R645-301-731.210, for details and specific deficiencies). [SKC]

R645-301-731.220: Surface Water Monitoring

- Surface water site FC-4 is depicted on Plate 7-4, however it is not listed on Table 7-14. The Permittee should update the table and the text on page 7-57 to reflect the addition of this surface water site on the upper reach of the Left Fork of Fish Creek. [SKC]
- Cedar Creek surface water-monitoring sites CK-1 and CK-2 have a monitoring start date of 2010 as listed on Table 7-14. However, according to Plate 5-1B, a rock tunnel is to be constructed in this area in 2010. In order for 3 years of baseline to be collected prior to mining activity, the two surface water sites would need to be monitored starting in 2007. In addition, the sites were depicted on previously submitted submittals as active monitoring sites. The Permittee needs to address this discrepancy in the text and on Plate 7-4 and Table 7-14. [SKC]

R645-301-731.50: State-Appropriated Water Replacement

- The Permittee must provide a description of the measures to be taken to replace adversely affected state-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures. [SKC]
- The Permittee should commit to replacing any water resource that has been materially damaged as a result of mining activity, as well as delete the language connecting water replacement efforts directly to an impacted state appropriated water right on pages 5C-9 and 7-48. [SKC]

R645-301-729: Cumulative Hydrologic Impact Assessment (CHIA)

- The Permittee needs to address the hydrologic deficiencies listed in this technical memo (Task ID#2526) before the Division can update the Gentry Mountain Cumulative Hydrologic Impact Area with information regarding the addition of the proposed lease expansion. [SKC]

Forest Service Comments
Bear Canyon Mine Permit Revision
August 25, 2006

1. Much of the plan has not been updated to cover the proposed longwall mining. The discussions of past room-and-pillar mining should remain, as that is how the area was mined in the past. This mine plan should cover the entire mine, so all mining is discussed.

2. Page 5-10, Section R645-301-523, Mining Method.

Only room-and-pillar mining is discussed. Describe the longwall mining that is proposed for this mine plan modification.

3. Page 5-19, Protection of Natural Surface Structures & Streams.

Use the angle-of-draw to determine the distance needed to protect streams and escarpments, not a fixed distance.

4. Page 5C-4.

The discussion is only for subsidence due to room-and-pillar mining. Add a discussion of the predicted subsidence due to longwall mining.

5. Page 5C-14, last paragraph.

Use the angle-of-draw to define the outcrop protection, not a fixed distance.

6. Section 5, Engineering, Pg. 5-18, 1st Paragraph.

The first sentence contradicts the next to last sentence in the paragraph. A minimum 200 foot protection zone barrier may not be adequate in all circumstances. Appendix 5-C, page 5C-16, 3rd paragraph uses an angle of draw of 22 ½ degrees to determine an adequate protection zone barrier; however, in the next paragraph protection zone barriers of 300 feet and 370 feet are given for the Tank and Blind Canyon Seams, respectively. Any references in the text to a static barrier limit (instead of using the angle of draw to determine it) should be removed. If a certain protection zone barrier is given for a particular location for a specific coal seam, then explain how that was determined by using depth and the angle of draw. The criteria to use are depth and angle of draw when determining an adequate protection zone barrier at each location.

7. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg 5C-3.

Attachments 2 and 3 are missing.

8. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg. 5C-4.

The paragraph infers that no subsidence will occur as a result of longwall mining. The paragraph should make it explicit that only room and pillar mining has been done up to now. The first sentence implies that the past experience with room and pillar mining can be extrapolated to the results anticipated with longwall mining. Discuss the effects anticipated with longwall mining. The paragraph also needs to point out that two seams overlap each other over a large area.

9. Subsidence Control and Monitoring Plan, Appendix 5-C.

Figure 5C-2 is missing.

10. Subsidence Control and Monitoring Plan, Appendix 5-C, Pg. 5C-14, last paragraph.

The paragraph should be rewritten to reflect that depth of overburden and an angle of draw will be used to determine the barrier protection zone at each location. The previous page, 5C-13, 3rd paragraph, discusses this. These inconsistencies should be corrected throughout the documents.

11. Hydrology, R645-301-728, Probable Hydrologic Consequences Determination, Pg. 7-44, 3rd paragraph, 4th sentence.

The sentence needs clarification.

