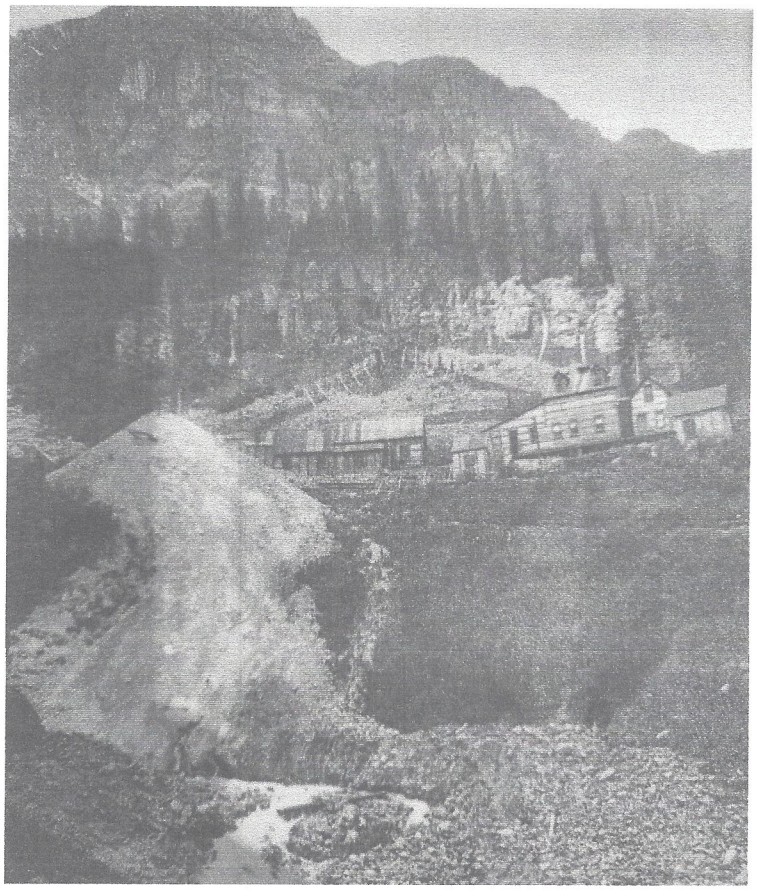
PRELIMINARY PLAN APPLICATION

Proposed Silver Cloud Lodge/PUD

Shelbyville Lode USMS No. 18168 et al
Mill Creek near Chattanooga
Highway 550, San Juan County, Colorado



Applicant:
Bonanza Boy LLC
Attn: Mr. Colby Barrett
PO Box 992
Montrose, Colorado 81402
(303) 909-6083

Prepared By:
Engineer Mountain, Inc.
Attn: Lisa Adair PE
962 Reese Street
PO Box 526
Silverton, Colorado 81433
(970) 387-0500

Job No. 2023-101

Submitted:
May 14, 2024

ENGINEER MOUNTAIN, INC.

*SOILS *RETAINING WALLS
*SEPTICS *FOUNDATIONS
*GRADING AND DRAINAGE
*SITE DEVELOPMENT

May 14, 2024

San Juan County
Attn: Willy Tookey
1557 Greene Street
Silverton, Colorado 81433

EMI Job No. 2023-101

Subject: Preliminary Plan Application for a Proposed Planned Unit Development (PUD), **Proposed Silver Cloud Lodge/PUD,** Shelbyville Lode USMS No. 18168 et al, Mill Creek, near Chattanooga, Highway 550, San Juan County, Colorado.

Dear Willy and Commissioners:

This submittal has been prepared to describe the proposed improvements on the Shelbyville Lode and adjacent mining claims, owned by Mr. Colby Barrett of Bonanza Boy LLC.

The project site is located on Mill Creek Road (County Road 15/US Forest Service Road 821) near Chattanooga on Highway 550 in San Juan County, Colorado.

The attached documents have been prepared as a Preliminary Plan Application for a Planned Unit Development (PUD).

The proposed PUD is intended as a mining heritage tourism and outdoor recreation facility. The future proposed PUD improvements consist of the following: Proposed Silver Cloud Lodge structure, a garage/employee housing structure, accessory structures/uses, utilities, camping, and recreational/environmental improvements.

The Applicant is requesting San Juan County Preliminary Plan review and approval of the Proposed PUD.

Please contact Engineer Mountain, Inc. if you have any questions.

Sincerely,

Lisa M. Adair, PE
Engineer Mountain, Inc.

Submittal to Willy Tookey at the County Courthouse: 1 Binder for County Administrator, 10 Binders for the Planning Commission, 3 Binders for the County Commissioners, San Juan County Improvement Permit Application Form, Adjacent Land Owner Envelopes, 24x36 Plans.

Submittal to Louie Girodo of the County Road & Bridge Department: 1 Binder for Review/Comments, San Juan County Driveway Permit Application Form, San Juan County Relationship to County Road and State Highway Systems Form.

Cc (Electronic Copies): W. Tookey, C. Barrett, B. Harris, G. Archuleta, J. Donovan, T. George, B. Conrad, K. Buck, Project Consultants.

PO Box 526, 962 Reese Street, Silverton, Colorado 81433 - office (970) 387-0500 - cell (970) 946-2217

PRELIMINARY PLAN APPLICATION

Proposed Silver Cloud Lodge/PUD
Shelbyville Lode USMS No. 18168 et al
Mill Creek near Chattanooga on Highway 550
San Juan County, Colorado

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Prepared by Engineer Mountain Inc.

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PRELIMINARY PLAN APPLICATION
Proposed Silver Cloud Lodge/PUD

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San Juan County, Colorado

Application for Improvement Permit

Applicant

Name: BONANZA BOY LLC c/o COLBY BARRETT

Address: PO BOX 992

MONTROSE CO 81402 Phone (303) 909-6083

Owner

Name: SAME

Address:

Phone:

Contractor

Name: TBD

Address:

Phone:

Legal Description of Property:

SHELBYVILLE LODE USMS No. 1#168 AND ADJACENT CLAIMS, AND BONANZA BOY MILL SITE USMS No. 16677B, MILL CREEK AND CHAITANOOGA AREA, HIGHWAY 550, SAN JUAN COUNTY, CO.

Township 42 N. Range 8 W. Section 27 AND 28

Nature of Improvement Planned:

PROPOSED SILVER CLOUD P.U.D. PROPOSED LODGE AND ACCESSORY STRUCTURES, PROPOSED GARAGE AND EMPLOYEE HOUSING STRUCTURE, AND ASSOCIATED UTILITIES/IMPROVEMENTS.

Land Use Zone: MOUNTAIN

Applicant Signature:

Date Application Requested		
Date Submitted for Permit		
Date Permit Issued		
Date Permit Denied		

Reason for Denial:

Fee Unit	FEE PAYMENT	Amount	Date
	Application		
	Building Permit		
	Subdivision-PUD		
	Housing Option		

APPROVAL CHECKLIST	Initial	Date
Land Use Administrator		
Ownership of Surface		
Ownership of Minerals		
Vicinity Map		
Certified Survey Plat		
Monumentation		
Basic Plan Map		
Plans and Drawings		
Road Access Relationship		
Zoning Compatibility		
State Mining Permit		
Owner Notification		
Avalanche Hazard		
Geologic Hazard		
Floodplain Hazard		
Wildfire Hazard		
Mineral Resource Impact		
Wildlife Impact		
Historic Site Impact		
Watershed Clearance		
County Building Inspector		
Building Permit		
State Electrical Inspector		
Electrical Permit		
San Juan Basin Health Unit		
Sewage Disposal: Feet		
Design		
Central Sewage Collection		
State Division of Water Resources		
Adequate Water Source		
Well Permit		
Central Water Distribution		
U.S. Forest Service/BLM		
Access Approval		
State Division of Highways		
Chemical Permit		
Subdivision Exemption		
Subdivision Approval		
Utility Approval		

ENGINEER MOUNTAIN, INC.

*SOILS *RETAINING WALLS
*SEPTICS *FOUNDATIONS
*GRADING AND DRAINAGE
*SITE DEVELOPMENT

May 14, 2024

EXECUTIVE SUMMARY

This is an Executive Summary of the Project.

The project is called the **Proposed Silver Cloud Lodge and Planned Unit Development (PUD)**.

The project site is located **near Chattanooga on Highway 550** between Silverton and Ouray.

The project is designed as a proposed **mining heritage tourism and outdoor recreation** small resort facility. The proposed improvements consist of the following:

Phase 1: Voluntary Clean Up (VCUP) which was approved by the County in 2023, with the cleanup occurring in summer 2023 and summer 2024, including environmental remediation at an existing abandoned mine, and capping of an existing mine waste rock pile.

Phase 2: Proposed Silver Cloud Lodge Structure, and associated proposed accessory structures (sauna, greenhouse, underground hydroelectric system building), and adjacent underground mine lodging rooms, and associated grading/utility improvements, to be located on the Shelbyville Lode and adjacent mining claims, on Mill Creek Road (County Road 15/USFS Road 821), accessed via the Highway 550 Muleshoe Curve, which is close to the area known as Chattanooga. The proposed Lodge structure is being designed to replicate the mining-related structures that existed on the site approximately 100 years ago.

Phase 3: Proposed Garage and Employee Housing Structure, proposed camper shower building, proposed parking areas, and associated proposed grading/utility improvements, located on the vacant Bonanza Boy Mill Site, which is adjacent to the existing Artist Cabin vacation rental, accessed via Highway 550, at the former Townsite of Chattanooga.

Phase 4: Proposed Outdoor Recreation and Environmental Restoration Improvements, consisting of proposed summer-only tent-camping along Mill Creek, proposed improvements to existing pedestrian hiking trails, proposed rock/ice climbing routes, placement of some proposed cables for a "via ferrata" system of roped-in hiking trails, proposed stream restoration areas on Mill Creek, proposed wetlands restoration areas, and reestablishment of fish/wildlife habitat.

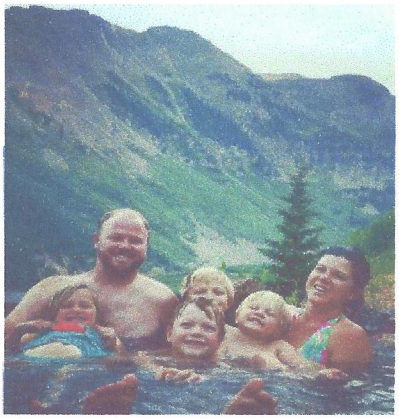
Additional Information: Vehicle parking for all uses will primarily occur on the site close to the existing Artist Cabin. A shuttle van and a snowcat will be utilized to shuttle lodge guests, campers, and employees from the parking area near the Artist Cabin up to the Lodge and camping/recreation facilities in Mill Creek. Avalanche mitigation for the facilities/access roads will be provided by Telluride Helitrax, working in coordination with CDOT avalanche operations. All uses at this proposed mining heritage/outdoor recreation small "resort" PUD are to be "guided," utilizing local employees/guides. A team of engineers/consultants has designed the proposed utilities for this project, and is currently working on obtaining all required permits.

The Applicant is requesting Preliminary Plan approval from the San Juan County Colorado Board of County Commissioners for the Proposed Silver Cloud Lodge/PUD.

PO Box 526, 962 Reese Street, Silverton, Colorado 81433 - office (970) 387-0500 - cell (970) 946-2217

To the Board of County Commissioners and our neighbors in San Juan County;

We are the Barrett family: Colby, Leslie, Lachlan (15), Bridger (13), Vivian (11), and Remington (9) and we are excited to share our plans for our unique lodge with you.





The Barrett Family Enjoying a Dip in a Spring on the Property

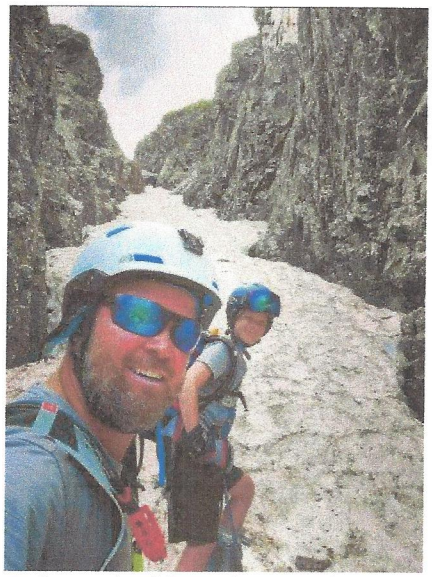
Leslie and I were born and raised in Western Colorado. We met in first grade and grew up exploring the mountains and deserts of this amazing region with our families, and later, together. College, careers, and my service in the United States Marine Corps pulled us away from the Western Slope, but Leslie and I returned in 2008 to raise our family here. We've been part-time residents of the San Juan Mountains since 2010, and moved to Telluride full-time in 2020.

As a family, we love exploring the San Juans more than anywhere else in the world. We're active hikers, backpackers, skiers, rock and ice climbers, and amateur rockhounds. I'm also an avid paraglider, backcountry skier, and mountaineer and love seeing the San Juans from all angles using those access techniques.

While exploring as a family few years back, we found the subject property for sale in the Mill Creek Valley (near Chattanooga curve on highway 550). We think this is the most beautiful valley in all of Colorado, and we can ski or hike to it in less than a day from our home. Perfect!

After exploring the property for multiple seasons (by 4wd, on foot, on skis, and even flying through the valley on a paraglider) and talking with various San Juan County Residents about its history, we started to formulate a plan to share this wonderful valley with others, and to do so in a way that would rebuild and restore the historic buildings on the site as well as clean up the historic mining impacts that have degraded Mill Creek.

We are fully aware of the challenges inherent in building and operating in the San Juans, as well as the importance of making sure that everything we do is something that the residents of San Juan County would be proud of. We feel that their skills as a family are perfect for this endeavor. I am a geotechnical engineer with a background in landslide repair, rockfall mitigation, and civil construction in difficult-access terrain. Leslie has a PhD in technology and co-founded a Regenerative Organic fruit orchard in Delta County, an experience that has brought environmental stewardship to the forefront of both of our thinking. We intend to make this project a family affair as well, employing the kids to help build trail and plant trees, for example. We have also partnered with various agencies for input on design (especially for the stream restoration portion of the project), including the USFS, CDPHE, Trout Unlimited, and the Mountain Studies Institute.



Colby and Bridger Skiing a Chute near the property in June



Leslie discovering an old miner's trail (complete with "guardrail")

Our proposal to environmentally remediate the Silver Crown mine and repurpose it into a small off-grid backcountry lodge – with portions of the lodge built into the old mine – is highly unique, and has been many years in the making. Together with the stream restoration work that we're proposing on Mill Creek, It will likely take up to 5 years to finally complete construction, and many of the permits and permissions required to complete all the details of the project are also lengthy processes with certain permits dependent on other permits or approvals from various agencies.

The first step that we are currently completing is a cleanup of the Silver Crown mine through the Colorado Voluntary Cleanup and Redevelopment Program (VCUP) program. This program was created in 1994 to facilitate the redevelopment of contaminated properties like the Silver Crown mine. Recently, the Colorado State Legislature authorized additional credit funding for the program that was specifically earmarked for rural communities like San Juan County. Put another way, projects like the one we're proposing are exactly what the Legislature was intending to do with VCUP, both with the program itself and with the funding provided in recent legislative sessions.

