J. E. STOVER & ASSOCIATES, INC.

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MINE ENGINEERING
MINE RECLAMATION

CIVIL ENGINEERING
CONST. MANAGEMENT

August 21, 2024

Rob Zuber
Division of Reclamation, Mining & Safety
1313 Sherman St., Room 215
Denver, CO 80203

Re: Bowie Resources, LLC, Bowie No. 1 Mine
TR-66, Interim Farmers Ditch & Sediment Pond reclamation
Permit C-1981-038

Dear Mr. Zuber:

On behalf of Bowie Resources, LLC, (BRL), enclosed is an application for a technical revision to remove the first three hundred feet of the farmers ditch culvert, restore the ditch in that segment, and reclaim the sediment pond, at the Bowie No. 1 Mine.

BRL proposes to begin the work after the irrigation season has ended. A new SAE will be created to treat the flow that would have gone into the sediment pond. Since this revision is reclamation, there in not and increase in the reclamation.

Attachments for this revision include:

- Page 2.05-14, 25, 40
- Map-07
- Map 08B (new map)
- Table of Contents
- Tab 8 – SAE design, pages SAE-1 through SAE-9

Please let me know if you have any questions.

Sincerely,

Tamme Bishop

Tamme Bishop, P.E.
Consulting Engineer

Cc: Basil Bear

COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567

APPLICATION FORM FOR A REVISION TO A COAL MINING AND RECLAMATION PERMIT

This form must be completed and submitted with all requests for minor revisions, as defined in Rule 1.04(73), technical revisions, as defined in Rule 1.04(136), and permit revisions, as defined in Rule 1.04(90). All revisions are to address the requirements of Rule 2.08.4. Three (3) copies of the revision, including maps, must be submitted in order for it to be complete.

All revisions are to be formatted so they can be inserted into the permit to replace the revised sections, maps, tables and/or figures, with a revised table of contents, if necessary. The revision submittal date should be printed in the lower right corner of each revision page. A cover letter to the revision should explain the nature of the revision and reference the specific permit sections being revised.

For federal mines, a copy of the revision application must be submitted to all agencies on the federal mailing list (except OSM) at the same time the application is submitted to the Division, and proof of distribution must be submitted to the Division along with the application. Copies of revision pages modified during the review process must be distributed in the same manner, along with proof of distribution. Proof of distribution must be submitted prior to implementation of the revision.

Permit No.: C - 1981 - 038 Date: 08 / 21 / 2024

Permittee: Bowie Resources, LLC

Bowie No. 1 Mine

Street: P.O. Box 1488

City: Paonia

State: CO Zip Code: 81428 -

Brief Description of Revision: Remove 300 feet of farmers ditch culvert, reconstruct channel in that section, and reclaim the sediment pond on the east end of the property.

Public Notice Attached: Yes ✔ No __ *(Required for PRs and TRs)*

Bond Increase: Yes __ No ✔ **Federal** ✔ **Non-Federal** __ **Mine**

Proposed Change in:

Permit Area -

Disturbed	(+/-) __ __ 0 . 0	Acres
Permit	(+/-) - __ 0 . 0	Acres
Affected	(+/-) - __ 0 . 0	Acres

Surface Ownership -

Private Land	(+/-) - __ 0 . 0	Acres
Federal Land	(+/-) - __ 0 . 0	Acres
State Land	(+/-) __ __ 0 . 0	Acres

Mineral Ownership -

Mineral Private	(+/-) __ __ 0 . 0	Acres
Mineral Federal	(+/-) - __ 0 . 0	Acres
Mineral State	(+/-) __ __ 0 . 0	Acres

PUBLIC NOTICE

Bowie Resources, LLC, P.O. Box 483, Paonia, CO, 81428, has submitted a complete application for a technical revision to the Division of Reclamation, Mining & Safety for its approved Bowie No. 1 Mine, mining permit no. C-1981-038. Proposed technical revision no. 66 will remove the first three hundred feet of the farmers ditch culvert, reconstruct the channel in that segment and reclaim the sediment pond on the east side of the Loadout property.

The Bowie No. 1 Mine is located in Delta County, approximately four (4) miles north of Paonia, CO. The Bowie No. 1 Mine loadout is located in Delta County approximately one mile east of Paonia, CO south of State Highway 133. The surface facilities, located north of the North Fork of the Gunnison River, are located in portions of Sections 23 and 24, Township 13 South Range 92 West; and Section 29, Township 13 South, Range 91 West of the 6th P.M. The mine permit area is located on the U.S. Geological Survey 7.5 minute Bowie and Gray Reservoir, Colorado Quadrangle maps within the following sections.