- a. Which coal seam is being referred to?
- b. At some point the minimum overburden thickness(es) will be zero because the coal seam(s) outcrop along the creek.
- c. A comparison of Plates 5-1C, 6-2 and 7-4 indicates that the subsidence resulting from the present Tank Seam mine plan configuration will extend to an area under the Left Fork of Fish Creek drainage with little more than 400 feet of overburden.
- d. The "Area Of Concern To Be Monitored While Undermining" is in this area. Apparently, this "Area Of Concern" is the primary source of water contributing to the perennial section of the Left Fork of Fish Creek. This area will need to be analyzed more thoroughly before the present mine plan configuration can be approved.

12. Hydrology, R645-301-728, Probable Hydrologic Consequences Determination, Pg. 7-44, 3rd paragraph, 6th sentence.

A mitigation plan needs to be in place before an impact occurs.

13. Hydrology, R645-301-731.100, Hydrologic Balance Protection, Page 7-46, 2nd paragraph, last sentence.

Correct the sentence to reflect the most up-to-date subsidence predictions. Also discuss the use of depth and angle of draw to determine the limits of the protection

zone barriers.

14. Hydrology, R645-301-731.100, Hydrologic Balance Protection, Page 7-46, 3rd paragraph, last sentence.

Correct the paragraph to reflect what is currently being proposed, i.e., in U-024316 mining will take place in the Hiawatha Seam, not the Tank Seam and subsidence will be approximately 5 feet in that area. Update the discussion of the barrier protection zone for Bear Creek to reflect the use of depth and angle of draw in its boundary determination.

15. Hydrology, R645-301-731.100.210, Groundwater Monitoring Plan, Pg. 7-49, last paragraph, 2nd sentence.

If baseline data were collected for SBC-17, then so state.

16. Hydrology, R645-301-731.100.210, Groundwater Monitoring Plan, Pg. 7-49, last paragraph, last sentence.

Specify in what area sampling will begin 3 years prior to mining. List the locations and monitoring point designations where monitoring will occur.

17. Hydrology, Table 7-14, Water Monitoring Matrix, Pg. 7-53.

The table needs to be updated to reflect recent discussions and field trip findings regarding additional sampling locations:

- a) 2 additional surface water monitoring points in the McCadden Hollow drainage.
- b) 1 new spring or seep location to be determined in T.16 S., R.7 E., Section 10.
- c) 2 springs in T.16 S. R.8 E., Section 19 (SBC 16-A and SBC 16-B).
- d) The "Area Of Concern" in T.16 S. R.8 E., Section 19.

18. Hydrology, Section 731.220, Surface Water Monitoring, Pg. 7-57.

Update this section to reflect the current permit revision and all new monitoring points.

19. Subsidence Map, Plate 5-3A.

The Castlegate Sandstone needs to be mapped throughout the permit revision area.

20. Archaeology Map.

An archaeology map needs to be submitted for review as part of the permit revision package.

21. Geologic Map, Plate 6-1.

Use colored shading for the geologic formations.

22. Plate 7-4 and Plate 7-12.

Both of these plates are titled Water Monitoring and dated the same. Both are not needed. Put all correct information on one and delete the other. Update the plate to reflect the recently approved monitoring locations.

23 Plate 3-1.

This plate has symbols in the legend for riparian habitats, but none are shown on the map. Joe Helfrich said there would be additional field work done to delineate these habitats, and they would then be mapped. Add the new data to the map before the next review.

24. Page 3-23, 2nd paragraph.

This paragraph states that "Bear Creek and Fish Creek are low-quality aquatic environments of little value to the aquatic resources of the area".

Is this based on a systematic survey that rated the drainages as low, or is it just someone's opinion? Does Bear Creek have water quality issues? I would argue that Fish Creek is pretty important to the aquatic resources that use the area (insects, amphibians etc). On page 3-27 under the amphibian section it says that the area provides substantial value habitat for the three species that might be present. Present references and documentation that support the statement that "Bear Creek and Fish Creek are low quality aquatic environments of little importance...".