We have already made great progress in the cleanup work. Approximately 30% of the waste rock slope has been stabilized, and the mine adit drainage that used to flow through contaminated waste rock and into Mill Creek has been rerouted so that it will never again contact mine waste. The mine portal is open and stabilized, and we have surveyed the first 500' of the underground workings with geotechnical and rock mechanics experts. We are on track to finish the cleanup by the end of 2024.

Completing the VCUP is not a standalone operation – it makes no sense without the ability to then construct the lodge. Similarly, the lodge can't be constructed on a pile of contaminated waste rock. For this reason, in the summer of 2023 we asked for and received the following from the County: 1. permission to begin the mine cleanup (VCUP) 2. sketch plan approval of the lodge concept. With those approvals, we began the time-critical VCUP work to meet the State's 2024 deadline.

As planned, the initial stages of the VCUP have already informed the detailed design of the underground portions of the lodge, much of which will be built into the old mine. Happily, the portal and tunnel are in excellent shape, and the rock quality is much better than anyone involved with project had expected. As you'll see in our plans, this has allowed us to move much of the lodge infrastructure underground into the old mine, which is both safer, more environmentally friendly, and less visually impactful.

Throughout the VCUP and lodge sketch plan approval process for the lodge, we received constructive feedback from the County. We have made multiple revisions to our plans based on this feedback, and remain very open to continue to make changes to satisfy County concerns and preferences.

We've also shared our plans with many of you in San Juan County and the feedback has been so positive and helpful. We look forward to being great neighbors with this project and welcome any additional ideas and feedback as we continue our mine cleanup efforts and lodge construction.

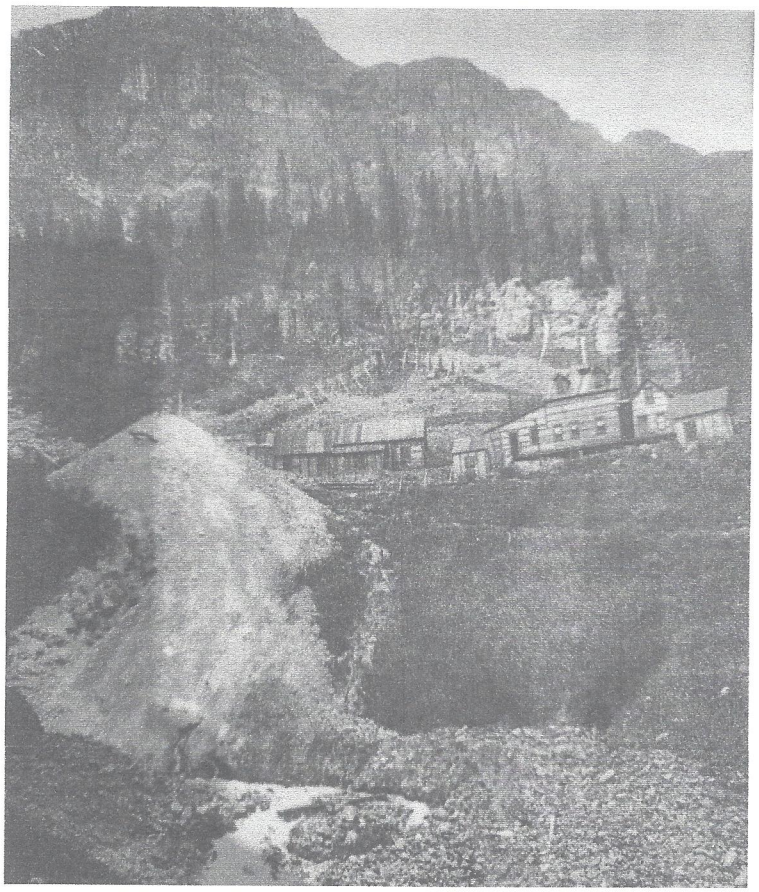
Respectfully,

Colby, Leslie, Lachlan, Bridger, Vivian, and Remington Barrett

ADJACENT LAND OWNER INFORMATION

Proposed Silver Cloud Lodge/PUD

Shelbyville Lode USMS No. 18168 et al
Mill Creek near Chattanooga
Highway 550, San Juan County, Colorado



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Job No. 2023-101

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May 14, 2024

SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

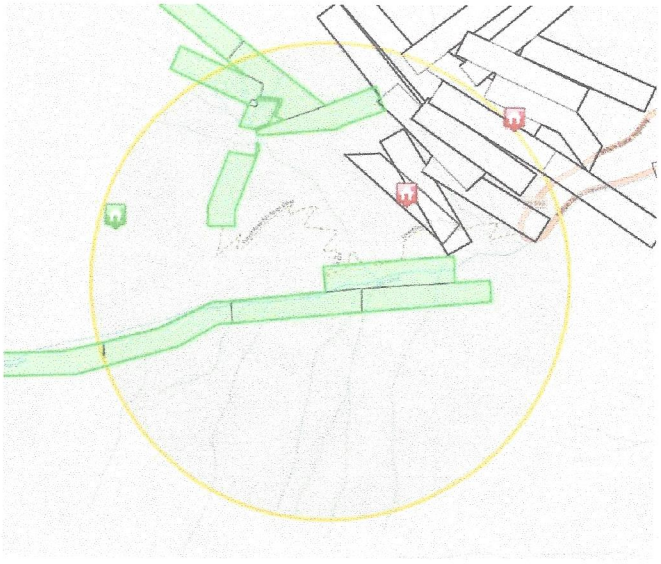
Prepared by Engineer Mountain Inc.
May 14, 2024

This document contains the Adjacent Land Owner Information for the Proposed Silver Cloud Lodge/Planned Unit Development (PUD). This document has been prepared by Engineer Mountain Inc. in general accordance with the San Juan County Zoning and Land Use Regulations, and the land owner information is valid as of May 14, 2024.

Map 1 (below): A San Juan County Colorado Assessor parcel map, with a circle having a 1,500 foot radius, centered on the existing Silver Crown Mine portal, and the Proposed Silver Cloud Lodge, located on the Shelbyville Lode, in Mill Creek, near Chattanooga.



Map 2 (below): A San Juan County Colorado Assessor parcel map, with a circle having a 1/2 mile radius, centered on the existing Silver Crown Mine portal, and the Proposed Silver Cloud Lodge, which are located on the Shelbyville Lode, in Mill Creek, near Chattanooga.



All of the private land within the circles on the two maps shown above is owned by the Applicant, and the public land is managed by the US Forest Service.

SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

Prepared by Engineer Mountain Inc.
May 14, 2024

Map 3 (below): A San Juan County Colorado Assessor parcel map, with a circle having a 1,500 foot radius, centered on the vacant Bonanza Boy Mill Site, at the proposed employee housing/garage structure, located on Highway 550 at Chattanooga.



The private land within the circle on the map shown above is owned by the Applicant, CDOT, and Margaret Stern. The public land is managed by the US Forest Service.

Map 4 (below): A San Juan County Colorado Assessor parcel map, with a circle having a 1/2 mile radius, centered on the vacant Bonanza Boy Mill Site, at the proposed employee housing/garage structure, located on Highway 550 at Chattanooga.



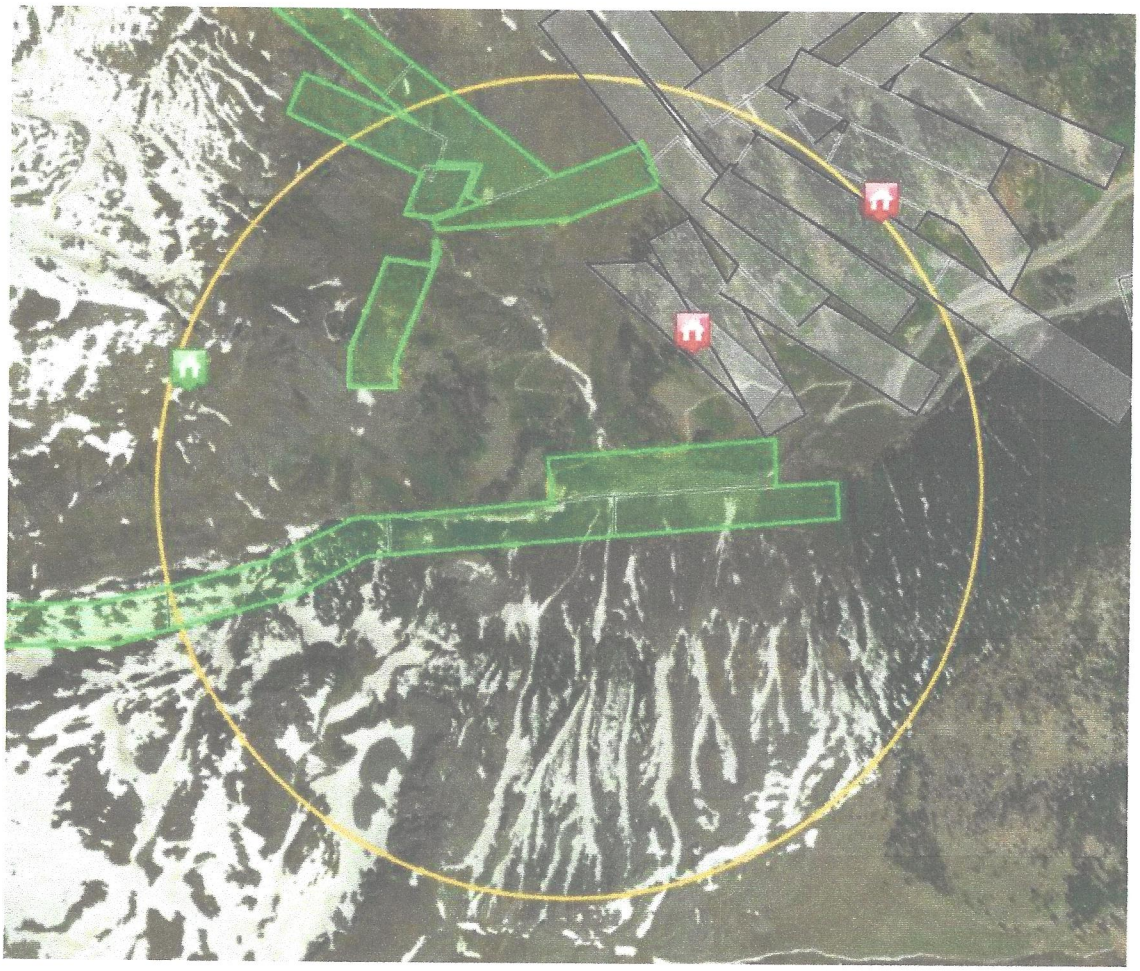
The private land within the circle on the map shown above is owned by the Applicant, CDOT, Margaret Stern, Lori & Mark Heberle, Ed Studebaker, Heather & Shane Thompson. The public land is managed by the US Forest Service.

SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

Prepared by Engineer Mountain Inc.
May 14, 2024

Map 5 (below): A San Juan County Colorado Assessor aerial map, with a circle having a 1/2 mile radius, centered on the existing Silver Crown Mine portal, and the Proposed Silver Cloud Lodge, which are located on the Shelbyville Lode, in Mill Creek, near Chattanooga. All of the private land within the circle on the aerial map shown below is owned by the Applicant, and the public land is managed by the US Forest Service.

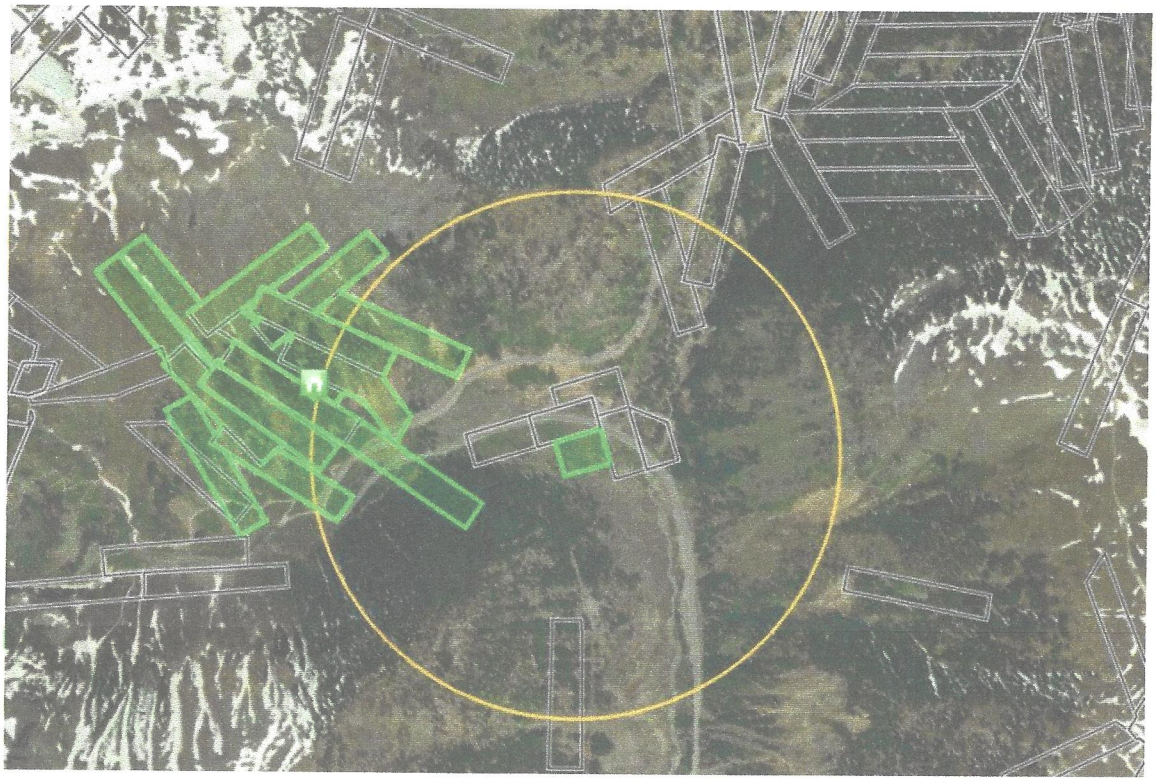


SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

Prepared by Engineer Mountain Inc.
May 14, 2024

Map 6 (below): A San Juan County Colorado Assessor aerial map, with a circle having a 1/2 mile radius, centered on the vacant Bonanza Boy Mill Site, at the proposed employee housing/garage structure, located on Highway 550 at Chattanooga. The private land within the circle on the map shown below is owned by the Applicant, CDOT, Margaret Stern, Lori & Mark Heberle, Ed Studebaker, Heather & Shane Thompson. The public land is managed by the US Forest Service.



SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

Prepared by Engineer Mountain Inc.
May 14, 2024

The Applicant owns all of the mining claims at Chattanooga, except for the Stern's Artist Cabin parcel (which is the Mountain Chief Mill Site), and four mining claims recently acquired by CDOT (at the existing historic Silver Ledge Mill Building on Highway 550).

