



June 15, 2021

Mr. Zach Trujillo
Environmental Protection Specialist
Colorado Division of Reclamation, Mining & Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

RE: Colowyo Coal Company L.P.
Permit No. C-1981-019
Technical Revision No. 148 (TR-148)
Adequacy Response

Dear Mr. Trujillo,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Axial Basin Coal Company, which is the general partner to Colowyo Coal Company L.P. (Colowyo). Therefore, Tri-State on behalf of Colowyo is submitting this adequacy response for technical revision 148 (TR-148) to Permit No. C-1981-019.

Tri-State received the Division's letter on June 14, 2021, and is providing the following responses to the Division's concerns:

1. *Please submit a copy of the historical monitoring data used to derive the UTLs for Manganese, Sulfate and Total Dissolved Solids that are proposed as estimates of existing ambient quality to be used as alternatives to the Reg. 41 table values. Please include a description of any other assumptions that were made during their analysis. This data should be included as an appendix to Exhibit 7, Item 19.*

Response: The data used to derive the UTL's can be found in the 1984 through 2017 annual hydrology reports submitted to the Division in accordance with Rule 4.05.13(4)(c). Tri-State will not duplicate data to be included in the permit when it has been already provided to the Division. Further, the methodology used to calculate the UTL's is already described in Exhibit 7 Item 19, Section 3.

2. *Please propose revised text,*
 - a. *making explicit that the applicable standard at the POCs is the Interim Narrative Standard;*
 - b. *describing how the standard has been interpreted;*
 - c. *stating what the agreed parameter values are (This could be by reference to the Exhibit).*

Response: Text has been added in Volume 15, Section 4.05.13 stating the applicable standard, a reference has been added to how the standard has been interpreted, and another reference to the appropriate table (Table 16) in Exhibit 7, Item 19 has been added for the compliance standards.



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Included in this adequacy response is a change of index sheet to ease incorporation of the revised TR-148 materials into the permit document. If you should have any additional questions or concerns, please feel free to contact Tony Tennyson at (970) 326-3560 at your convenience.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

cc: Tony Tennyson (via email)
Angela Aalbers (via email)
File: C. F. 1.1.1.207 - G471-11.3(21)d

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

Mine Company Name: Colowyo Coal Company L.P.

Date: **June 2, 2021**

Permit Number: **C-1981-019**

Revision Description: **TR-148 Alluvial Points of Compliance**

Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
1			No Change
2A			No Change
2B			No Change
2C			No Change
2D			No Change
2E			No Change
3			No Change
4			No Change
5A			No Change
5B			No Change
6			No Change
7			No Change
8			No Change
9			No Change
10			No Change
12			No Change
13			No Change
14			No Change
15	Collom Rule 4 Page 11 through Rule 4 Page 13 (3 pages)	Collom Rule 4 Page 11 through Rule 4 Page 13 (3 pages)	Section 4.05.13 has been updated.
16			No Change
17			No Change
18A			No Change
18B			No Change
18C			No Change

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Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
18D			No Change
19			No Change
20			No Change
21			No Change
22			No Change