The paragraph goes on to say that a biological community mostly likely occurs on both creeks on an intermittent basis. I understand that we are treating these as perennial drainages (not intermittent) and this is stated in the first paragraph on this page. I would recommend dropping the 2nd paragraph or really cleaning it up.

25. Pg 3-25, Birds.

The comment was made last time that peregrine falcons were not a federally listed species anymore, and that they would be addressed as FS sensitive species. The references to them as endangered, were changed to sensitive, but the statements are not true now, as written. There is also a statement about impacts from a haul road and utility corridor. As far as I know, we are not looking at haul roads or utility corridors. Re-write this whole paragraph:

"There are no federally listed bird species potentially present in the project area. However, there are several Forest Service and Utah sensitive species that may be present: northern goshawk, flammulated owl, three-toed woodpecker and peregrine

falcon, as well as the golden eagle, which is a USFS Management Indicator Species. Bird species potentially affected include species nesting on the escarpment and species associated with riparian habitats or dependent of prey or forage associated with riparian habitats. Surveys for cliff nesting raptors were started in 1987 and were most recently conducted in 2006. Golden eagles, prairie falcons, red-tailed hawks, unidentified falcon species and ravens have been found nesting on cliffs in the area. Factors that favor the stability of the Castlegate escarpment are outlined in Maleki 2001, pg 13. Owl surveys were done in the springs of 2004. Surveys in 2004 found great horned owls in the Wild Horse Ridge area.”

26. Pg 3-27 Amphibians.

App. 3I says that it is probable that 6 species of amphibians inhabit the project area. App. I also says that only one species has been determined to be of high interest to the State of Utah (tiger salamander). Pg 3-27 amphibian section says that “the area provides substantial value habitat for the three species listed”. Describe the three species and their habitat.

27. Pg 3-28.

This page includes a new list of threatened and endangered species. Change the heading to Utah Sensitive Species. Add a sentence to the beginning “The Utah Sensitive Species list includes federally-listed threatened and endangered species, as well as species with existing conservation agreements, and species identified as species of concern. Add to the next sentence “The list of **federally listed** threatened and...”

The paragraph under the list, states that a map with blocks that lists threatened and endangered species was also downloaded. This is a little confusing, because if you actually look at the species status for some of the species listed in Figure 3-1, they are not federally-listed species. Call these species “Utah Sensitive Species”. Utah Sensitive Species include federally listed species, but also includes quite a few other species. So, in this paragraph replace threatened and endangered species, with Utah Sensitive Species.

The last 2 paragraphs on this page are confusing. It starts with a meeting in 2006. The first paragraph mentions Townsends big-eared bats and ends by saying that the flammulated owl may be added to the threatened and endangered list (replace with Utah sensitive species list). The next paragraph says that to address these concerns bat and owl surveys were done. It implies that surveys were done in 2006 to address concerns identified at a meeting with DWR in 2006. But, Appendix 3M discusses surveys done in 2004. If there were additional bat and owl surveys done in 2006, they need to be added to App 3M. I’m assuming that there were no additional surveys done in 2006, and that it’s just the wording of these 2 paragraphs that is confusing. Please clarify.

28 Page 3-29, Figure 3-1.

Change the heading to Utah Sensitive Species in Relation to the Permit Area.

29. Pg 3-30, 3rd paragraph.

Changing endangered to sensitive did not fix the problem. There are several species of raptors that might be found in the project area (see 3-25 above).

30. Old page 3-31, 2nd paragraph.

Add that "Canyon sweet-vetch was also noted in the Fish Creek drainage during field surveys in June 2006."

31. Pg 3-32.

Regarding the paragraph on Link Trail Columbine, add that this was found in Left Fork of Fish Creek during field surveys in June 2006.

32. Pg 3-32. Habitats and Areas of High Value.

It says that "Due to the depth of overburden no impact to these areas is expected" (referring to riparian areas). Cite references to support this statement for the new permit revision areas. Discuss the effects to Fish Creek.

33. Old page 3-39, 3rd paragraph.

This paragraph makes a reference to App 3-C and predicted effects from subsidence. However, I could find no discussion about effects from subsidence, it is merely a report on existing vegetation. Please clarify.