Applicant's Parcel 1:
BONANZA BOY - 16677, DENVER - 18179, GOLDEN EAGLE - 18179, INDEPENDENCE - 16677, LITTLE MAUD - 18179, MARGIE - 16677, MAUD EXT - 18179, MILWAUKEE EXT - 18179, PINTO - 16677, SILVER KING - 16677, SILVER WEDGE - 18179, GOLDEN EAGLE EXT - 18179, HAPPY JIM - 18179, MILWAUKEE - 18179, BONANZA BOY M S - 16677.

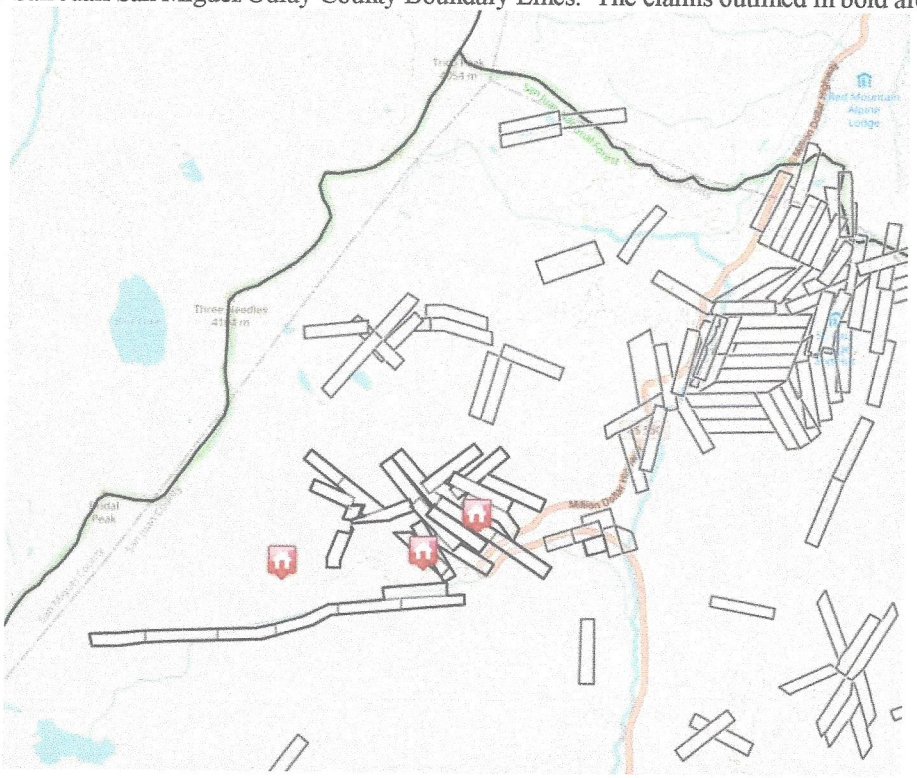
Applicant's Parcel 2:
GIANT KING - 1789 A, MOUNTAIN CHIEF - 560 A, SHELBYVILLE - 18168, SILVER CROWN - 1788 A, VALLEY - 570 A, WONDERFUL - 559 A, PRIDE - 558 A, PUEBLO - 18163, REBECA - 18163, SILVER STORM - 2097, SUNNYSIDE - 18163, SILVER CLOUD - 2096 UND 19% INT IN 8.05 ACRES.

Applicant's Parcel 3:
CHATTANOOGA - 18163

There are only six mining claims which are part of this Proposed Silver Cloud Planned Unit Development (PUD) which are the following:

Shelbyville Lode (in Mill Creek)
Mountain Chief Lode (in Mill Creek)
Valley Lode (in Mill Creek)
Wonderful Lode (in Mill Creek)
Pride Lode (in Mill Creek)
Bonanza Boy Mill Site (on Highway 550 at Chattanooga).

Map 7 (below): The map below depicts all of the private land owned by the Applicant, as well as nearby private land, and surrounding public lands. The Applicant's private land is currently listed in three "groups," under three San Juan County Colorado Assessor Parcel Numbers, for taxation purposes. This map (below) has been "zoomed out" to show the project site in relation to nearby San Juan/San Miguel/Ouray County Boundary Lines. The claims outlined in bold are the Applicant's.



SILVER CLOUD LODGE/PUD
LOCATED AT MILL CREEK AND CHATTANOOGA
HIGHWAY 550, SAN JUAN COUNTY, COLORADO

ADJACENT LAND OWNER INFORMATION

Prepared by Engineer Mountain Inc.
May 14, 2024

Here is a list of the Adjacent Land Owners (owners of private land) within 1/2 mile of the Proposed Silver Cloud Lodge building on the Shelbyville Lode in Mill Creek, and within 1/2 mile of the proposed employee housing/garage structure on the Bonanza Boy Mill Site at Chattanooga:

(1) Applicant Colby Barrett of Bonanza Boy LLC.
Owner of the majority of the private land at Chattanooga.

(2) CDOT
Recently acquired the Valley Mill Site, the Wonderful Mill Site, the Pride Mill Site, and the Columbine Mill Site, which are located close to the existing Artist Cabin vacation rental residential structure, and at the existing historic Silver Ledge Mill Building at Chattanooga, and in the general area of the Howitzer avalanche mitigation zone, along Highway 550.

(3) Margaret Stern
The Stern family owns the Mountain Chief Mill Site at Chattanooga on Highway 550. Their property has an existing residential structure called the Artist Cabin vacation rental.

(4) Ed Studebaker
Owner of the Mineral Rights, for the Copper Bell Lode and two adjacent claims, which are about a half mile from Chattanooga, close to Red Mountain Pass.

(5) Heather & Shane Thomspon
Owners of the Surface Rights, for the Copper Bell Lode and two adjacent claims, which are about a half mile from Chattanooga, close to Red Mountain Pass.

(6) Lori & Mark Heberle
Owners of the Gold Finch Lode, which is a vacant "inholding" mining claim, surrounded on four sides by US Forest Service public land, located about a half mile south of Chattanooga, visible from Highway 550, on the edge of the "Sam's" avalanche runout zone.

(7) Charles Gilliland
Owns 75.5% Undivided Interest in the Silver Cloud Lode in Mill Creek.
The Applicant owns 19% undivided interest in the Silver Cloud Lode. The Silver Cloud Lode is at the dead end of the Mill Creek Road/USFS Rd. 821/CR 15 in Mill Creek. The Silver Cloud Lode is not part of this proposed PUD.

(8) Grayjay Meadows LLC
Owns 1% Undivided Interest in the Silver Cloud Lode in Mill Creek.
The Applicant owns 19% undivided interest in the Silver Cloud Lode. The Silver Cloud Lode is at the dead end of the Mill Creek Road/USFS Rd. 821/CR 15 in Mill Creek. The Silver Cloud Lode is not part of this proposed PUD. The Article of Incorporation on the Colorado Secretary of State website indicates that Grayjay Meadows LLC appears to be affiliated with a person named Bruce Norquist. Interestingly the Silver Cloud Lode has a total of 75.5 + 1 + 19% = 95.5% undivided interest ownership, with the

remaining 4.5% undivided interest ownership currently unknown, and not found on the County Assessor website.

The normal range for adjacent land owner envelopes and notifications for County applications is 1,500 feet from the exterior boundaries of the project site. We will be providing County Administrator Willy Tookey with the following envelopes/addresses, to be used for a second adjacent land owner notification regarding the Proposed Silver Cloud Lodge/PUD. We can provide additional envelopes for further-away adjacent land owners, if required by the County Administrator. These are all of the known private land owners within 1/2 mile of the proposed structures. These names and addresses were obtained from the San Juan County Colorado Assessor website.

BONANZA BOY LLC
c/o COLBY BARRETT
PO BOX 992
MONTROSE CO 81402-0992

CO DEPT OF TRANSPORTATION
3803 MAIN AVE STE 300
DURANGO CO 81301-4034

STERN MARGARET B
763 CHARLEYS CREEK RD
TUCKASEGEE NC 28783-8811

STUDEBAKER ED
1991 PURDY MESA RD
WHITEWATER CO 81527-9654

THOMPSON SHANE I & HEATHER A
1625 S RALEIGH ST
DENVER CO 80219

HEBERLE MARK W & LORI M
131 COLUMBINE DR
GRAND JUNCTION CO 81507-1380

GILLILAND CHARLES DWANE
608 N SPRUCE AVE
BARTLESVILLE OK 74006-1945

GRAYJAY MEADOWS LLC
PO BOX 3386
MILAN NM 87021-3386

Thank you for the opportunity to present you with this adjacent land owner information for the Proposed Silver Cloud Lodge/PUD. Please contact the Applicant Colby Barrett or Engineer Mountain Inc. if you have any questions.

Thanks,
Lisa Adair PE
Engineer Mountain Inc.

PROJECT NARRATIVE

Preliminary Plan Application for Proposed Silver Cloud Lodge/PUD

Shelbyville Lode USMS No. 18168 et al, Mill Creek, near Chattanooga on Highway 550
San Juan County, Colorado
Prepared by Applicant (5/10/2024)

Applicant/Owner:
Colby Barrett, Bonanza Boy LLC, PO Box 992, Montrose.

Type of Application:
This is a County "Preliminary Plan" Application for a Planned Unit Development (PUD). The PUD is the Proposed Silver Cloud Lodge/PUD (named for a nearby mine). Phase 1 of the Proposed PUD was a 2023/2024 mining reclamation Voluntary Cleanup (VCUP) project, and this Phase application covers the development of a backcountry lodge on the VCUP remediated site.

Project Location:
The Shelbyville Lode USMS No. 18168 and adjacent mining claims (Valley Lode, Mountain Chief Lode, Wonderful Lode, Pride Lode) , located on County Road 15/US Forest Service Road 821 in Mill Creek; and the Bonanza Boy Mill Site USMS No. 16677B, located at Chattanooga on Highway 550, in San Juan County, Colorado.

Executive Summary:
The applicant is requesting the following from the County: Preliminary Plan approval of the proposed lodge and PUD.

The proposed Silver Cloud Lodge structure will be a timber-frame building to be constructed on the approximate footprints of the old Silver Crown mine historic buildings that once occupied the site. The proposed Lodge is conceptually envisioned to consist of an approximately 7,000 total square footage, two-story main structure, with approximately 1,500 square feet footprint of attached/adjacent 1-story structures (including a small hydropower house), and a small earth-sheltered solar greenhouse and wood-fired sauna. The Lodge is being designed in a historically accurate manner to closely emulate the buildings that existed on the site approximately 100 years ago. The adjacent Silver Crown Mine will be reopened and internally stabilized to house some of the necessary infrastructure for the Lodge as well as 5 additional guest rooms, utilizing the old mine workings as well as some new tunnels/rooms/portals. The inert rock generated from the underground excavation/construction will be used to cap the existing historic mine waste rock piles as part of a Voluntary Cleanup (VCUP) mining reclamation project that has been permitted by the Colorado Department of Public Health and Environment (CDPHE). Conceptual plans for the lodge are included in this submittal. Phase 1 of this conceptual proposed PUD was the VCUP (2023-2024) and has already been approved. This Phase 2 covers the proposed lodge and a proposed garage/employee housing structure in the valley below. This development will also include habitat enhancement of Mill Creek, wetlands creation, reforestation efforts, and recreational improvement including trail building, interpretive sign installation, installation of primitive dispersed campsites, establishing rock and ice climbing routes, and a future via ferrata in the Mill Creek Gorge.

The future proposed garage/employee housing structure for the lodge will be in the valley below (near the Artist Cabin and close to the old Chattanooga townsite), envisioned to include a small parking area, a 2,000 square foot garage, with a 2,000 square foot employee housing unit above the garage (3 employee housing units).

All of the future proposed buildings will be super-insulated, off-grid, and powered by a combination of solar and micro-hydro, with backup generators. Although the applicant plans to use a fossil fuel-based generator

at times during construction and during emergencies, the main power systems will be designed to be fully carbon-neutral.

Over the years, the applicant proposes to improve the property trails, designate some primitive dispersed tent campsites, reforestation efforts, stream restoration, bolted rock and ice climbing routes, and a possible future via ferrata (fixed cable hiking trail) in the Mill Creek canyon. The restoration of the Mill Creek stream ecosystem will be designed in coordination with the USFS, Trout Unlimited, the US Army Corps of Engineers, and designed by Mountain Studies Institute, with the possibility of reintroducing native Cutthroat Trout into the area (in coordination with the Colorado Department of Wildlife). In addition, all site work will be designed to create a net gain of wetlands at the site. This project will provide some much-needed outdoor recreation and mining heritage tourism infrastructure, which can help alleviate the current impacts encountered since this area has been recently "discovered," and in an area between Silverton and Ouray where no basic tourism infrastructure currently exists.

Property Description:
The applicant owns nearly all of the private land in the upper Mill Creek Valley through a Colorado LLC (Bonanza Boy, LLC). All of the proposed improvements will take place in two locations: 1. Near the Silver Crown Mine Portal on five contiguous claims (Shelbyville Lode USMS No. 18168, Valley Lode USMS No. 570, Mountain Chief Lode USMS 560, Wonderful Lode USMS No. 559, and Pride Lode USMS No. 558); 2. Down the valley near the Artist Cabin/old Chattanooga townsite (Bonanza Boy Mill Site USMS No. 16677B). Surface and Mineral Rights are in the possession of the applicant. There is one mining claim, the Silver Cloud Lode, located far up in the Mill Creek basin, where no development is proposed, which is only partly owned by the applicant.

Acreage:
The Applicant owns approximately 254 acres near Chattanooga.

Parcel Numbers:
Parcel Numbers 47770280040001 and 47770220040006. The Assessor property cards with the various Parcel Numbers for the project site and all of the adjacent claims have been submitted.

Township Range Section:
Township 42 North, Range 8 West, Sections 27 and 22, NMPM.

Zoning:
Mountain Zoning District. Some of the applicant's mining claims are also located in the Scenic Preservation Overlay District (which includes all lands located within 1500 feet of Highway 550).

Surrounding Area/Land Uses/Zoning:
US National Forest (and vacant private mining claims also owned by the applicant) borders the Silver Cloud Lodge/PUD project site mining claims; while the Bonanza Boy Mill Site is bordered by the Stern's Artist Cabin Vacation Rental (private land), and several CDOT-owned mining claims (near the Silver Ledge loadout structure on Highway 550).

The first of the two future proposed aboveground structures is near the old Silver Crown Mine (approximate elevation 10,810 feet) in the Mountain Zoning District. It is not above 11,000 feet elevation, nor is it on Alpine Tundra, nor is it known to be in any of the County's Overlay Districts. The mine adit is currently draining about 20-30 gpm of water. As part of a Voluntary Cleanup (VCUP), this adit water will has been

rerouted, so it no longer flows through the mine waste rock. Since the proposed adit drainage reroute impacted a very small area of non-jurisdictional wetlands, the work was coordinated with CDPHE and the US Army Corps of Engineers (USACE) to ensure Nationwide Permit and State compliance. During the ongoing VCUP the applicant is capping the on-site mining waste rock pile with inert rock and gravel produced as underground construction proceeds, permanently cleaning up the site for current and future generations.