RULE 4 PERFORMANCE STANDARDS

5. MJ-95-03 - Located in the Jubb Creek valley fill just downstream of the confluence of the West and East Forks of Jubb Creek, this site represents the condition of the valley-fill aquifer downgradient of the Collom Pit.
6. Gossard Well – Located within valley fill beneath the rail loop, this site represents the condition of the valley fill aquifer in the vicinity of the Gossard Coal Loadout Facility.
7. A-6 Well – Located in the Good Spring Creek valley fill, this site represents the condition up-gradient of and current mining activities.
8. North Good Spring Well – Located in the Good Spring Creek valley fill, this site represents the down-dip condition below existing and mining activities.
9. MT-95-02 – Located in the Taylor Creek valley fill, this site represents the down-dip condition below current and mining activities.
10. A-7 – Located in the West Fork of Good Spring Creek valley fill, this site represents a potential down-dip condition below South Taylor mining activities.
11. A-8 - Located in the West Fork of Good Spring Creek valley fill, this site represents the condition up-gradient of South Taylor mining activities.
12. Trout Creek Well – Located on the northeastern edge of the Collom Pit, this site represents the regional aquifer condition of the Trout Creek Sandstone.
13. LGSW-1 – Located along Good Spring Creek, this site represents the down gradient condition below mining activities, and is designated as a “Point of Compliance” well for the alluvial aquifer on Good Spring Creek. The applicable standards are the Department of Public Health and Environment Water Quality Control Commission Regulation 41 - The Basic Standards for Ground Water, Interim Narrative Standard. How the Interim Narrative Standard will be implemented is described in Volume 2C, Exhibit 7, Item 19, Section 4 and the applicable standards are found in Volume 2C, Exhibit 7, Item 19, Table 16.
14. LWCW-1 – Located below the confluence of Wilson and Taylor Creeks, this site represents the down gradient condition below mining activities and is designated as a “Point of Compliance” well for the alluvial aquifer on Wilson and Taylor Creeks. The applicable standards are the Department of Public Health and Environment Water Quality Control Commission Regulation 41 - The Basic Standards for Ground Water Interim Narrative Standard. How the Interim Narrative Standards will be implemented is described in Volume 2C, Exhibit 7, Item 19, Section 4 and the applicable standards are found in Volume 2C, Exhibit 7, Item 19, Table 16.

Groundwater Laboratory Parameters

pH	Conductivity at 25°C	Total Dissolved Solids	Bicarbonate (HCO_3^-) ^D	Calcium (Ca^{+2}) ^D
Magnesium (Mg^{+2}) ^D	Ammonia (NH_3) ^D	Nitrate ^D	Phosphate (PO_4^{-3} as P) ^D	Sodium (Na^+) ^D
Sulfate (SO_4^{-2}) ^D	Arsenic (As) ^D	Iron (Fe) ^D	Lead (Pb) ^D	Manganese (Mn) ^D
Mercury (Hg) ^D	Selenium (Se) ^D	Zinc (Zn) ^D		
D = Dissolved				

Prior to mining at Lower Wilson, the following three valley fill groundwater monitoring sites will be added:

1. MW-95-01 – Located in the Wilson Creek valley fill, this site represents the upstream, undisturbed background conditions of the valley fill aquifer.
2. MW-05-03 – Located in the Wilson Creek and unnamed drainage valley fill, this site represents valley fill groundwater quality immediately downgradient from Lower Wilson.
3. MW-95-02 – Located in the Wilson Creek valley fill, this site represents the downgradient conditions below Lower Wilson and the haul road.

It is reasonable to expect potential future monitoring activities for the Lower Wilson locations to mirror those for the existing operation as it pertains to frequency and specific parameters.

RULE 4 PERFORMANCE STANDARDS

Groundwater Fill Piezometers - Monitoring of the West Pit fill piezometer and Section 16 Fill piezometer have been discontinued. The West Pit Fill and West Taylor Fill piezometers will be monitored quarterly for water levels. One additional piezometers will be installed into the toe of East Taylor Fill, once constructed, as described in Exhibit 21 Item 1.

A future spoil water monitoring well will be drilled (and water quality monitored) as identified on Map 41B in the reclaimed Collom Pit area to monitor and measure the potential development of a spoil aquifer. This location represents the lowest point in the Collom Pit.

4.05.14 Transfer of Wells

Please see Section 4.05.14 in Volume 1.

4.05.15 Water Rights and Replacment

Please see Section 4.05.14 in Volume 1 and Section 2.04.7(2) in Volume 15.

4.05.16 Dischrage of Water into an Underground Mine

This section is not applicable to the Collom Mine.

4.05.17 Postmining and Rehabilitation of Sediment Pond, Diversions, Impoundments, and Treatment Facilities

Please see Section 4.05.17 in Volume 1.