34. Pg 3-43, Birds.

Replace first sentence with "There are no federally listed bird species potentially present in the project area. However, there are several Forest Service and Utah sensitive species that may be present: northern goshawk, flammulated owl, three-toed woodpecker and peregrine falcon, as well as the golden eagle, which is a USFS Management Indicator Species."

Next two paragraphs - first says that "potential impact on bird species would be limited to the proposed new construction area". This is not applicable. Potential effects are from escarpment failure and loss of riparian habitats due to subsidence from mining.

Bottom of this page, aquatic wildlife, again talks about high quality streams, with no mention of Fish Creek.

35. Page 3-68.

At the end of the first paragraph, it says that raptor nests will be safeguarded from subsidence by maintaining a minimum of a 100 ft barrier to the outcrop. Page 5-17 says mining will be stopped within 200 ft of the outcrop. Page 5-18 says 200 ft, 5C-14 says 200 ft. These inconsistencies need to be corrected throughout the documents, wherever they occur. Use depth and angle of draw to determine an adequate protection zone barrier in each area.

36. Old page 3-69, monitoring, 1st paragraph.

This paragraph refers to water in Bear Creek, but there is no mention of Fish Creek or other water monitoring sites. Update this and reference Plate 7-4.

37. Appendix 3-I, Fish and Wildlife Resources Information.

The whole appendix needs to be updated to address the new permit revision areas and changes in listed species. Make sure it incorporates all comments made by Forest Service resource specialists on topics covered under other documents as part of this submittal.

38. There is no discussion regarding existing surface uses, specifically livestock grazing or recreation; however, natural resources (vegetation and wildlife) that affect these activities were discussed.

39. Mitigations of impacts to vegetation and water resources are presented in general terms but should be more specific as to how the company will replace or repair subsidence damage to roads, fences, trails, springs, water troughs and ponds.

40. No discussion was found regarding Forest Service sensitive plants. As a vegetation survey was completed, all species of concern should have been included. It is possible that canyon sweetvetch (*Hedysarum occidentale* var. *canone*) is in the lease area at lower elevations as it is found near the bottom of Trail Canyon.

Forest Service Review
Investigation of Groundwater and Surface-Water Systems and Probable Hydrologic
Consequences
Published: June 25, 2001
Reviewed Sept 7, 2006

Chapter 4 discusses springs throughout the area (including stratigraphic location, lithologic characteristics, flow rates, source areas and recharge paths), drill hole data from holes drilled in the Star Point sandstone (including lithology, flow rates, potentiometric surface) but Chapter 9 (PHC) does not analyze the effects to these resources as a result of mining in the new permit revision areas. As the first paragraph in Chapter 9 points out, the PHC only covers the Bear Canyon Mine permit area already in existence and the proposed Wild Horse Ridge permit area that was being addressed at that time.

Page 132, 1st paragraph, 2nd sentence.

This sentence discusses spring SBC-14 "near the location of the proposed portals for the Wild Horse Ridge expansion". SBC-14 is outside the forest boundary, in the right fork of Bear Canyon. In the next paragraph SBC-14 is described as being in the "permit expansion area". These two sentences indicate that the "permit expansion area" referred to is not the area under present consideration.

Page 133, 1st paragraph, 2nd sentence.

This sentence points out that the analysis does not include the new permit revision area; however, it does bring up an important point, i.e., the potentiometric surface in the Star Point sandstone relative to the coal seams.

Plate 7J-2 shows that the potentiometric surface of the Star Point sandstone is above the coal seams throughout much of the proposed permit revision area. This is an important issue that has not been addressed in the PHC. The volume of water intercepted while mining, how the loss of intercepted water will affect surface resources, how it will be disposed of, and how this will affect the hydrologic balance are concerns that must be addressed in the PHC.

Suggestion to aid the analysis: Construct a cross-section from MW-116 through MW-114 to SBC-3 showing stratigraphy (including coal seams) and the potentiometric surface of the Star Point sandstone.

Chapter 10.

It is evident from a quick look at Chapter 10 (Review of Proposed Monitoring Plan) that it was not prepared with the expectation that mining was being proposed in the project area under present consideration. In fact, when discussing McCadden Hollow and Fish Creek, monitoring is proposed for these drainages to gather baseline data outside of the (supposed) affected area, not for an environmental impact analysis related to proposed mining.