The proposed accessory garage/employee housing structure on the Bonanza Boy Mill Site is located near the Artist Cabin vacation rental, in the Mountain Zoning District and the Scenic Preservation Overlay District. This area has some wetlands which are being delineated in coordination with the USACE. If there end up being any unavoidable wetlands impacts in the Chattanooga area, those impacts will be compensated with proposed wetlands mitigation as required by the USACE. The proposed wetlands creation typically required as part of the mitigation process will be part of an overall proposed ecological rehabilitation of the Mill Creek drainage and stream restoration, which is being designed by Mountain Studies Institute with input from additional agencies such as USFS, Trout Unlimited, and will include input from the Colorado Division of Wildlife (especially if CDOW deems it feasible to reintroduce Native Cutthroat Trout as part of the Mill Creek rehabilitation).

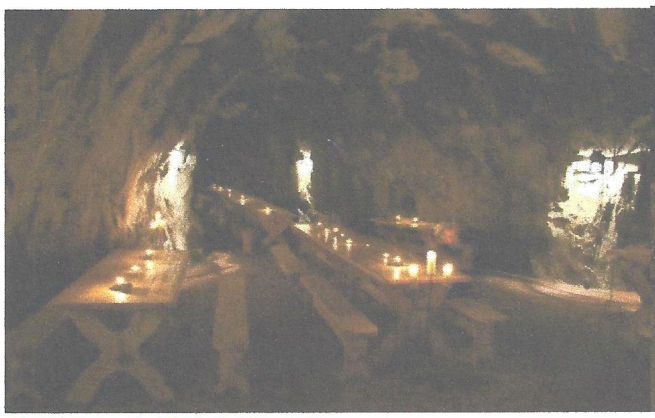
Proposed PUD:
This is a "Preliminary" application, for a proposed future Planned Unit Development (PUD), named after a nearby mine, called the Silver Cloud Lodge/PUD. The Applicant is requesting an approval from the County of the this proposed lodge/PUD (a County conceptual "Preliminary" proposed PUD approval).

Phase 1 - Proposed VCUP (construction during 2023-2024) (approved and ongoing):
Phase 1 of the Proposed PUD is a mining reclamation voluntary clean up (VCUP) project. The VCUP work started in the fall of 2023, is currently on-schedule, and will continue into the fall of 2024. The Applicant is requesting a County Land Use Permit to construct a backcounty lodge on the site of the mining reclamation work, as well as associated employee housing and garage structures in the valley below. The 2023/2024 VCUP generally includes: opening an existing draining mine adit (complete), rerouting the surface drainage around the on-site mining waste rock pile (complete), generating inert rock fill from within the mine, using the rock fill to cap the waste rock pile, stabilizing the edge of the waste rock pile using gabions (wire cage basket blocks filled with native rock) (30% complete), investigating/excavating parts of the underground existing mine (complete), and proposed stream restoration/water quality improvements. The name of the mine is the Silver Crown Mine, and the portal is located on the Shelbyville Lode.

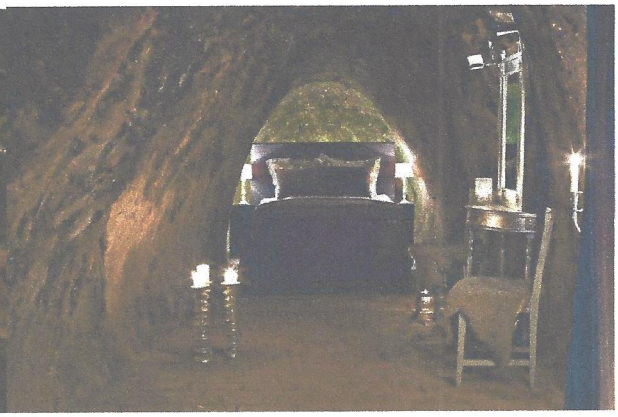
Current Phase:
The Applicant is requesting County approval for this proposed PUD which consist of the following concepts: A proposed lodge structure called the Silver Cloud Lodge, with some of the lodge facilities extending into the adjacent mine, outbuildings adjacent to the lodge structure, proposed grading/utilities for the lodge; a proposed garage/employee housing structure, proposed grading/utilities for the proposed garage/employee housing structure, some future proposed designated dispersed primitive tent camping spots (likely to require a basic water/sewer "bathhouse"), stream/wetlands restoration conducted in collaboration with local nonprofits/agencies, and additional future proposed recreational and mining heritage tourism non-structure improvements.

Proposed Lodge (tentatively scheduled for construction in 2025-2027):
The proposed PUD includes two main structures. The first would be the Silver Cloud Lodge structure, which would be located near the Silver Crown Mine portal on the Shelbyville Lode. The lodge will have approximately 6 guest rooms that will be housed inside one of the recreated historic buildings and 5 guest

rooms that will be installed inside the Silver Cloud Mine. This concept is unique to North America but has been successfully implemented in the historic Sala Silver Mine in Sweden, as shown below.



Dining Room Inside Sala Silver Mine



Bedroom Inside Sala Silver Mine

Adjacent to the lodge will be a small earth-sheltered greenhouse. The lodge will be primarily powered by micro-hydro, with turbines situated in a small earth-sheltered turbine house in the valley below.

Proposed Garage/Employee Housing (tentatively scheduled for construction in 2026-2028): The second proposed future structure would be an equipment storage garage, with employee/caretaker housing, located adjacent to the Artist Cabin (once occupied by the Stern family but now a vacation rental unit) lower down the valley at Chattanooga. The garage/employee housing structure has been designed and will be sited on the Bonanza Boy Mill site.

Proposed Recreational Improvements and Stream Improvements (tentatively scheduled for construction in 2025-2030):
The applicant also proposes improvements to the outdoor recreational opportunities at the site which will include a trail network, a via ferrata, rock and ice climbing routes, and dispersed primitive tent campsites above the lodge, as well as Stream Enhancement of Mill Creek, which will include wetlands creation and the addition of approximately 8 wooden platform campsites.

The applicant intends to create a trail network throughout the property that will closely mirror the paths used by the early miners but will be constructed in accordance with USFS Trail design standards. Limited dispersed primitive campsites, accessible only by foot and not visible from the roads in the area may be created. In addition, multiple rock-climbing routes will be bolted, and limited ice-farming may be conducted during the winter. A via ferrata similar to those in Telluride and Ouray (in construction approach and appearance, not necessarily in size) will be built over the years in the Mill Creek Gorge. The intent of these improvements will be to provide more recreational opportunities to visitors of San Juan County. Note that most of these improvements would be accessible only to groups with qualified local mountain guides, with all guiding work being subcontracted to guides from San Juan, Ouray, or San Miguel Counties.



An Historic Mining Trail on the Property – Damaged by Years of Neglect – that Could Be Restored as Part of a Trail/Via Ferrata Network

In the middle part of the valley the Applicant proposes a stream enhancement and wetlands creation project that will be designed by Mountain Studies Institute and executed in conjunction with Trout Unlimited, the USFS, and other agencies and local non-profits. This stream enhancement project will also involve the construction of 8 wooden platforms suitable for tent camping.

Site Access:
Access to the VCUP site on the Shelbyville Lode is the following: CDOT State Highway 550, to the Chattanooga area to the tight hairpin curve called the Muleshoe Curve, to Mill Creek Road (US Forest Service Road 821/County Road 15). USFS Rd. 821/CR 15 crosses through the project site. The Applicant will comply with all requirements of the County Road and Bridge Department Supervisor and the US Forest Service. The applicant has met on site with the USFS and held a video conference about the VCUP operation and some proposed gate(s)/signs and a minor road realignment. CDOT and USFS Access Permits are being obtained for the proposed PUD. County "driveway permit" forms have been submitted to the County Road and Bridge Supervisor Louie Girodo, to obtain his comments/requirements. The Applicant is proposing to relocate a short stretch of CR 15/USFS Rd. 821 where it crosses through the Shelbyville Lode in order to create a wider turnaround radius. The gating concept and minor road realignment concepts are included in the attached. The US Forest Service will not require a commercial use permit for either the construction access for the VCUP or the lodge operations.

Access to the proposed future garage/employee housing structure is via State Highway 550 at Chattanooga. This structure will be located on a lot adjacent to the Artist Cabin (vacation rental owned by the Sterns).

Power, Solar, Water, Heat, Generator, Woodstove, Septic, Internet, Phone, Trash:
Power at this site is difficult, with the nearest grid-tie miles away and the valley shaded during much of the winter, with low stream flows during the winter as well. Power will be primarily produced in the spring, summer, and fall by a roof array of matte-finish, rust colored, low reflectivity building-integrated solar panels that will be custom-manufactured to look like a rusty metal roof (they will not be black, blue, or have the visual impact of "traditional" solar panels). Lodge power will also be generated from a Micro-Hydro system fed by a portion of Mill Creek and from the adit discharge of the Silver Crown Mine. During the winter, a propane generator will augment the dearth of solar and micro-hydro.

The following permits will be secured prior to construction of this hydropower system:

1. Individual discharge permit from CDPHE
2. Water rights application
3. CWCB Injury with Mitigation Approval
4. Lease and Management of Water Rights (Annually)

During the spring, summer, and fall, the solar and micro-hydro will be more than enough for the needs of the lodge. The excess will be used to charge a battery bank, then to heat a large thermal storage water tank. During the winter, when solar and hydro resources are scarce, the reverse cycle will occur as the thermal mass of the water and the batteries are utilized followed by a generator to produce both usable electricity and heat.

Heat for the lodge will be provided in a similar way the excess electricity from solar and hydro will be used to store heat, and the lodge will also utilize a high efficiency heat pump which will benefit from the massive heat sink that is available in the Silver Crown Mine (from historical reports, the mine is over 3,200 feet long and is at a constant temperature of around 50 degrees). Using the mine's constant temperature is a great way to allow for the operation of a super-efficient heat pump (which can sometimes struggle when input temperatures fall below freezing). The site will have a fossil fuel-powered generator for emergencies, as well as wood stoves. These multiple-redundant backup systems will ensure that our guests will be able to ride out any storm even in the case of multiple system failures.

The garage/employee housing will have much lower power demands. A simple solar array, with batteries and a backup generator will power that smaller structure.

Domestic water for the lodge will come from the mine adit itself, which flows around 30 gpm at quality levels that meet drinking water standards in almost all aspects. After minor treatment for potability, it will be used for domestic purposes after which it becomes wastewater which will enter/be treated by a septic treatment system that will be permitted by SJBPH. Reference the septic permit in the Attached. Excess water beyond the needs of the lodge will be fed into the micro-hydro system.

Water for the garage/employee housing will be from an infiltration well fed by Mill Creek, and waste will be treated and discharged. Reference the septic permit in the attachments.

Internet for both structures will be provided by Starlink. A satellite phone/Garmin Inreach and a CB radio will be available at both sites for emergency use. Trash will be internally stored in bear-proof facilities and periodically deposited at the waste transfer station in Silverton or Ouray.

Hydropower System Details:
The hydropower system will have two components: a small turbine that will be fed year-round by the excess water from the mine adit that is not needed for domestic purposes (approximately 20-30 gpm), and a seasonal flow from Mill Creek. Both will flow from the area near the lodge in underground pipes to a small underground hydro generation house in the valley below.

The Mill Creek water will be diverted from Mill Creek at about elevation 10,840' using a weir constructed of natural boulders and concrete. This weir will be designed to only capture the flow of Mill Creek *above* 0.25 cfs (typical low flow levels) and then also not capture any water above 4.0 cfs (typical high flow levels). This graduation will prevent Mill Creek from going dry due to the hydro generation and also allows for normal high flow events as well which can be important for stream health (see stream habitat improvements section later in this document). This water will drive a turbine and return to the Mill Creek drainage at native

velocity. The water from the adit will drive a separate turbine and will return to the Mill Creek drainage at native velocity. The entire turbine house will be buried into the hillside like a bunker, with a heavy steel door. This will not only prevent any turbine noise from becoming noticeable, it will also virtually eliminate the visibility of the structure and will make it impervious to even the largest of avalanches.

Water usage for this hydro project is considered non-consumptive as all the water is returned to the stream and there is no evaporative loss. After construction is complete this non-consumptive use will be transferred to the applicant and decreed as a water right in court. An injury with mitigation process will also be followed to ensure that the hydro system does not negatively affect Mill Creek along the subject reach.

The turbine will not be tied to the grid, which reduces the regulatory burden immensely, but the applicant has also taken the additional step of drafting an Individual Discharge Permit from the CDPHE. This allows for periodic monitoring to ensure that the hydro generation isn't introducing trace amounts of grease or oil into Mill Creek.

Ken Gardner has been contracted to design and install the hydropower system. Ken's company has completed numerous projects throughout Colorado (including in the drainage immediately to the South) and is on the State supplied list of hydropower contractors.

Woodstoves:
The Applicant plans to utilize the following wood stoves at the site. The number and type of wood stoves has been minimized to reduce impact to air quality in the valley, but still provide redundant heating in the event of power/heat system failures. Any/all woodburning devices installed at this site will comply with the County regulations requiring the use of EPA-approved models with chimney cap/spark arrestor.

Main Lodge:
1 Communal fireplace at the lodge in the main dining hall. Will allow for guests to stay warm in the communal area in during a shelter in place + power/heat outage event.
1 Woodburning cookstove in the lodge kitchen. Unlikely to be used very often, but will allow for meal preparation during a shelter in place + power/heat outage event.
1 Woodburning stove in the largest guest suite of the lodge. Will allow for at least one sleeping room in the lodge to be heated during a shelter in place + power/heat outage event.
1 Woodfired sauna stove in the proposed sauna accessory structure near the lodge.

Employee Housing/Garage:
1 Woodburning cookstove in each of the employee housing units (3 total). Will allow for employees to stay warm and prepare meals during a shelter in place + power/heat outage event.
1 Woodburning stove in the reception/office area of the building. Will allow for this critical room, which also serves as the dispatch center for the entire valley, to be heated during a shelter in place + power/heat outage event.

Propane:
The Applicant plans to utilize propane for cooking and a backup heat and power system in the proposed future lodge. Propane will be kept in a buried permanent tank(s) due to avalanche hazard on portions of the site. A permanent propane tank is also expected for the proposed future garage/employee housing structure but will be above ground and screened.

Exterior Lighting:

For safety, a minimal amount of exterior lighting is proposed at each of the two proposed future structures. Exterior lighting will be in conformance with the requirements of San Juan County.

Refuse:
The Applicant will be responsible for bi-weekly trash disposal. According to County regulations, property owners are responsible for solid waste transportation and solid waste disposal fees. On-site trash will need to be contained within a structure at all times until removal to the Transfer Station. County applicants are required to sign up for Town of Silverton refuse billing upon approval of a County Permit.

Landscaping:
Landscaping is to consist of raking and removal of combustible ground cover near the structure, as recommended by the Colorado State Forest Service Firewise Practices, to develop adequate defensible space. Revegetation and screening will be provided by the Applicant in accordance with the requirements of San Juan County. Stream restoration including wetlands plantings, in conjunction with the Forest Service, CDOW and Trout Unlimited is proposed.

