

STATE OF
COLORADO

Zuber - DNR, Rob <rob.zuber@state.co.us>

AHR review for Bowie #1

1 message

Zuber - DNR, Rob <rob.zuber@state.co.us>

Thu, Oct 10, 2024 at 4:08 PM

To: Ryan Wilson <RWilson@wolverinefuels.com>, Basil Bear <basilbear@wolverinefuels.com>, Tamme Bishop <tammekb@gmail.com>

Hello -

Please see the review letter for the 2023 AHR for the Bowie No. 1 Mine.

Rob

Rob Zuber, P.E.
Environmental Protection Specialist
Active Mines Regulatory Program



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

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**C1981038_2023_AHR_DRMS Review.pdf**

309K



October 10, 2024

Basil Bear
Bowie Resources, LLC
P.O. Box 1488
Paonia, CO 81428

**Re: Bowie No. 1 Mine, Permit C-1981-038,
Review of 2023 Annual Hydrology Report**

Dear Mr. Bear:

The Division received the 2023 AHR for the Bowie No. 1 Mine on June 21, 2024. The Division reviewed this AHR in the context of Rules 4.05.1, 4.05.6, 4.05.11, and 4.05.13 (Regulations of the Colorado Mined Land Reclamation Board for Coal Mining).

Table 1 lists important logistical requirements of the Bowie No. 1 Mine water monitoring plan and indicates if the requirement was met with the 2023 AHR.

Table 1 Requirements of the Bowie No. 1 Mine Water Monitoring Plan

Requirement	Source of Requirement (Rule or Page in PAP)	Requirement met for 2023?
Filing frequency of AHR - annually	Rule 4.05.13(4)(c)	Yes
Timely filing of hydrology report – submitted by April 30th each year	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 120	No ¹
Sites sampled and sampling frequency at <u>surface</u> water monitoring sites	Volume 4 of PAP, Tables 1 and 2	No
Parameters sampled at <u>surface</u> water monitoring sites	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 119	No
Sites sampled and sampling frequency at <u>groundwater</u> monitoring sites	Vol. 4 of PAP, Tables 3 and 4; Vol. 7, page 2.05-41 (loadout)	No
Parameters sampled at <u>groundwater</u> monitoring sites	Section 2.05.6 of the Bowie No. 1 Mine PAP, page 122	Yes

1. The submittal was late, but this had been agreed upon with the Division.

There is no lab data for the monitoring points in streams (SW-05 and SW-06, Figures 16 and 18). Please consider obtaining this data in May of 2025 if it is likely for the streams to be dry in summer and fall months.



It is unclear why values for some parameters are missing from the data for springs. For example, please explain why data is missing for calcium and magnesium for Spring 14-4. Please provide this explanation by November 15, 2024.

It is unclear why lab data for MW-1 and MW-3 were not collected quarterly, as this frequency is stated in Table 1. This should be clearly explained in the response letter. In future AHRs, the reasons for missing a sampling event (such as access issues) should be described in the report text and on applicable data tables.

Table 1 in the AHR, “Summary of Hydrology Monitoring Stations,” is missing some of the monitoring stations, including the surface water stations for Stevens Gulch (SW-05) and East Roatcap Creek (SW-06). This should be included in future AHRs.

Data is missing for Spring and Pond 13-5 (SP1305) and Spring and Pond 13-6 (SP1306). Although the text of the AHR states that these locations were dry in 2023, the data sheets should be included in future AHRs, even if they are dry.

Analysis of Surface Water Data

Key receiving waters at the Bowie No. 1 Mine are Stevens Gulch and East Roatcap Creek. Analyses of data for the downstream sampling locations for these receiving waters are generally a primary focus of Division AHR reviews. However, in the 2023 AHR there is no laboratory data for these sites.

Field parameters (including flow, temperature, conductivity, and pH) in Stevens Gulch (SW-05) and East Roatcap Creek (SW-06) were in line with historical values and are not problematic in comparison to CDPHE standards for temperature and pH.

Analysis of Springs Data

Table 2 lists data for two springs for key parameters as well as the CDPHE standard for surface water. Other springs were reported as dry during the sampling events of 2023.

Table 2. 2023 AHR Data for Springs

Parameter	Units	Maximum Concentration Spring 14-4	Maximum Concentration Spring 30	CDPHE Standard for Surface Water	Comments
pH	su	8.06	7.77	6.5 – 9.0	No reported values below the low limit.
Chloride	mg/L	9.39	7.87	250	
Sulfate	mg/L	32.1	54	250	
Iron, dissolved	mg/L	<DL	<DL	0.3	

No problems were identified in the data for the two springs.

Analysis of Groundwater Data

The 2023 AHR includes groundwater data for three wells (all alluvial): MW01, MW02, and MW03. MW03 is down-gradient of the Coal Storage and Loadout areas, and the Division’s review of the 2023 AHR focused on the data for that well. A comparison to Regulation No. 41 of the CDPHE Basic Standards for Groundwater is presented in Table 3 for three key parameters for the data collected in June 2023. The data for other months in 2023 does not include laboratory data.

Table 3. 2023 AHR Data from MW03 (June 2023)

Parameter	Units	Maximum Concentration from 2023	CDPHE Standard	Comments
Chloride	mg/L	3.42	250	
Sulfate	mg/L	44.3	250	
Iron, dissolved	mg/L	0.117	0.3	

The pH values in the data are all within the acceptable range of 6.5 – 8.5.

The TDS value recorded for June 2023 is 612 mg/L, which is below the guideline of 750 mg/L and typical for this well.

No water quality issues are identified in the data for MW03.

Regarding water levels in MW03, the data indicate essentially no variation from the operational norm. The operational average for this well is 5704, and the levels measured in 2023 vary from 5694 to 5710.

Thank you,

A handwritten signature in blue ink, appearing to read "Robert D. Zuber".

Robert D. Zuber, P.E.
Environmental Protection Specialist

Copy via email: Ryan Wilson, Wolverine Fuels; Tamme Bishop, J.E. Stover & Associates, Inc.