



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

Interoffice Memorandum

June 8, 2022

From: Leigh Simmons
To: Jared Ebert

**Subject: New Elk Mine (Permit No. C-1981-012)
PR-5**

As you requested, I reviewed the material submitted by New Elk Coal Company (NECC) in response to your adequacy letter of November 2, 2021. My review focused on compliance of the proposed plans with Rule 2.05.6(3), however other rules are referenced as necessary.

My original comments are shown in black, new comments are shown in [blue](#).

Rule 2.04.7 Hydrology description

1. Minimal revisions have been proposed to section 2.04.7 of the PAP, however a complete description of the hydrology in the area of the mine is necessary before the consequences of mining can be assessed. It is clear at a cursory review that parts of section 2.04.7 are out of date (for example, Table 10 presents a groundwater user inventory, but the Colorado Division of Water Resources database contains many records of wells that have presumably not been included in the inventory, as is shown in Figure 1).

Please review section 2.04.7 of the PAP and update it as necessary given the expansion to the permit area proposed with PR-5.

[With reference to Table 10:](#)

- a. [The table is formatted such that the header row has been cropped and the lower rows on each page are missing.](#)
[Please reformat the table so that it fits completely on the page](#)
- b. [The text preceding the table states: "A summary of developed groundwater sources for domestic use and irrigation is presented in Table 10", but many rows of CBM wells have been included.](#)
[Please remove CBM wells from Table 10](#)
- c. [A number of different location descriptions are used in Table 10, including PLSS.](#)



Please use a single method of location description, which allows for rapid plotting of location; Lat/Long coordinates would be ideal and are stored in the DWR records.

- d. A number of columns from the original table have been removed which provide information required by Rule 2.04.7(1)(b).
Please restore columns Use/Comments, Well Depth, Well Yield, Static Water Level, Screened Formation and Screened Interval Lithology to Table 10

With reference to the rest of section 2.04.7(1):

- e. No proposed edits have been made to the text or tables, besides a date change in the first paragraph following Table 10 from “December, 2010” to “December, 2021”. The intent of this section of the PAP is to thoroughly document the existing groundwater hydrology and groundwater uses of the site – given the scale of the expansion to the permit area and mine plan proposed with PR-5 it is not reasonable to assume that the previously approved text is sufficient.
Please review Table 11. Please review the factual statements in the text of section 2.04.7(1). Please update the 1984 survey of groundwater users to account for the proposed expansion to the permit area and the 38 years since the previous survey. If the contention is that certain groups of groundwater user can be discounted from the survey that should be stated explicitly with reasoning to support the statement.
2. Section 2.04.7 refers to Map 8, Regional Hydrology. The proposed revision to Map 8 is a scanned image of the currently approved Map 8, dated May 10, 2012, with the proposed permit boundary overlaid on it. The data on the map has not been updated.

Please revise Map 8. Please update all data layers and all metadata on the map, in accordance with the requirements of Rule 2.10.

A revised version of Map 8 has been submitted, together with a tiled version of the same map (Maps 8a-d) at a larger scale, which greatly improves its legibility. The revised series of maps shows the proposed permit boundary and has an updated layer of wells.

Please have all maps certified by a professional engineer or professional geologist, as is required by Rule 2.10.3(2).

Rule 2.05.6(3) Protection of hydrological balance

3. It is acknowledged in the introduction to the Probable Hydrologic Consequences (PHC) section of the currently approved PAP text that one of the factors that could impact the hydrologic balance of the area is subsidence. On page 2.05-71 the following text has been proposed to be added:

The mining method and extraction of coal will use room and pillar mining. For the Blue Seam no secondary or retreat mining is planned, and subsidence will not occur, thus, no impacts to surface water resources or groundwater wells in the area of mining is anticipated.

The assertion that the proposed Blue Seam mining will not cause subsidence has not been supported. Although it is accepted that the subsidence impacts of room and pillar mining without retreat mining will be less than with retreat mining, it cannot be true that there is no potential for subsidence under any circumstance.

The currently approved text mentions a minimum depth of cover of 450 feet over the Apache Seam, but does not discuss the depth of cover over the Blue Seam. Based on a review of the revised maps (Map 3 Blue Mine Plan, Map 6A Sheet 5 Blue Seam Depth of Cover, and Map 7 Coal Seam Cross Sections), it appears that the depth of cover above the Blue Seam could be quite shallow, particularly at the point where the proposed workings cross beneath the Purgatoire River. For example, Map 7 shows a depth of cover of 91 feet at A-19, and 82 feet at NE-01-10.

The potential for subsidence associated with the updated mine plan should be thoroughly evaluated, as is required by Rule 2.05.6(6). It is likely that this will involve an engineering study similar to the 2011 Agapito study found in Exhibit 24. The results of this study should be referenced when evaluating the PHC.

This issue has not been addressed.

4. Also on page 2.05-71, the currently approved PAP text contains a paragraph beginning:

Well records from CDWR indicate that there are 19 permitted wells in the Raton Formation within a one mile radius of the permit boundary...

The text goes on to refer to Exhibit 8(4), which contains a 2011 report produced by Whetstone Associates. No revisions to the currently approved text or to Exhibit 8(4) have been proposed.

The Whetstone report was produced to examine the probable hydrologic impacts of an earlier revision to the mine plan (room and pillar mining in the Allen and Apache seams to the south and east of the previously approved mine plan), and forms the basis of the currently approved analysis of the probable hydrologic consequences of mining.

It is not reasonable to suppose that such a significant change to the mine plan as is proposed with PR-5 could be approved without a similarly detailed analysis

A thorough analysis should be made of the Probable Hydrologic Consequences of the mine plan proposed with PR-5, as is required by Rule 2.05.6(3). It is likely that this will involve a study similar to the 2011 Whetstone study found in Exhibit 8(4). The PAP text should be updated with reference to the study.

This issue has not been addressed.

5. The hydrologic monitoring plan is presented on pages 2.05-104 through -110 of the PAP. The currently approved plan was appropriate for the New Elk mine prior to PR-5, while it was inactive; it is not appropriate for an active mine, or for the mine plan proposed with PR-5.

Please review and update the hydrologic monitoring plan, in accordance with the performance standards given in Rule 4.05.13. Please also propose locations for Groundwater Points of Compliance as appropriate. It may be helpful to refer to the Division's Groundwater Monitoring and Protection Technical Bulletin for guidance; the technical bulletin is available from the DRMS website: <https://drms.colorado.gov/programs/coal-regulatory-program/coal-program-guidelines-and-technical-documents/technical>

This issue has not been addressed.