Township 13 South, Range 92 West, 6th P.M.

Sec. 2: SE¼
Sec. 10: Lots 1-3, 6-11, 14-16
Sec. 11: All
Sec. 12: Lots 13-15, SW¼SW¼
Sec. 13: All
Sec. 14: All
Sec. 15: Lots 1-3, 6-11,14-16 and E½ of Lot 5, SE¼ Lot 4,NE¼ Lot 12
Sec. 22: Lots 1-3, 6-8
Sec. 23: Lots 1-9, eastern portion of Lot 10
Sec. 24: Lots 1-6, 8, 9, 11, 12, eastern portion of Lot 10, western portion of Lots 7 & 13, S½NE¼ , NW¼SE¼
Sec. 25: Portion of N ½

Township 13 South, Range 91 West, 6th P.M.

Sec. 17: SW¼
Sec. 18: Lots 3-4, E½SW¼, W½SE¼, NE¼SE¼, NW¼SE¼SE¼
Sec. 19: NE¼NW¼, N½NW¼NE¼
Portions of Sections 29, 30, 31, 32

Containing 5,035 acres more or less.

The Bowie No. 1 permit contains 5,035 acres, 1,466 acres of federal surface, and 3,569 of private surface. There are 200 acres of privately owned coal and the remaining coal is federally owned.

A copy of the proposed revision is available for public inspection at the Paonia Public Library, 2 Third Street, Paonia, CO, and at the Denver office of the Division of Reclamation, Mining and Safety (Room 215, 1313 Sherman St., Denver, CO 80203, (303) 866-3567). Written comments regarding this application may be submitted to and additional information may be obtained from the Denver office of Division of Reclamation, Mining and Safety. Written comments must be received by the Division of Reclamation, Mining and Safety within 10 days after the date of this publication in order to be considered.

TABLE OF CONTENTS
VOLUME 7
PAONIA LOADOUT

Maps

Map #	Description
1.	Surface & Subsurface Ownership
2.	Vegetation
3.	Soils
4.	Surficial Geology
5.	Geologic Hazards
6.	Pre & Post Mining Land Use
7.	Loadout Facilities
8.	Premining Topography
8A.	Postmining Topography
8B	Interim Postmining Topography
9.	Water Rights Location
10.	Alluvial Valley Floor
11.	Loadout Pond
12.	Haul Road 1, 2, & 3 Plan & Profile
13.	Existing and Post Mining Cross-Sections
14.	Mine Related Disturbance
15.	Irrigated Cropland Reference Area

The power line that provided power to the pump house has not been removed.

18. Black Bridge Road

The Black Bridge Road was realigned during the time the loadout facility was constructed. The road was constructed over a large multi-plate structure that was installed so the rail cars could pass under the road.

Reclamation Status: The Black Bridge Road will not be reclaimed. The large multi-plate structure will be backfilled with compacted soil that will be obtained from the tail track material from the north side of the railroad bridge next to Bowie's orchard.

19. 46 kV Powerline and Metering Station

The 46kV powerline provided power to the substation that supplied power to the train loadout facilities. The metering station is located north of the Fire Mountain Canal.

Reclamation Status: The 46kV powerline and metering station have not been reclaimed.

20. Farmers Ditch Culvert

The Farmers Ditch culvert conveys the flow of the ditch under the loadout facility.

Reclamation Status: Reclamation will have two stages. The interim stage will remove the first three hundred feet of the culvert and reestablish the channel. The second and final phase will remove the remaining three hundred feet of culvert and reestablish the open channel. The interim reclamation will be shown on Map 8B. The final open ditch will be reestablished though the loadout area as shown on Map 8A.

12. Coal Stockpile Area: Excess material placed in the coal stockpile area will be graded to a smooth uniform surface. Some of the excess material will be stockpiled to be used to fill the Black Bridge Road Culvert and for use in filling the sediment pond. The regraded areas will be seeded and mulched. (3 weeks)

13. Black Bridge Road Culvert: The large multi-plate culvert will be filled with compacted soil. (2 weeks)

14. Sediment Ponds: The sediment pond at the highway stockpile will be reclaimed after vegetation has been established and DRMS has approved their removal. (2 weeks). The larger sediment pond at the east end of the Loadout property will be reclaimed under Technical Revision No. 66.

15. Loadout Wells: The three loadout wells will be sealed. (1 week)

(b) Cost estimate for the reclamation with calculations.

A detailed estimate of the cost of reclamation of the proposed mine and mine facilities is presented in Section 3.05 Performance Bond Requirements.