Screening:
For the required adequate screening of the proposed structures as viewed from any County Roads and the Highway, the applicant proposes the installation of imported evergreens at the lodge and willows at the garage/employee housing structure.

Surveying:
A survey plat for the Shelbyville Lode and adjacent mining claims was prepared by Colorado Licensed Professional Land Surveyor David Bulson of Telluride. A copy of the survey plat is included within this application for your review. Additional surveying has been completed as part of the wetlands delineation for the Bonanza Boy Mill Site.

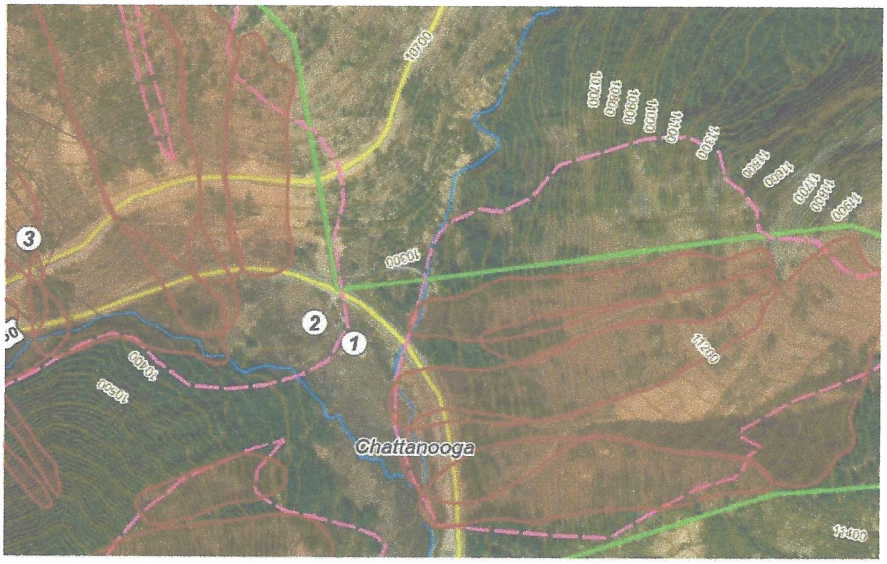
Geology:
Subsurface conditions in this area generally consist of topsoil overlying gravel soil. Geology maps for the Chattanooga/Mill Creek area indicate the gravel soil is generally Qal (Quaternary) alluvium (water-deposited), as well as some fluvial (river fan and floodwater-deposited) areas, and colluvium (gravity-deposited) slopes (such as talus). Underlying the surface soil is Tig (Sultan Mountain stock granitic intrusive) and Tsj (San Juan Formation volcaniclastic deposits) bedrock.

Avalanche:
The project site property boundaries have been overlaid onto the County Avalanche Hazard Maps. The plan sheet is included for your review. According to the County Avalanche Hazard Maps, portions of the property appear to be within a potential avalanche area. An avalanche study is included for your review. The report was prepared by Alan Jones, owner and Principal Consultant with Dynamic Avalanche Consulting Ltd. in Revelstoke, BC. Alan is a Professional Engineer and avalanche professional with 25 years of diverse avalanche and geotechnical engineering consulting experience. Alan has extensive experience in avalanche planning and operational projects in the transportation, mining, hydroelectric, and land development industries. He has worked on avalanche projects in the US (including Colorado), Canada, Argentina, Chile, Japan, and New Zealand. His experience includes highway avalanche safety, regional avalanche forecasting, and avalanche research.

The extensive avalanche study indicated that the Silver Crown mine portal area is one of the safest locations in the upper valley to build (which is likely why the old timers built there). The major named slide paths will

not affect the site, but there is still some residual avalanche risk from shorter slide paths and generalized powder pressure at the site that can be mitigated through appropriate structural design. Notably, the rock berms built by the old miners will be restored, all windows and doors will be rated to withstand a category 4 hurricane (138mph wind/50 psf pressure), the main buildings will be built into the slope and protected by avalanche defense barriers. In addition, much of the infrastructure will be inside the old mine, which will further limit avalanche risk. While the structures themselves will be protected from avalanches, there is a generalized danger in the valley from multiple slide paths. While this is true of much of San Juan County (and most of Highway 550), our operational plan will put avalanche exposure reduction for our guests and for the public as the highest possible priority. Measures will include gating the road during avalanche season (if that ends up being allowed by the USFS, TBD when they prepare their 2027 Travel Management Plan), especially when we plow the road for access (to be permitted by USFS), ensuring that winter guests are guided by qualified and experienced local guides, and shutting the operation down during times of extreme avalanche hazard. A draft avalanche safety plan (ASP) with recommendations for active avalanche mitigation is included in the attachments and was prepared with input from CDOT, CAIC, and a local heli-skiing company that provides active mitigation.

Garage/Employee Housing Site: The lower site near the Artist Cabin is just inside the edge of the shaded zone of the INSTAAR avalanche map *below* (see pink line). However, the detailed avalanche study showed that this build site was not in an identified avalanche path and was buildable without mitigation. To be extra cautious, we will design the windows and doors of the structure to withstand generalized powder impacts of approximately 40 psf (or 123 mph winds, like those seen in a category 3 hurricane). Note that this kind of window/door is required in every house built in Florida within one mile of the coast, so these materials are readily available.



Geohazards:
The project site property boundaries have been overlaid onto the County Geologic Hazard Maps. The plan sheet is included for your review. According to the County Geologic Hazard Maps, the proposed future lodge appears to be located in an area denoted as TS-talus slope (on the Shelbyville Lode), and the proposed future garage/employee housing structure in an area noted as CSM-colluvial slope.

Rockfall:

Neither of the sites are in the rockfall zones of the County Geologic Hazard map, but the lodge site near the Silver Crown mine portal does lie below a talus slope. To ensure that we were accounting for this possible hazard, the applicant (a licensed geotechnical engineer with over 15 years of relevant experience) had the rockfall hazard at the site modeled. The results indicate that any potential rockfall at the site will be contained by the avalanche defense berms and structures (see the previously submitted rockfall energy and bounce height analysis).

Flood:
Neither of the main build sites are in flood hazard areas.

Wildfire:
Although wildfire is a persistent risk in the San Juan Mountains, both build sites are in low-risk areas. The garage/employee housing site is over 150' from any trees, and the lodge site only has a sparse grove of trees to the North. Regardless, the applicant has contracted with a wildfire specialist to produce a fire safety plan that is included in the attachments. In general it is the overwhelming preference of the applicant to not fell any trees in the area unless absolutely necessary, and to actually add trees to the sites to continue the generalized reforestation of the Mill Creek valley that has naturally occurred since the Chattanooga townsite was abandoned in the early 20th century.

Wetlands:
There are wetlands in the Chattanooga area. The Applicant has delineated both build sites and is working with the Army Corps of Engineers to address wetlands issues and ensure compliance. At the lodge site, rerouting the mine adit drainage will dry up a small portion of non-jurisdictional wetlands, which was coordinated with CDPHE and USACE prior to VCUP construction commencing.

The garage/employee housing at the Bonanza Boy Millsite location has multiple wetlands. The applicant plans to fill a very small portion of those wetlands but also create additional wetlands and also build in a way that minimizes impact to this important wetland habitat. This will be achieved by minimizing wetland filling, using native willow screenings, and installing low-profile pedestrian trail boardwalks to avoid one section of fill. All wetlands construction, including boardwalks, will be conducted with direction from the USACE and relevant local non-profits.

In addition, the stream enhancement planned by Mountain Studies Institute in the lower end of the valley will produce a large area of new wetlands, meaning that the overall project will produce a meaningful net gain of wetland acreage.

Emergency Services:
Emergency services are inherently limited in the backcountry, and the applicant acknowledges emergency services at this site may not be available in a timely manner and may not be available at all. However, prior planning can remove much of the risk associated with remoteness. Multiple forms of communication will be in place at both buildings (Starlink, Satellite Phone/Garmin Inreach, and CB radio) to contact emergency services. The future proposed garage/employee housing structure is close to Highway 550, making access relatively easy when the highway is open. When the highway is closed, the garage will house both vehicles that can travel by road and snowmobiles/snowcats that can transfer people from the lodge or the garage/employee housing to the road closure gate down valley. The lodge is 0.56 miles up USFS 821/CR 15 which presents more difficulty. However, during winter operations the road to the site may be used allowing for two means of transport: a vehicle (with a plow) and a snowcat/snowmobile. This redundancy will allow

transport even if the road is inaccessible by transiting to the valley floor over the snow. In addition, both buildings will be equipped with appropriate fire suppression systems, and even the underground portions of the lodge will have a secondary emergency exit in case the main portal becomes impassable. Lodge personnel will be trained on the emergency services plan, which will include responses to various scenarios (skier becomes injured/buried while Highway 550 is closed, a fire occurs at one of the buildings, an underground accident occurs, etc.). This emergency response plan will also describe lodge operations and closures, required employee training/certifications and gear, guide policies, etc.

Guest will sign waivers acknowledging they will be in avalanche/geohazard areas, and the County will not be liable in the event that emergency services may not be timely/available if they have an emergency while in those areas.

If the County agrees, the applicant will also propose installing an emergency/first aid closet in the garage/employee housing that would be available for EMT and Search and Rescue personnel for any emergencies in the area (not just for those involving guests of the lodge). The applicant's goal with the emergency response plan/infrastructure will be not only to mitigate risk for guests, but also help elevate the overall emergency response capability in the immediate area.

A draft emergency response plan is attached. This plan has been shared with local agency/department directors, including Jim Donovan, Tyler George, Gilbert Archuleta, and Bevan Harris, and will be finalized and periodically updated with input from their agencies.

Historic and Cultural Resources:
The Shelbyville Lode is the location of the proposed VCUP mining reclamation project as well as the proposed future lodge structure. The history of the site includes the Silver Crown Mine (with existing portal), existing mine waste rock pile, draining mine adit, and several wooden structures on the site which have been gone for at least 80 years. The applicant plans to recreate one of the previous structures which will be the proposed future lodge structure. The Army Corps of Engineers noted that the applicant will need to have a consultant prepare a Cultural Resource Survey for this project for submittal to and approval by SHPO (State Historical Preservation Office). Jon Horn of Alpine Archaeological Consultants, a part time resident of Silverton, has prepared that Cultural Resource Survey for submittal to SHPO. His results indicate that the avalanche berms on site are significant. These will not be destroyed during lodge construction (indeed, they are an integral part of our avalanche/rockfall defense system, as they were for the old miners). The waste rock pile itself is also significant and will not be removed as part of VCUP construction. However, the pile will be capped with native rock – thereby changing its appearance – so it will be thoroughly photographed and characterized prior to being capped as part of the VCUP process. Those "before" photographs will be incorporated into the lodge décor and website, but also included on the interpretive sign that will be installed near FSR 821/CR 15 on the way up to the lodge for all to see. There are no existing structures (buildings) on site, with the exception of a historic brick rectangular foundation remnant, which likely once supported a metal boiler (and another similar, smaller, nearby historic brick remnant). Mr. Horn's work has indicated that the building area has been so disturbed over the years (especially in the 1940s) that no significant artifacts remain. Regardless, the lodge design will incorporate the brick boiler foundation into the proposed deck area as an educational mining heritage feature (again, with an interpretive sign). The Applicant has researched the Silver Crown Mine area and the Shelbyville Lode for a few years through work with the Archives and San Juan County Historical Society.

No historical relics/structures were observed on the Bonanza Boy Mill Site (adjacent to the Artist Cabin property), but Mr. Horn has surveyed that site as well. The original mineral surveys, which were previously

submitted to the County, were used by Mr. Horn to evaluate what was once on-site when those were surveyed approximately 100 years ago. The railroad existed in the general Chattanooga area and the historic alignment is being researched at present. In viewing local historic photos (and books such as The Rainbow Route), there does not appear to be any former railroad lines/beds near any of the proposed improvements. As the request of the USFS, Mr. Horn also conducted a cultural resource survey of the entire road leading up to the Silver Crown mine/lodge site. All 3 of those cultural resource surveys are included as attachments.

Elevation at Structure:
The elevation at the VCUP site (and the proposed future lodge structure) is approximately 10,800 feet. That is below 11,000 feet elevation where the County has limits on cabin square footage. The garage/employee housing structure is at approximately 10,300 feet.

Build Site Selections:
One of the best ways to build resilient and safe structures in the mountains is to figure out where the old timers built and build on the same location (or, if possible, restore a historic structure). Those old timers didn't have geologic hazard mapping, Lidar, or the complex 3-dimensional avalanche and rockfall modeling programs that we do today. But they had an extreme level of common sense, and they were in tune with what the environment was telling them (or warning them about).

Both of the proposed build sites meet this best practice. The upper buildings will be on nearly the same footprint as the old Silver Crown mine buildings, and the lower site near the Artist Cabin is close to where the old Chattanooga townsite was. This is not only a safer and more resilient way to choose a site location, it also limits additional disturbance to the environment.

Lodge Building Envelope:
The building envelope for the proposed future lodge structure is located adjacent to the existing Silver Crown Mine portal on the Shelbyville Lode in Mill Creek. The design of the proposed lodge structure and its building envelope were selected to closely emulate the historic structure that was on the site a century ago. The structure location was also selected in conjunction with the avalanche expert. The back of the structure is proposed to be built up against/into the hillside. There are some existing avalanche berms at the back of the previous structure which will be maintained. Adjacent to the lodge structure is the Silver Crown Mine, and part of the proposed lodge is designed to extend into the mine, including some of the mechanical and water treatment facilities as well as five of the guest rooms.

Garage/Employee Housing Building Envelope:
The building envelope for the proposed future shed/employee housing structure is located near the existing "Artist Cabin" (Stern's vacation rental) accessed from Highway 550. This area includes some fragmented wetland habitat, with the wetlands being non-contiguous, interspersed with a series of upland "islands" that are buildable. The applicant and their wetlands consultant evaluated each of the possible build sites using a decision matrix, examining the cost to build, the distance of wetlands crossing, the visibility of the structure from the road, the impact on the views for people renting the Artist Cabin, and the ability to screen the structure. The build site on the Southwest corner of the lot, farthest from the road and also farthest from the Artist Cabin scored highest overall. Note that lower numbers are more favorable in this scoring matrix.

Build Site (Location in lot)	Cost to Build	Wetland Crossing Distance	Visibility from Road	Visibility from Artist Cabin	Screenability (with vegetation)	Parking Capacity	Total
#1 (N)	1	1	4	3	4	4	17
#2 (Center)	2	2	3	4	3	1	15
#3 (S)	3	3	2	2	2	1	13
#4 (SW)	4	4	1	1	1	1	12

A full wetlands delineation has been submitted to the USACE and the applicant and the Corps are discussing plans and options. Access using "permeable" road building techniques on the upland areas on the property will prevent unnecessary wetland filling, and also allows natural water flow so that no downstream wetlands are inadvertently dewatered.

