



## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

### Interoffice Memorandum

Date: January 27, 2021  
From: Rob Zuber **RDZ**  
To: Zach Trujillo

Subject: **Colowyo Coal Mine (Permit No. C-1981-019)**  
**Second adequacy review of TR-145, addressing Tri-State's response to our PAR**

Hello, Zach

I reviewed the submittal from Tri-State for TR-145, dated January 20, 2021. My comments follow the numbering in your preliminary adequacy letter of December 31, 2020 (volume numbers are no longer needed, in my opinion). For items where additional response is needed by Tri-State, I included the original PAR comment and *their response in italics*. I then added **my new comment in bold text**.

Please do not hesitate to ask me for clarification on any of these items.

1. **This is your comment, Zach.**
2. No additional response required.
3. When reviewing the Streeter Pond figures:
  - a. Comparing the proposed Streeter Pond As-Built drawing (Figure Exh. 7-14SP-1) to the currently approved drawing (Exhibit 7-SP, Attachment 4), the stage/storage curve is the same but the table with Storage Volume Computations has changed significantly. Please explain this apparent discrepancy (the Division acknowledges that the graph and table match in the proposed drawing).

*The currently approved version of the Streeter Pond As-built does not contain a storage volume computation table, so it is unclear on what the Division is reviewing. As stated by the Division, Figure Exh. 7-14SP-1 as submitted under TR-145, the stage storage curve and storage volume computations table do match; therefore, no explanation is necessary. Further, please see response to comment 4.e. below.*

**The Division is referring to page 8 in the file in Laserfiche that is dated 9/9/2015, has the Doc Name "Attachment 1 to Attachment 12," and the Section Exhibit Name "Exhibit 07 Streeter Pond 001A." This As-Built drawing has Storage Volume Calculations. Please indicate if this file or this page should be removed from the PAP (or if it should have been removed from Laserfiche in past).**



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- b. The as-built drawing (Figure Exh. 7-14SP-1) does not have a scale that functions with electronic copies (it only works for hard copies at proper scale). Please add a scale such as the one on Figure Exh. 7-14SP-2.

*Tri-State has never scaled a drawing specifically for electronic copies, nor does it understand what that means. All maps, as-builts, etc., are scaled accordingly and submitted, and this has been occurring since the Division started the ePermitting process without any issues. No changes are being made to Figure Exh. 7-14SP-2 as it is scaled correctly.*

**What the Division meant is that the drawing needs a scale bar. Please add this feature to the drawing.**

4. When reviewing the Streeter Pond SEDCAD:

- a. NA
- b. NA
- c. Please provide an explanation to why the stock ponds in the proposed SEDCAD model are modeled as empty prior to storm runoff. In the currently approved SEDCAD model for the Streeter Pond, the stock ponds are full of water before the runoff begins. Full stock ponds are consistent with the term “worst- case hydrologic conditions,” which is used in the introductory text (page Exh. 7-14SP-1). This change potentially has significant consequences; for example, the 10-year flow into Streeter Pond decreases from 78 cfs (currently approved model) to 3 cfs (proposed model) in the respective SEDCAD pages.

*The term “full stock ponds” is never cited as a “worst case scenario” in Appendix Exh. 7-14SP, Page Exh. 7-14SP-1, as the Division cites. It should be noted this is a statement made by the Division, and is not language proposed on page Exh. 7-14SP-1 by Tri-State.*

*As for the stock ponds, given the experience gained from constructing and managing many post mine stock ponds at Colowyo to date, unless there is a constant flow to a stock pond they tend to dry out through evaporation and infiltration after spring runoff is complete. Tri-State believes the stock ponds in the Streeter Pond watershed will be dry or close to dry the majority of the time. However, since the Division seems to have an issue with the ponds being modeled as dry, all three stock ponds have been remodeled with a permanent pool elevation.*

**While checking the initial pool for the SD-1 Stockpond, the Division noticed that some details for this structure in the SEDCAD results pages changed significantly between the November submittal for TR-145 and the January submittal. In particular, the Elevation-Capacity-Discharge Table is quite different. Please explain this change for the SD-1 Stockpond.**

- d. No additional response required.
- e. No additional response required.

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5. Please explain how the CN values were chosen for the post-mining conditions to model in SEDCAD. In Figure Exh. 7-14ET-2 the large majority of the drainage area has a CN of 62 (925 acres out of 1049 acres). Please explain why that is the worst-case hydrologic condition.