(c) A plan for backfilling, soil stabilizing, compacting, and grading.

The mine loadout area was constructed using approximate balanced cut and fill technique. To reclaim the areas to approximate original contour, the fill placed on the outslopes must be returned to the cut slopes. The Postminig Topography Map No. 8A shows the final contours of the land.

(d) A plan for removal, storage and redistribution of topsoil.

The site construction occurred before rules requiring the salvage of topsoil were promulgated. Available topsoil will be re-distributed over the re-contoured site.

The operator has one area at the train loadout area which falls within the guidelines of Rule 4.05.2(3)(a)(b). This area is described as follows:

Mine Silo Area Railroad Outslope

This area consists of approximately 1.5 acres of revegetated disturbance occupying outslopes of the railroad embankment developed at the train loadout facility. This small area exemption is depicted on Map 7. Flow from this area travels through a grass filter established below the site. The grass filter consists of the toe of outslopes of the railroad embankment developed at the train loadout facility. The grass filter consists primarily of Smooth Brome and is established on the perimeter of an irrigated orchard. Cover in the grass filter area is conservatively estimated at 50 percent. No mixing of surface drainage and underground mine drainage occurs within or results from this small area exemption.

SedCad[7] modeling utilized to describe this site predicts runoff from the site will occur in compliance with the allowable settleable solids concentration. The SedCad[7] modeling is presented in Exhibit 8 Protection of the Hydrologic Balance, pages SAE-26 through SAE-44.

Farmers Ditch Small Area Exemption

This area consists of approximately 0.8 acres of reclaimed surface, including the reclaimed sediment pond. The runoff will be directed to a silt fence or straw waddle as shown on Map-7. SedCad pages are included as SAE-1 though SAE-9 (Tab 8).

(iii) Probable Hydrologic Consequences.

The probable hydrologic consequences may be divided into surface water and groundwater systems. The effects will be organized as follows:

Effect to surface water from mine facilities.
Effect to ground water from mine facilities.

Small Area Exemption
Farmers Ditch Area
Alternate Sediment Control
Straw Log substitute for Silt Fences

The following table summarizes the peak water stage, trap efficiency and silt fence length for the topsoil stockpiles at gob pile #3.

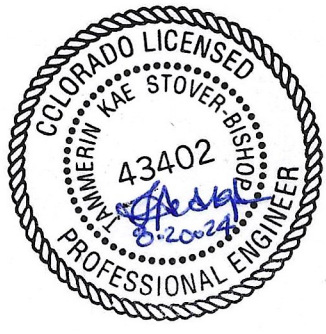
Description	Peak Water Stage Feet	Trap Efficiency %	Length Feet
SAE at Farmers Ditch	0.28	56.59	100

The design flow rate for the silt fence is 10 gallons per minute per square foot. The peak water stage is 0.28 feet or 3.36".

The key factor in sediment control is the trap efficiency. According to data published by American Excelsior Company, its 12" Curlex sediment log has a trap efficiency(% Soil Retained) of 70.3% and a flow rate of 37.5 gallons per minute per square foot. Its 6- and 9-inch sediment logs have a trap efficiency of 53.9% at 42.5 gallons per minute per square foot.

The high flow rates of the sediment logs in relation to the silt fence design would indicate run-off will not overtop the straw logs. The straw logs will filter the run-off faster that the sediment fences. *The favorable trap efficiency of the straws logs indicate they are as good as or better than the designed silt fence.* The 6- and 9-inch straw logs have a slightly lower trap efficiency that is not considered significant.

Straw logs will be keyed into the natural soil at the low point of reconstructed farmers ditch as shown on Map 07. The total length of the straw logs will be comparable to the length indicated in the silt fence designs including tie back distances. The straw logs will be overlapped to prevent flow bypass when pieces are joined to achieve the appropriate total linear footage.



Small Area Exemption
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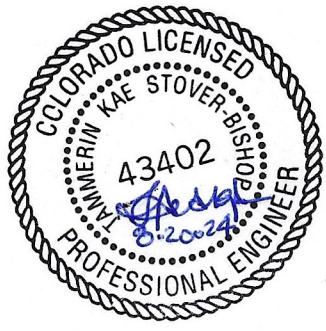


Loadout SAE

Tamme Bishop

J.E. Stover & Associates, Inc.
2352 N. 7th Street, Unit B
Grand Junction, CO 81501

Phone: 970-245-4101
Email: tamme.jestover@bresnan.net

General Information

Storm Information:

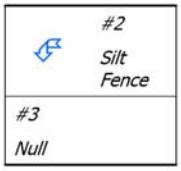
Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	1.800 inches