4.05.18 Stream Buffer Zones

Lands within 100 feet, or greater distance if required, of a perennial, an intermittent, or an ephemeral stream with a drainage area larger than one square mile are required to be protected under Rule 4.05.18, unless the Division specifically authorizes surface operations within the stream buffer zone. Stream buffer zones have been identified along Wilson Creek and Jubb Creek, as the drainage area reporting to these streams is larger than one square mile. Colowyo will be developing the Collom Haul Road which will be inside the stream buffer zone on both Wilson Creek and Jubb Creek.

The Collom Haul Road will cross Wilson Creek as shown on Map 25E Sheet 1. During construction Colowyo will install a round culvert, and will employ proper best management practices (BMPs) during the construction phase in accordance with Colowyo's approved stormwater management plan, Section 401 certification, and US Army Corps 404 permit..

The Collom Haul Road will also cross Jubb Creek as shown on Map 25E Sheet 1. The construction of the crossing will be similar to the Wilson Creek crossing and will utilize the same BMPs as will be installed at the Wilson Creek crossing.

As shown on Map 25E Sheet 1, the Collom Haul Road will parallel Jubb Creek. There will be one section of the haul road that will be slightly within 100 feet of the stream. As shown on Map 25E Sheet 1, at approximately Station 230+00 to 250+00 there will a slight amount of disturbance within the stream buffer zone on Jubb Creek. Proper BMPs will be employed prior to any disturbance occurring within this area and once the road construction is complete any areas that can be reclaimed will be completed as soon as possible.

RULE 4 PERFORMANCE STANDARDS

Much of Little Collom Gulch will be directly impacted by the Collom Pit, the temporary spoil pile, and the Section 25 Pond (see Map 23C). The Section 25 Pond will protect the lower reaches of Little Collom Gulch that will not be disturbed during mining and reclamation. It is expected that during mining the Collom Pit will intercept and hold surface water runoff thus providing less discharge through the Section 25 Pond. Clean water diversions will be constructed above the active operations (also potentially within Little Collom Gulch) to direct surface water runoff around the disturbed areas. Once mining is complete the entire Collom Pit will be backfilled with the material stored in the temporary spoil pile and the pre-mine profile and function of Little Collom Gulch will be restored.

It is not anticipated that any of the areas that are to be disturbed within the stream buffer zones will have any long term impacts to Wilson Creek, Jubb Creek, or Little Collom Gulch due to proper use of BMPs, sediment control structures, clean water diversions, and due the fact the disturbance will be offset by reclamation. The two road crossing will be stabilized immediately following construction, and Little Collom Gulch will be restored to the premine condition when mining and reclamation activities are complete.

No other areas within the Collom disturbance footprint will impact any stream buffer zones.

4.06 TOPSOIL

The topsoil removal, storage, and redistribution plan for the disturbed area associated with the Collom Pit mining areas will follow the procedures described Section 2.05.3 (5) and 2.05.4 (2) (d) in this volume. Additional information regarding the topsoil resource may be found in the Collom Soils baseline survey located in Exhibit 9, Volume 13. Before the disturbance of any area, topsoil is removed and segregated from other material. Upon removal, this material is either immediately redistributed on regraded areas or stockpiled in locations shown on the Topsoil Handling Map 28C

All topsoil, as classified in section 2.04.9, is removed from areas to be affected by the surface coal mining operations. The graphical representation of the topsoil removal is shown on the Topsoil Handling Map 28C. The average thicknesses for each soils series to be removed can be found on Table 2.04.9-16 as defined in Table 2.04.9-19. Removal techniques for topsoil are described in Section 2.05.3. Furthermore, please see Section 4.06 in Volume 1 for additional information regarding topsoil.

4.07 SEALING OF DRILLED HOLES AND UNDERGROUND OPENINGS

Drill holes and underground openings will be sealed in accordance with the procedures outlined in the Section 4.07 in Volume 1.