Structure Sizes:
The proposed future lodge structure will emulate the historic structure that once existed on the Shelbyville Lode. The approximate footprint of the proposed future lodge structure is 30 feet x 180 feet. The proposed future garage/employee housing structure which will be located close to the Artist cabin, is currently being designed and has approximate footprint of 51 feet x 42 feet (2,142 square feet of footprint) with a total (two-story) square footage of less than 5,000 sf. The applicant will submit detailed plans to the County for further review this fall, and no construction of any proposed future structures will commence before 2025.

Structure Heights:
The height of the proposed future lodge structure (measured from the tallest part of structure to where the adjacent ground surface elevation will be the lowest, which yields the largest height measurement) is designed as 35 feet or less. The height of the proposed future shed/housing structure is also designed as 35 feet or less.

Structure Styles:
The Applicant has been working for the past few years with a local architect – with advice from some members of the San Juan County Historical Society – to design the proposed future lodge structure to be close to the buildings that once existed on the Shelbyville Lode. The previous structure may have been sided with tar paper and batt wood strips. The applicant is proposing locally sourced, rough-sawn wood board siding instead of the historically accurate tar paper, along with rusted/corrugated metal and natural stone. The proposed garage/employee housing structure to be located at Chattanooga would be constructed of rough-sawn wood with rusted metal. Conceptual plans for both structures are included in this application, and detailed plans for both of the proposed future structures will be submitted to the County again at the Final PUD hearing and to the Building Department prior to construction. No structural construction is proposed prior to 2025.

Building Plans:
Draft building plans for the proposed future lodge and the proposed future garage/employee housing structure are included in this submittal for review. No structural details are proposed at this time; the Applicant plans to submit those plans at a later date for further County review.

Building Materials:
Photos of the proposed building materials provided by the Applicant and Architects were previously submitted. The conceptual building materials for the proposed future lodge structure and the proposed

future shed/housing structure generally consist of the following: Exterior locally sourced rough-sawn wood boards, rusted metal and/or galvanized metal, building-integrated rusted metal colored low reflectivity roof mounted solar panels, and native stone.

Greenhouse:
The Applicant has a small 3-season greenhouse proposed in the future adjacent to the proposed future lodge structure for growing salad greens and culinary herbs for use at the Lodge. This building will have some glass but will be sited at the North end of the lodge complex and as such it is not expected to be at all visible from Hwy 550.

Sauna:
The Applicant has a small wood-fired sauna structure proposed attached to the proposed future lodge structure.

Underground Hydro House/Camping Restrooms:
The Applicant proposes a small structure to house the micro-hydro turbines as shown on the plans. This structure is approximately 1,200 feet to the East of the Lodge and will be built completely into the hillside adjacent to Mill Creek. As this area is prone to avalanche events, the only external wall will be constructed of reinforced concrete with a reinforced steel door and will resemble a "bunker." The path to the hydro house will follow the historic road on the site, meaning that very little disturbance will be required to provide access (other than vegetation clearing). Half of this underground structure will house the hydro facilities, with the rest housing a mens and womens shower and restroom for the eight nearby camping pads. This restroom will only be operational in the late spring through early fall.

Additional Outbuildings:
A restroom and shower facility for use of the primitive campers will be installed adjacent to or nearby the garage/employee housing facility. Details of this structure are provided.

Portal Improvements:
As part of the VCUP work, the Applicant plans to make a wood and metal entrance/door at the existing adit/portal of the Silver Crown mine on the Shelbyville Lode, using similar materials and methods as the old-time miners. The design will appear similar to a semicircular wooden barrel and will utilize timbers and repurposed steel sets sourced from a nearby mine. This portal will be integrated into the main dining room of the lodge, and will not be visible from the outside.

Underground Work and Safety:
The lodge facility at the Silver Crown mine will have multiple rooms that will be built into the old mine. As such, underground safety is of utmost importance. The underground design has been completed by Brian Briggs, P.E., former CEO of Ouray Silver Mines, and will be constructed by miners with decades of experience in the San Juans and beyond (most coming to work on this project from the Revenue-Virginius after they were laid off there). In addition, the applicant has been working with DRMS to permit the underground infrastructure as a "tourist mine." Although DRMS has taken the stance that this project is underground civil construction – not mining – we have mutually agreed that the safety procedures outlined in the DRMS "tourist mine" designation would be a conservative approach to underground safety for our guests.

During the VCUP project, the Silver Crown Mine portal has been reopened, with an entrance to be constructed using timber and steel. The mine will be used as the rock fill source for capping a portion of the existing mine waste rock pile and for fill for the wire gabion baskets to stabilize the slopes of the waste rock

pile. The rock competency inside the mine has been investigated by a geotechnical engineer and is very suitable for the proposed construction. The Applicant plans to install five guest rooms that will face into the Mill Creek gorge, each having a glass wall to provide a view of the Mill Creek gorge and falls. That glass will be recessed into the cliff edge and will not be visible from Highway 550, any nearby County Roads, or any designated trails in use today.

Future Primitive Dispersed Camping:
Future proposed walk-in designated dispersed tent camping spots are shown on the conceptual PUD plans. The applicant assumes that the County would require at least a basic toilet/shower services/facility such as a "bathhouse." The campground host and the water/sewer service/bathhouse would conceptually be located near the future proposed garage/employee housing structure, as shown on the attached plans.

Recreation Improvements:
In the future the applicant would like to construct the following: a "via ferrata" fixed rope/cable system (hiking trail in a portion of Mill Creek for hikers on steep terrain to be clipped in), on-site trail improvements, and potentially guided hiking/ice climbing and a possible small ice park. Trail and via ferrata alignments are shown on the attached plans.

Gates:
The following gates are proposed as part of this project:

Avalanche safety gate: The Applicant and the Forest Service are discussing a proposed avalanche safety gate on USFS Rd. 821/CR 15 just off of Highway 550 which could be closed in the event of high avalanche hazard, allowing pedestrians/skiers to enter, but not passenger vehicles. If the Applicant plows FSR 821 (which is not currently plowed or accessible in the winter) then the Mill Creek area becomes more accessible to motorists in a way that it never has before. A gate close to Highway 550 could warn those in vehicles of high avalanche hazard while still permitting the normal pedestrian/ski traffic seen in the area. Based on USFS input, the installation of this gate would not be before their next travel management plan was studied, which will not occur before 2027.

Lodge driveway gates: gates are proposed where the lower driveway into the lodge starts off of FSR 821/CR 15 and where the upper driveway into the lodge turns off of FSR 821/CR 15. Neither of these 2 gates will prevent traffic on FSR 821/CR 15, they will only prevent public access to the lodge itself. These gates will be located at least 30 feet from the edge of the FSR 821/CR 15 driving surface and will not block access/turnaround and when a vehicle is parked to open/close the gate.

Temporary construction gate: A temporary gate and a sign describing the VCUP has been installed and kept closed during active VCUP construction. This gate is in the approximate location of the lower lodge gate. This gate will only be closed when construction is active and will be removed when the VCUP is completed in the fall of 2024.

No gates are proposed at the garage/employee housing site down in the valley near the Artist Cabin.

Details of the appearance of the gates are included in the attachments.

Signage:
The Applicant is working with the Forest Service to install a sign (and later a gate, as mentioned above) on the lower part of FSR 821/CR 15 which could be used to warn the public in the event of high avalanche

hazard. If plowing occurs, then the Mill Creek area becomes more accessible thus a sign near the entrance of this road could warn those in vehicles of high avalanche hazard while still permitting pedestrian/ski traffic if a gate is not allowed. During VCUP construction (2023 and 2024) a sign has been installed near the temporary construction gate (at the turnaround area) describing the VCUP construction and timeline. Interpretive signs describing the history of the Silver Crown mine is also proposed at the upper turnaround location as well as an interpretive sign at the Bonanza Boy Mill Site describing the importance of the alpine wetland ecosystem. All proposed signs will be subject to sign permit applications processed through the County Building Department.

Future Proposed FSR/County Road Realignment:
Realignment of approximately 150' of FSR 821/CR 15 is shown in the USFS permit application. The applicant will comply with any requirements to grant the USFS and/or the County applicable road easements where the Forest Service Road 821/CR 15 crosses through the applicant's properties.

Summer Parking:
Summer parking will occur at the proposed future lodge structure, and at the proposed future garage/employee housing structure for those guests that do not arrive in a 4WD vehicle and need a 4WD shuttle to the lodge. Future summer campers may also additionally utilize the parking lot at the bottom of Mill Creek Road and possibly the parking lot between the entrance to FSR 821/CR 15 and the Bonanza Boy Mill Site (which is owned by the applicant). The aggregate parking capacity at these four sites will be more than enough to accommodate any possible summer demand.

Winter Parking:
Winter parking is expected to occur only at the proposed future garage/employee housing structure when avalanche season begins. The parking area will not be located in an avalanche area (as per the previously supplied maps included with the avalanche study). Although the capacity for parking at this lower location is smaller than the aggregate parking available in the summer, the operations of the lodge will be scaled down as well (no winter camping is contemplated, for example).

Snowcat/BV 206/4WD Shuttle:
A 4WD vehicle will shuttle guests in the winter to the lodge if the road is plowed and accessible. If the road is not plowed, the 4WD vehicle will shuttle the guests to the parking lot at the bottom of FSR 821/CR 15, where they will transfer to a snowcat or BV 206 personnel carrier the final way to the proposed future lodge structure. The snowcat/BV 206 would be stored at the lodge and/or the garage at the Bonanza Boy Mill Site and would be occasionally tracked down the shoulder of the Highway between the Bonanza Boy Mill Site and Mill Creek.



BV 206 Personnel Carrier

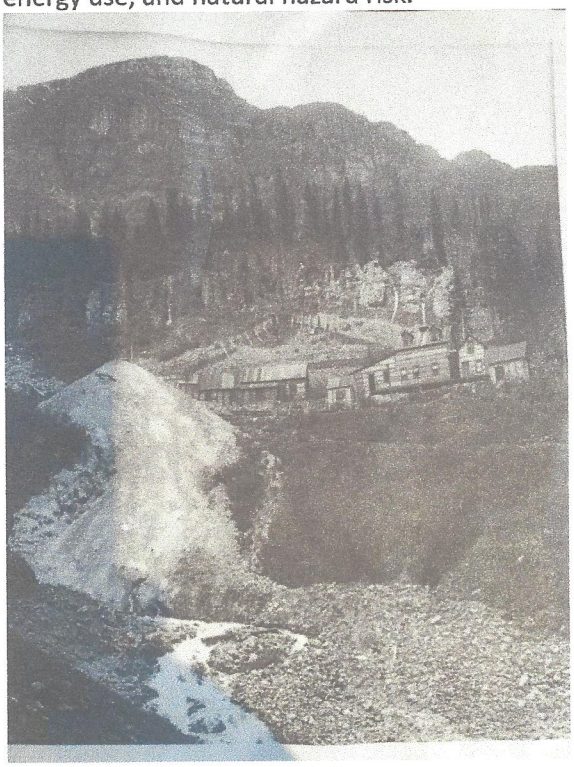
Plowing:
Conceptually, plowing could be utilized in the future to provide winter access to the proposed future lodge structure. Plowing of a County Road (such as USFS Rd. 821/CR 15) typically requires a San Juan County plowing permit. The USFS would also need to approve the plowing concept, which they are reviewing, and at times or alternately a snowcat/BV 206 could be used instead of/in addition to plowing.

Motorized/Nonmotorized:
Employees at the site may utilize ATVs and snowmobiles to access various portions of the property for maintenance, for hauling supplies, and for emergency purposes (like evacuating a guest when Highway 550 is closed). However, the Mill Creek Valley is small, steep, and relatively quiet (aside from Highway 550 traffic noise). The applicant aims to keep it that way and does not anticipate allowing guest use of ATVs or snowmobiles or other motorized vehicles. In addition, where feasible electric vehicles will be utilized due to their relatively quiet operation. Public use of FSR 821/CR 15 for dirt bikes, ATVs, OHVs, etc. will of course be allowed, but the applicant does not anticipate allowing any use of public motorized vehicles on private land and will discuss adding language to any proposed signage with the USFS and the County to encourage motorized vehicles to stay on designated roads only.

Mine Tourism:
Conceptually, the PUD plans include that mining heritage tourists will be allowed inside the proposed mine if they would like to view the underground workings. This would require permitting and insurance similar to the Old Hundred Mine Tour. Since the mine portal is currently blocked, the extent of the workings (and the attractiveness as a mine heritage tour site) is unknown. However, the applicant has already worked with DRMS and will permit the mine as a "tourist mine" for safety and inspection purposes regardless of whether the underground workings are conducive to full-scale tours or not.

Architectural Design Concepts:

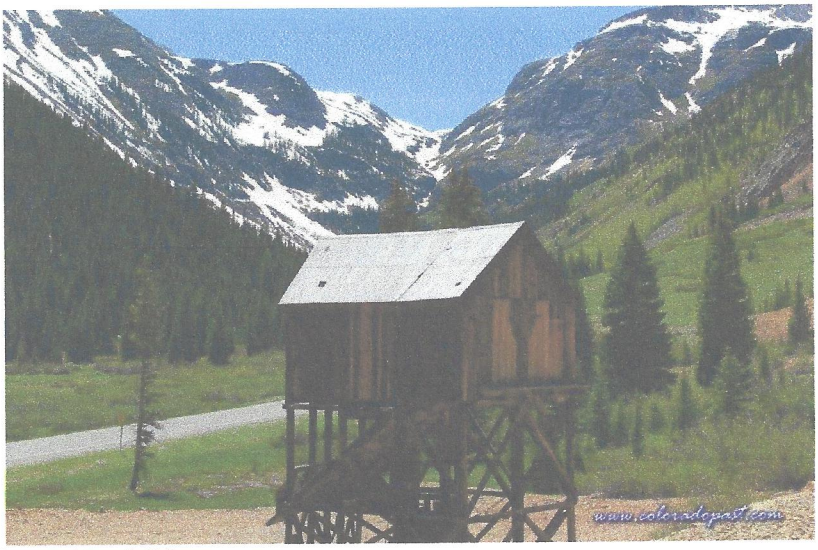
The photo below is from around 1912 of the mine buildings around the Silver Crown mine. Those buildings have been gone for decades (apparently, they were cannibalized, with anything remaining burned over the years). The applicant is excited to bring them back. They won't be perfect replicas, but the photo below is the guiding light for design. While the interiors and the energy systems will leverage cutting edge technology, the exterior look and material selection will be something that miners from the 1910s would immediately recognize. In addition, much of the infrastructure for the lodge will be underground, which limits visual impact, energy use, and natural hazard risk.



For the lower structure near the Artist Cabin, historic photos of Chattanooga were the guide, in addition to making sure that the look fits with the historic ore bin across the road and the Artist Cabin adjacent.