*Curve numbers are selected in accordance with Table 1 in Exhibit 7 in Volume 2D in the approved permit as required, and the model methodology is further described in Volume 2D, Exhibit 7 Methodologies and Assumptions for Sedimentation Pond Evaluations, Section 1.5.*

*The East Taylor Pond watershed in its current condition, a large portion of which the southern portion of the watershed is not reporting to the pond due mostly to the existence of the final cut of the West Pit, and other areas that have not been backfilled and graded to date. Therefore, a large volume of surface water flows are being contained within the final cut of the West Pit and other mining related disturbances in the southern portion of the watershed, and are not reporting to the East Taylor Pond. West Pit reclamation areas currently reporting to the East Taylor Pond are well established and the majority are Phase II released further indicating surface water flows from these reclamation parcels in the West Pit reclamation are being reduced by successful revegetation. Once the southern portion of the East Taylor watershed is reclaimed, the post mine condition, a much larger area that was not previously reporting to the pond will be contributing within the watershed to the East Taylor Pond that at this time is not due to the West Pit and other disturbed areas limiting flows.*

**The Tri-State response does not completely address the Division's comment. Please explain why the worst-case condition, soon after the West Pit has been entirely reclaimed and a large part of the watershed is bare soil, is not modeled for the East Taylor Pond analysis. The Division refers Tri-State to the following language on page Exh. 7-ET-2: "The following pages present the results of the SEDCAD™ models for the worst-case hydrologic conditions under the post mining condition. At this stage the oldest reclamation is on the northern extent of the reclaimed West Pit, and the younger (topsoil and seeded) reclamation is the southern reaches of the East Taylor Pond watershed." It is our opinion that this language suggests that the southern parcels of the watershed should be modeled with a curve number higher than 62.**

6. No additional response required.
7. No additional response required.
8. When reviewing the Section 16 Pond text (Appendix Exh. 7-14S):
  - a. No additional response required.
  - b. No additional response required.
9. No additional response required.
10. The scale on Figure Exh. 7-14S-2 is incorrect. Please edit this error.

*This very minor scale issue has been corrected as noted.*

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**The scale on Figure Exh. 7-14S-2 still appears to be incorrect. Please compare the scale bar to the stations for the ditches. For example, if the scale bar is used, the distance along the East Section 16 Ditch from 10+00 to 23+15 is over 2,000 feet. That is not correct.**

11. Please explain an apparent discrepancy between the Section 16 Pond As-Built (Figure Exh. 7-14S-1) and the associated SEDCAD model. The spillway perforations are at an elevation of 7746 on the Stage Storage Curve of the drawing, but there is no discharge in the Detailed Discharge Table in the model until the water reaches 7753.

*Tri-State found an error in the SEDCAD<sup>TM</sup> model for the perforation elevations, which has been corrected. All the models for the Section 16 Pond have been corrected and resubmitted accordingly.*

**It appears that the pages for the SEDCAD model for the Section 16 Pond were not submitted with the January 20, 2021 package. Please submit these.**

12. No additional response required.

13. No additional response required.

14. No additional response required.

15. The curve number for the “purple” areas on Figure Exh. 7-20A-2 is shown as 57 in the legend of the figure, but this should be changed to 47 per the SEDCAD pages. Please make this change to the figure (or update SEDCAD if appropriate).

*The typographical error on Figure Exh. 7-20A-2 has been corrected.*

**It appears that Figure Exh. 7-20A-2 was not submitted with the January 20, 2021 package. Please submit this.**

16. When reviewing the West Taylor Pond text:

- a. No additional response required.
- b. There appear to be errors in the text on page Exh. 7-20B-1. The references to figures in the first paragraph should likely say “7-20B” rather than “7-20C.”

*Typographical error has been corrected.*

**The Division disagrees. It appears that references to figures in the text continue to say “7-20C” rather than “7-20B.”**

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- c. No additional response required.
- d. No additional response required.
- e. No additional response required.

17. When reviewing the West Taylor Pond figures:

- a. The watershed boundaries map (Figure Exh. 7-20B-2) contains three shades of green indicating different CN values, but the map legend only shows two shades of green. Please revise the map or explain this apparent discrepancy.

*The legend on Figure Exh. 7-2B-2 has three shades of green as is shown on the map. There is not any apparent discrepancy as the Division indicates. No changes have been made, as the map legend as submitted is correct.*

**The Division disagrees. We only see two shades of green for the polygons in the legend. Please check this again. Perhaps an older version of this map was submitted with January 20, 2021 package.**

18. **This is your comment, Zach.**