Particle Size Distribution:

Size (mm)	SanC
2.0000	100.000%
1.0000	75.000%
0.5000	72.000%
0.2500	69.000%
0.1250	66.000%
0.0630	61.000%
0.0160	58.000%
0.0040	56.000%
0.0010	1.000%

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Silt Fence	#2	==>	#3	0.000	0.000	SAE Loadout - Silt Fence
Null	#3	==>	End	0.000	0.000	



Structure Summary:

		Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#2	In	0.800	0.800	0.66	0.05	4.2	115,249	39.12	20.51
	Out			0.64	0.05	1.8	51,185	0.01	0.01
#3		0.000	0.800	0.64	0.05	1.8	51,166	0.01	0.01

Particle Size Distribution(s) at Each Structure

Structure #2 (SAE Loadout - Silt Fence):

Size (mm)	In	Out
2.0000	100.000%	100.000%
1.0000	75.000%	100.000%
0.5000	72.000%	100.000%
0.2500	69.000%	100.000%
0.1250	66.000%	100.000%
0.0630	61.000%	100.000%
0.0160	58.000%	100.000%
0.0040	56.000%	100.000%
0.0010	1.000%	2.304%

Structure #3:

Size (mm)	In/Out
2.0000	100.000%
1.0000	100.000%
0.5000	100.000%
0.2500	100.000%
0.1250	100.000%
0.0630	100.000%
0.0160	100.000%
0.0040	100.000%
0.0010	2.304%

Structure Detail:

Structure #2 (Silt Fence)

SAE Loadout - Silt Fence

Silt Fence Inputs:

Fence Flow Rate (gpm/sq ft)	Width along contour (ft)	Height (ft)	Land Slope (%)	Tie-back distance (ft)
10.0	100.0	2.6	7.50	34.7

**Sediment Storage: 0.00 ac-ft*

**No sediment capacity defined*

Silt Fence Results:

Peak Fence Stage:	0.28 ft
Peak Water Stage:	0.28 ft
Dewater Time:	0.50 days
Trap Efficiency:	56.59 %

Dewatering time is calculated from peak stage to lowest spillway

Stage-Capacity-Discharge Table

Fence Stage (ft)	Water Stage (ft)	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)	
0.00	0.00	0.000	0.000	0.000		Top of Sediment
0.10	0.10	0.003	0.000	0.226	11.90	
0.20	0.20	0.006	0.001	0.458		
0.28	0.28	0.008	0.001	0.637	0.01	Peak Stage
0.30	0.30	0.009	0.001	0.695		
0.40	0.40	0.012	0.002	0.939		
0.50	0.50	0.015	0.004	1.188		
0.60	0.60	0.018	0.005	1.444		
0.70	0.70	0.021	0.007	1.705		
0.80	0.80	0.024	0.010	1.973		
0.90	0.90	0.028	0.012	2.246		
1.00	1.00	0.031	0.015	2.525		
1.10	1.10	0.034	0.018	2.810		
1.20	1.20	0.037	0.022	3.102		
1.30	1.30	0.040	0.026	3.399		
1.40	1.40	0.043	0.030	3.702		
1.50	1.50	0.046	0.034	4.011		

Fence Stage (ft)	Water Stage (ft)	Area (ac)	Capacity (ac-ft)	Discharge (cfs)	Dewater Time (hrs)
1.60	1.60	0.049	0.039	4.326	
1.70	1.70	0.052	0.044	4.646	
1.80	1.80	0.055	0.050	4.973	
1.90	1.90	0.058	0.055	5.306	
2.00	2.00	0.061	0.061	5.645	
2.10	2.10	0.064	0.067	5.989	
2.20	2.20	0.067	0.074	6.340	
2.30	2.30	0.070	0.081	6.696	
2.40	2.40	0.073	0.088	7.059	
2.50	2.50	0.077	0.096	7.427	

Structure #3 (Null)

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#2	1	0.800	0.005	0.000	0.000	87.000	TR55	0.66	0.050
	Σ	**0.800**						**0.66**	**0.050**
#3	Σ	**0.800**						**0.64**	**0.050**

Subwatershed Sedimentology Detail:

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
#2	1	0.320	60.00	10.00	0.8900	1.0000	1	4.2	115,249	39.12	20.51
	Σ							**4.2**	**115,249**	**39.12**	**20.51**
#3	Σ							**1.8**	**51,166**	**0.01**	**0.01**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#2	1	5. Nearly bare and untilled, and alluvial valley fans	30.00	30.00	99.99	5.470	0.005
#2	**1**	**Time of Concentration:**					**0.005**