Chattanooga Townsite



Silver Ledge Load Out Building

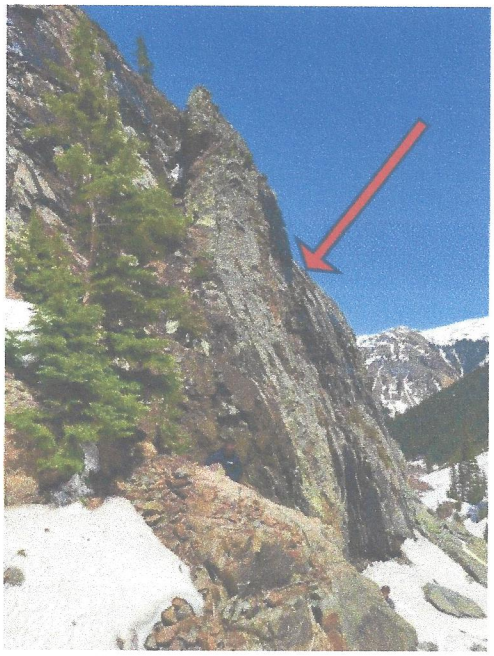
Tommy Hein, an architect based in Telluride, has developed a site plan and design for the structures. The lodge and the garage/employee housing will be timber-framed structures that will be constructed to match – as closely as possible – structures that existed on the sites in the past. Exterior materials will be materials that would have been familiar to the old-timers, including rusted and galvanized metal, rough-sawn wood, and natural stone. Conceptual building plans and ideas have been reviewed with the San Juan Historical Society for input, and the buildings will also be screened as much as practical using native vegetation. To the greatest possible extent, re-purposed and local materials (especially wood and stone) will be used in the construction. Windows and other materials will be low reflectivity in design. The sole exception to the use of historically accurate materials will be the roofs of the structures, which will be made up of low-profile, building-integrated solar panels that are colored to match a rusty metal look. Traditional black or blue solar panels would not fit the aesthetic of this site and will not be used. Thankfully, new technology from Europe allows for the installation of a completely solar roof without sacrificing aesthetics, and this technology will be used on both buildings. The photo below shows an installation of rusty orange solar panels on a historic

structure in Europe. These panels can also be integrated into the roof itself to eliminate any gaps and look seamless, much like a rusty metal roof, which is how we would install them on the buildings at this site. Note that these panels would be over 2,200' away from Highway 550 in the case of the lodge and emplaced on the section of the roof facing away from Highway 550 in the case of the garage/employee housing, so the visual impact of the solar panels will be minimized even further.



Additional Portals/Openings/Visibility: The only other visible portions of the construction will be the portals of the mine, of which there will be eight: the main portal that will be inside the lodge dining room and not visible; two emergency escape doors that will again be made out of rusted steel (preferably a re-purposed door), and 5 "waterfall view" rooms that will have recessed glass facades and hinged rusty steel decks. The main mine portal will be hidden inside the dining/common room, but the other 7 openings will be tucked into the Mill Creek Gorge and not visible at all from any portion of Highway 550, FSR 821/CR 15, or any trails that currently exist in the area.





Waterfall Room Locations

Exterior lighting will only be employed to safely light entry doors and deck areas while the structures are occupied. Lighting will promote a dark sky environment and will comply with section 4-110.17 of the land use code.

Private and Public Access:
Access to the lodge will be via USFS Road 821/County Road 15, which goes directly to the site. The applicant has met with the USFS to confirm that no special permission is required to use this road (even for commercial purposes). However, upon the suggestion of the USFS, a road maintenance agreement has been submitted to the USFS allowing the applicant to conduct minor realignment, maintenance, plowing, and eventual safety gating of the road (see attached). During avalanche season (November-May) the applicant proposes to gate and close the road to vehicular traffic with the exception of authorized users (including federal, state, and county government agencies, EMS, etc.). The road is currently closed naturally by snow from November-May, so this plan (much like the way the Camp Bird Road to the Revenue-Virginius Mine is managed) will not reduce the current level of public access to the site, but *will* reduce the safety risk associated with enabling random vehicles to travel the road during avalanche season.

The driveway to the garage/employee housing will be constructed using local gravel to the greatest extent possible, and all minor disturbed areas will be reclaimed using native vegetation and seed.

No foot trails exist on the property save for portions of isolated paths constructed by the old miners that have long since been abandoned, and none of the activities of the applicant will restrict the use of USFS 821/CR 15 for public access to the Silver Cloud Mine. As an avid backcountry skier and hiker, the applicant will also endeavor to allow reasonable access by the public across their lands to hike or ski in the area but does not anticipate allowing public motorized access across private lands (in order to preserve the sensitive vegetation in the area).

Additional Voluntary Cleanup (VCUP) Details:
The first phase of this project is a Voluntary Cleanup (VCUP) of the mine waste rock pile at the Silver Crown Mine, which is currently about 30% complete. The VCUP will take one more construction season, and has the following components:

1. Rerouting of the mine adit discharge water away from the waste rock to prevent any waste rock contaminants from leaching into Mill Creek (complete);
2. Capping of the mine waste rock with inert native stone. Most of this native stone will be generated through the underground construction in the Silver Crown Mine. On the slopes of the waste rock pile, a reinforced slope consisting of geogrid-reinforced steel wire baskets filled with native rock will be placed (partially complete);
3. Prevention of mine waste rock from the upper waste rock pile from continuing to fall into Mill Creek (partially complete).

Stream Habitat Improvements:
The stretch of Mill Creek from the elevation of the lodge almost to the intersection of Highway 550 is fairly sterile for most of its length, with waste rock and waste rock drainage entering the creek in multiple locations. This section will undergo a stream restoration/enhancement process that will be designed by the Mountain Studies Institute and conducted in coordination with the USFS, Trout Unlimited, the USACE, and the Colorado Division of Wildlife and the US Fish and Wildlife Service to improve the quality of Mill Creek by:

1. adding sinuosity, pools, and J-hooks to the stream;
2. improving and expanding the wetlands and vegetation on the site;
3. more-than-fully mitigating any impacts of the micro-hydro generation;
4. minimizing mine waste rock from entering the creek; and
5. (hopefully) successfully re-introducing San-Juan lineage native cutthroat trout into the creek.

The goal of the applicant is that this project will not only improve the beauty of Mill Creek, it will also reintroduce species that were lost over a hundred years ago and make the stream more resilient to changing climactic conditions that have resulted in more extreme wet and dry periods in the area.

Below are initial notes from Trout Unlimited on the potential enhancement of Mill Creek. Much of the information needed to finalize will take years, perhaps, to gather, and some of the actual enhancement work will be based on conditions encountered in the field, but these initial notes should give the County a picture of the general concept:

"As shown in the screen shot below, the blue line represents approximately 900 linear feet of realignment that could occur. This alignment is approximate, but given the upstream bend and density of downstream vegetation, this seemed to work nicely.

- *The feasibility of something like this will need to be verified with LiDar, field survey, or any other elevation data you have available. The valley slope, and current slope of beginning and end tie in points, will determine how sinuous the proposed channel could be. For example, if up and downstream tie in reaches are fairly steep, longer meander bends would likely be short circuited before energy can be dissipated. This would be especially true if valley slope wouldn't support it. However, after walking up that portion of the floodplain, there is a noticeable change in slope.*
- *The idea with realigning the stream to the NW would be the current density of willows and other riparian vegetation. The current path through the toe of the scree slope doesn't offer much for habitat, shade, or planform.*

        - *This would also give a buffer from avalanches on that adjacent slope.*
    - *An emphasis on vegetation through this reach will be paramount for long term stability. There is a healthy source of willows across the floodplain that could be transplanted and used in future restoration phases.*
- *The portion of Mill Creek upstream of the proposed realignment could use some large boulder structures to help step flow, create plunge pools, and create more step-pool properties. These larger structures might also help attenuate flows to allow for some of the proposed downstream measures, while also providing stability below the mine area.*
- *Consider excavating mine waste along Mill Creek at toe of slope and consolidating them within larger pile footprint. This would reduce long-term O&M and allow for more natural reveg along stream banks.*
- *Benthic studies should be completed along the reach prior to consideration of any fish stocking or introduction of native species. MMI and bug counts will let you know if the food source is there to support fish. Also, any future stream restoration would hopefully encourage that macroinvertebrate community.*
    - *Fish barriers need to be evaluated at the downstream end of the project. This could be natural chemical barrier like the discharging mine* [note: the "discharging mine" mentioned is a mine near where Mill Creek gets close to Hwy 550 at the Chattanooga curve and is on USFS land]*, or installation of a structural barrier when stream restoration takes place."*



Also attached is the proposal for remediation from Mountain Studies Institute which was built upon the concepts outlined by Trout Unlimited.

PROJECT NARRATIVE

Preliminary Plan for Proposed Silver Cloud Lodge/PUD
Prepared by Applicant (5/10/2024)

Parcel Consolidation:
It is the policy of San Juan County to limit each property owner to one dwelling regardless of the acreage owned. This policy has historically been carried out via parcel consolidation. The applicant willingly accepts this restriction and will consolidate the six privately-owned parcels which have proposed improvements as part of this proposed PUD

Historic Impact:
One of the applicant's main goals with this project is to not only preserve but to rebuild some of the rich history of the area. In particular, the applicant plans to reopen the collapsed Silver Crown Mine portal, rebuild some of the structures at the site using historic photos for inspiration, and also educate their guests about the history of the area. At the applicant's request, a review of this project's impact to the nearby historic artifacts was completed prior to this application being filed. The Historic Society was also consulted about building design, material choices, and other details.

Health Impact:
Mining activity at the Silver Crown left behind a large waste rock pile and an adit that is producing water at a rate of 20-30 gpm that was draining through the waste rock into Mill Creek, with some of the waste rock also falling directly into the creek at times. The goal of the applicant is to develop this site in a way that not only prevents further destruction, but in a way that tangibly makes it better, cleaner, more beautiful, and more accessible to folks coming to San Juan County. The first step in this process was to engage with the CDPHE to institute a voluntary cleanup (VCUP) of the mine waste. Although this VCUP is the first stage of site development, it can't be considered without the overall site plan as a whole. For example, opening the mine and completing underground construction there – as well as digging retaining walls for the lodge – is the activity that will generate the clean fill material to cap the mine waste. Installing the water treatment for potable water inside the mine and rerouting the adit water for domestic use is the activity that will prevent the adit water from continuing to drain through the waste rock pile. Rehabilitating Mill Creek for the introduction of San Juan lineage native cutthroat trout will also include preventing more waste rock from polluting Mill Creek.

The applicant has taken every opportunity to engage with and seek approval from local, State, and Federal authorities and has received valuable insight and guidance throughout this multi-year planning process.

Road Impact:
The lodge is served by USFS 821/CR 15, and the applicant has submitted a permit to the USFS to maintain, plow, and slightly improve and reroute a portion that road (see attached permit). The garage/employee housing structure will require a new driveway.

Local Employment and Buy Local:
The construction process will employ multiple individuals from San Juan, Ouray, and San Miguel Counties. Notably, all of the underground work will be completed from miners that were laid off when the Revenue-Virginius Mine closed in 2021. When the lodge is operational, the applicant anticipates having a full-time manager/avalanche safety expert, a housekeeper, and a chef, all housed either the lodge, the garage/employee housing, or in Silverton. Guiding services will be subcontracted to local guide agencies in San Juan, Ouray, and San Miguel Counties. Depending on need, the guides will either come in for the day or be housed at the lodge and/or garage/employee housing for overnight programs. Food will be almost exclusively sourced from farms on the Western Slope, with some of the herbs and salad ingredients being grown on-site in the small solar greenhouse. All other services will be outsourced with a preference given to local service providers in San Juan, Ouray, and San Miguel Counties.

Information regarding County Regulations for: 5-106 MINE AND MILL TAILINGS AND DUMPS
The information required for compliance with this section should be fully contained in the VCUP permit approved by CDPHE. If the County has additional questions, the applicant will be happy to provide any required information.

List of Experts and Authorities Consulted for this Project:

The applicant has met on site with the following Authorities/Experts:

Mark Rudolph, Colorado Department of Public Health and Environment
Kirsten Brown, Colorado Department of Reclamation, Mining, and Safety
Lew Sovocool, United States Forest Service (Previous Lands & Realty Specialist, San Juan National Forest, Columbine Ranger District)
Denise Kusnir, United States Forest Service (Previous Lands & Realty Specialist, San Juan National Forest, Columbine Ranger District)
Jason Willis, Colorado Abandoned Mine Lands Program Manager, Trout Unlimited, Inc.
Lucas West, Environmental Protection Specialist Minerals Program (DMME), Grand Junction Field Office

The applicant has met with the following Authorities/Experts in person or via video conference:

Fonda Apostolopoulos, P.E., Colorado Department of Public Health and Environment
Bev Rich, Chairman, San Juan County Historical Society
Fritz Klinke, San Juan County Historical Society
Rebecca Smith, Forest Lands Program Manager, San Juan National Forest
Erin Christensen, United States Forest Service
Cody Jones, Civil Engineering Technician, United States Forest Service, San Juan National Forest, Supervisors Office
Tucker Feyder, Regulatory Project Manager, Southern Colorado Branch, U.S. Army Corps of Engineers
Brandon Miller, United States Fish and Wildlife Service
Jim White, Colorado Parks and Wildlife

The following individuals and agencies will be kept informed of the project and provide peer review of the Mill Creek Stream Enhancement portion of the project:

Ty Churchwell, Bonita Peak Mining District Community Advisory Group

The following consultants have provided services to generate this application:

Lisa Adair, P.E., Engineering Mountain
Jeff Kurtz, Ph. D, GeoSyntec
Jon Horn, M.A., RPA, Alpine Archaeological Consultants, Inc.
Brian Briggs, P.E., BK Briggs and Associates
Mary Presecan, P.E., PMP, LRE Water
Courtney Shephard, J.D., Brownstein Hyatt Farber Schreck, LLP
Nicole Pieterse, J.D., Russell & Pieterse, LLC
Kurtis Duncan, P.E., Slopeside Energy

Ken Gardner, P.E., P.L.S, Gardner Hydro
Dave Bulson, P.L.S., Bulson Surveying
Bill Coughlin, Western Stream Works
Jake Kurzweil, Mountain Studies Institute
Tommy Hein, Tommy Hein Architects

DATE FILED: December 1, 2023 2:17 PM
FILING ID: 767632785F8EE
CASE NUMBER: 2023CW3054

DISTRICT COURT, WATER DIVISION 7, COLORADO Court Address: 1060 East Second Avenue Durango, Colorado 81301 Phone Number: (970) 247-2304	
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **BONANZA BOY, LLC** **IN SAN JUAN COUNTY**	▲ COURT USE ONLY ▲
ATTORNEYS FOR APPLICANT BONANZA BOY, LLC BROWNSTEIN HYATT FARBER SCHRECK, LLP Wayne F. Forman, #14082 Courtney M. Shephard, #47668 675 15th Street, Suite 2900 Denver, CO 80202 Phone: (303) 223-1100 Fax: (303) 223-0920 E-mail: wforman@bhfs.com cshephard@bhfs.com	Case No: 2023CW3054 Div: 7 Ctrm:

AMENDED APPLICATION FOR CONDITIONAL SURFACE WATER RIGHTS, A CONDITIONAL GROUNDWATER RIGHT, CONDITIONAL WATER STORAGE RIGHTS, AND PLAN FOR AUGMENTATION

1. Name, Address, and Telephone Number of Applicant:
Bonanza Boy, LLC ("Bonanza Boy")
P.O. Box 992
Montrose, CO 81402
Phone: (303) 909-6083

2. Description of Application: Bonanza Boy seeks new conditional surface water rights, a conditional groundwater right, conditional water storage rights, and a plan for augmentation for beneficial uses associated with the Silver Cloud Lodge located in Chattanooga, Colorado.

3. Conditional Surface Water Rights:

A. Silver Cloud Mine Adit:

i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A.

ii. Source: Groundwater tributary to Mill Creek.

iii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission.

1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; and developing engineering plans for the Silver Cloud Mine Adit and site plans for the Silver Cloud Lodge.

2. Date Water Applied to Beneficial Use: N/A, conditional appropriation.

iv. Amount: 0.25 c.f.s, conditional.

v. Uses: Commercial, domestic, fire fighting, power, ice making, piscatorial, and wildlife, with the right to reuse and successively use to extinction.

B. Mill Creek Diversion:

i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A.

ii. Source: Mill Creek, a tributary of the Animas River.

iii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission.

1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; and developing engineering plans for the Mill Creek Diversion and site plans for the Silver Cloud Lodge.

2. Date Water Applied to Beneficial Use: N/A, conditional appropriation.

iv. Amount: 3.0 c.f.s, conditional.

v. Uses: Commercial, domestic, fire fighting, power, piscatorial, wildlife, storage, ice making, and recreation, with the right to reuse and successively use to extinction.

4. Conditional Groundwater Right:

A. Bonanza Boy Well:

i. Legal Description: SW¼ of the NE¼ of the NE¼ of Section 27, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A.

ii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission.

1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Bonanza Boy Well and site plans for employee housing associated with the Silver Cloud Lodge.

2. Date Water Applied to Beneficial Use: N/A, conditional appropriation.

iii. Amount: Cumulative annual pumping will not exceed 0.5 acre-feet, and the pumping rate will not exceed 15 gallons per minute.

iv. Uses: Commercial and domestic.

v. Permit No.: Not applicable. Bonanza Boy will apply for a well permit at a later date.

5. Conditional Storage Rights:

A. Silver Cloud Pond:

i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A.

ii. Source: Mill Creek and tributaries to Mill Creek.

iii. Point of Diversion: The Silver Cloud Mine Adit (*see* Paragraph 3.A) or the Mill Creek Diversion (*see* Paragraph 3.B).

iv. Surface Area: 0.3 surface acres.

v. Total Capacity: 0.65 acre-feet.

vi. Type: Lined with bentonite, off-channel.

vii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission.

1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Silver Cloud Pond and site plans for the Silver Cloud Lodge.

2. Date Water Applied to Beneficial Use: N/A, conditional appropriation.

viii. Amount: 0.65 acre-feet per year, conditional, subject to as-built storage capacity, with a right to fill and successively refill at a rate of 3.0 c.f.s. from Mill Creek.

ix. Uses: Commercial, piscatorial, fire fighting, and augmentation.

B. Silver Cloud Ice Park:

i. Legal Description: SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A.

ii. Source: Mill Creek and tributaries to Mill Creek.

iii. Point of Diversion: The Mill Creek Diversion (*see* Paragraph 3.B).

iv. Silver Cloud Ice Park Operation: Bonanza Boy will divert water from Mill Creek and pump the water to the Silver Cloud Ice Park. Bonanza Boy will use a system of up to 10 sprinklers between October and March to make artificial ice, and will store the Mill Creek water in the artificial ice until it melts. Bonanza Boy will successively use the return flows that accrue to Mill Creek as a source of augmentation water, as explained in Paragraph 6.

v. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission.

1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Silver Cloud Mine Adit, Mill Creek Diversion, and the Silver Cloud Ice Park; and developing site plans for the Silver Cloud Lodge.

2. Date Water Applied to Beneficial Use: N/A, conditional appropriation.

vi. Amount: 0.022 c.f.s.

vii. Uses: Recreation, ice making, storage, and augmentation.

6. Plan for Augmentation:

A. Purpose: The purpose of the plan for augmentation is to permit out-of-priority diversions of the Silver Cloud Adit, Mill Creek Diversion, and Bonanza Boy Well, and to replace evaporation from the Silver Cloud Pond and caused by diversions for artificial ice making at the Silver Cloud Ice Park.

B. Structures to be Augmented: Silver Cloud Adit, Mill Creek Diversion, Bonanza Boy Well, depletions caused by out-of-priority diversions for artificial ice making at the Silver Cloud Ice Park, and evaporation from the Silver Cloud Pond.

C. Water Rights to be Used for Augmentation:

i. Silver Cloud Pond: *See* description in Paragraph 5.A.

ii. Silver Cloud Ice Park Return Flows: Bonanza Boy proposes to replace a portion of its out-of-priority depletions with the return flows generated by the production and subsequent melting of artificial ice formed in the Silver Cloud Ice Park. Bonanza Boy will quantify the return flows generated by artificial ice making and will successively use the return flows for the purpose of augmenting out-of-priority depletions.

iii. Animas Service Area Water Right: Bonanza Boy intends to use an increment of the Animas Service Area ("ASA") water right decreed in Case No. 06CW127 to cover out-of-priority depletions from the following uses: pumping from the Bonanza Boy Well if drilled and utilized pursuant to a non-exempt well permit, and surface diversions for domestic uses, pond evaporation, commercial uses, power, wildlife and piscatorial uses, ice making, recreation, and fire fighting. The increment of the ASA water right referenced herein is jointly owned and controlled by the Southwestern Water Conservation District ("SWCD") and La Plata County. Bonanza Boy acknowledges that any use of the ASA water right shall occur only with the written approval of SWCD and La Plata County, and in a manner that is consistent with the terms and conditions of such approval and the 06CW127 Decree.

D. Approximate Replacement Requirements: 1.5 acre-feet per year, subject to further analysis, as well as actual diversions and return flows.

E. General Operation of the Plan for Augmentation: Historically, water right calls on the Animas River and its tributaries have been rare. This plan for augmentation is a proactive effort designed to ensure the continuous diversion and use of water by Bonanza Boy to the extent there may be future calls by water rights senior to the conditional water rights described in this Application.

7. Name and address of owners of the land on which the structures are or will be located, upon which water is or will be stored, and upon which water is or will be placed to beneficial use: Applicant Bonanza Boy is the owner of land on which all structures are and will be located, water will be stored, and upon which water will be placed to beneficial use. Bonanza Boy's address is listed in Paragraph 1.

8. Requests for Relief:

A. Bonanza Boy requests a decree granting the new conditional surface water rights, groundwater right, and water storage rights described in Paragraphs 3, 4, and 5 of this Application. For any conditional water rights requested by this Application that are put to beneficial use during the pendency of this application, Applicant seeks a decree awarding absolute water rights for those water rights as to the completed beneficial uses.

B. Bonanza Boy requests a decree approving the plan for augmentation described in Paragraph 6 of this Application.

C. Bonanza Boy further requests such additional relief as the Court deems necessary and appropriate to further the purposes of the rights requested herein.

Dated: December 1, 2023.

BROWNSTEIN HYATT FARBER SCHRECK, LLP

/s/ Courtney M. Shephard
Wayne F. Forman, #14082
Courtney M. Shephard, #47668

ATTORNEYS FOR APPLICANT
BONANZA BOY, LLC

VERIFICATION

I declare under penalty of perjury under the law of Colorado that the foregoing is true and correct.

Executed on the 30 day of November, 2023, at Denver, Colorado.

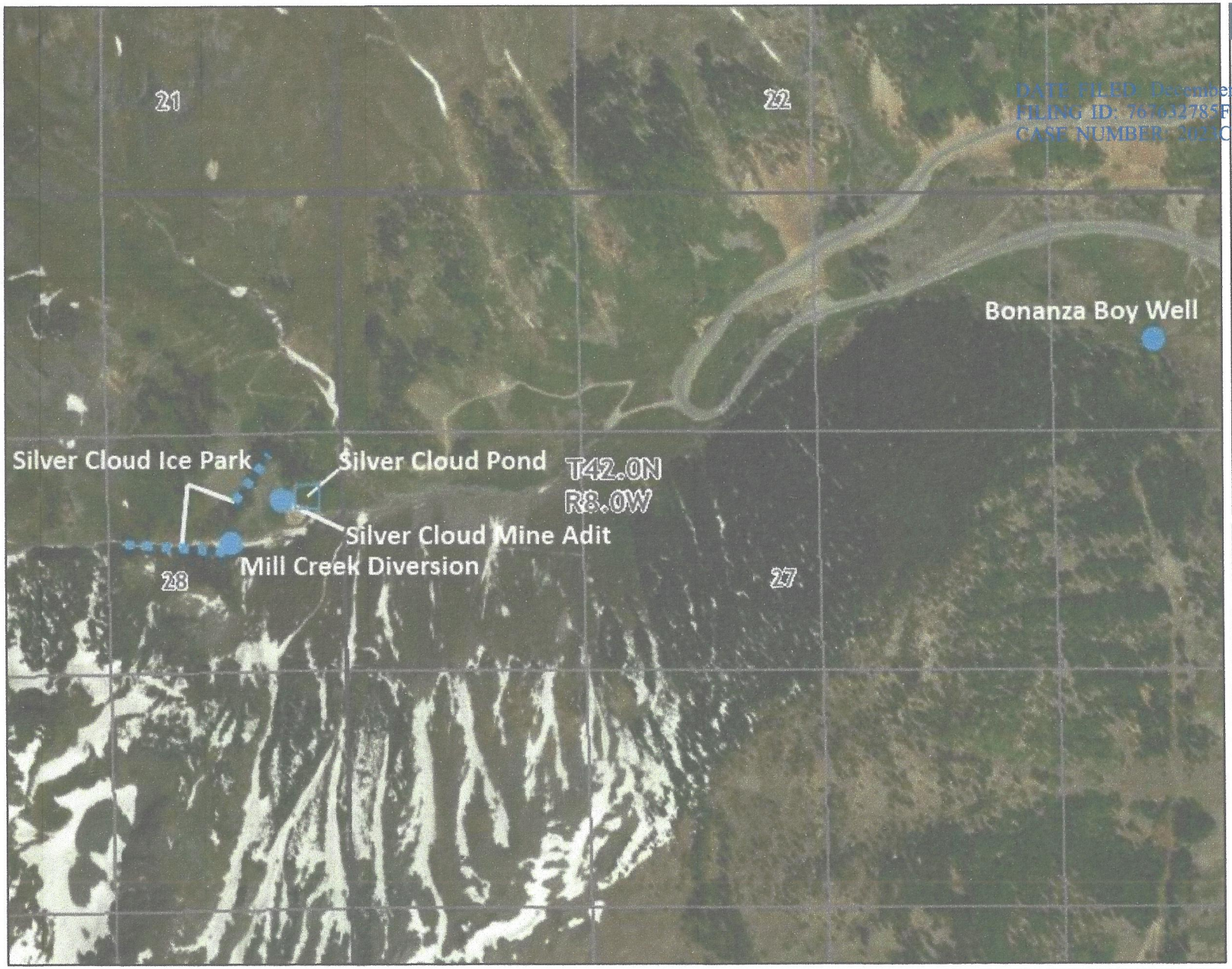
Mary Prosecan
Chief Business Development Officer and
Senior Project Manager, LRE Water

The person signing this verification is: ☐ Applicant ☑ Engineer ☐ Other

COLORADO'S
Decision Support Systems
CWCB / DWR

Exhibit A

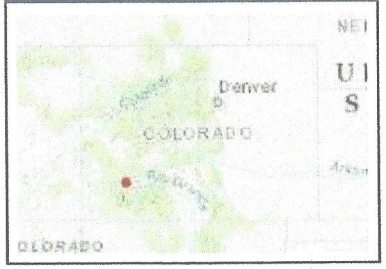
DATE FILED: December 1, 2023 2:17 PM
FILING ID: 767632785F8EE
CASE NUMBER: 2023CW3054



Legend

- Township
- Section
- Q40
- County

Location



Notes

1,595 0 798 1,595 Feet

1: 9,573

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Date Prepared: 12/1/2023 11:50:52 AM

DATE FILED: December 1, 2023 2:17 PM
FILING ID: 767632785F8EE
CASE NUMBER: 2023CW3054

2023CW3054, IN SAN JUAN COUNTY. AMENDED APPLICATION FOR CONDITIONAL SURFACE WATER RIGHTS, A CONDITIONAL GROUNDWATER RIGHT, CONDITIONAL WATER STORAGE RIGHTS, AND PLAN FOR AUGMENTATION. 1. Name, Address, and Telephone Number of Applicant: Bonanza Boy, LLC ("Bonanza Boy") P.O. Box 992 Montrose, CO 81402 Phone: (303) 909-6083. PLEASE SEND ALL CORRESPONDENCE AND PLEADINGS TO: Wayne F. Forman, #14082 and Courtney M. Shephard, #47668 of BROWNSTEIN HYATT FARBER SCHRECK, LLP at 675 15th Street, Suite 2900 Denver, CO 80202 Phone: (303) 223-1100 Fax: (303) 223-0920 E-mail: wforman@bhfs.com and cshephard@bhfs.com 2. Description of Application: Bonanza Boy seeks new conditional surface water rights, a conditional groundwater right, conditional water storage rights, and a plan for augmentation for beneficial uses associated with the Silver Cloud Lodge located in Chattanooga, Colorado. 3. Conditional Surface Water Rights: A. Silver Cloud Mine Adit: i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A. ii. Source: Groundwater tributary to Mill Creek. iii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission. 1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; and developing engineering plans for the Silver Cloud Mine Adit and site plans for the Silver Cloud Lodge. 2. Date Water Applied to Beneficial Use: N/A, conditional appropriation. iv. Amount: 0.25 c.f.s, conditional. v. Uses: Commercial, domestic, fire fighting, power, ice making, piscatorial, and wildlife, with the right to reuse and successively use to extinction. B. Mill Creek Diversion: i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A. ii. Source: Mill Creek, a tributary of the Animas River. iii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission. 1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; and developing engineering plans for the Mill Creek Diversion and site plans for the Silver Cloud Lodge. 2. Date Water Applied to Beneficial Use: N/A, conditional appropriation. iv. Amount: 3.0 c.f.s, conditional. v. Uses: Commercial, domestic, fire fighting, power, piscatorial, wildlife, storage, ice making, and recreation, with the right to reuse and successively use to extinction. 4. Conditional Groundwater Right: A. Bonanza Boy Well: i. Legal Description: SW¼ of the NE¼ of the NE¼ of Section 27, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A. ii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission. 1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Bonanza Boy Well and site plans for employee housing associated with the Silver Cloud Lodge. 2. Date Water Applied to Beneficial Use: N/A, conditional appropriation. iii. Amount: Cumulative annual pumping will not exceed 0.5 acre-feet, and the pumping rate will not exceed 15 gallons per minute. iv. Uses: Commercial and domestic. v. Permit No.: Not applicable. Bonanza Boy will apply for a well permit at a later

date. 5. Conditional Storage Rights: A. Silver Cloud Pond: i. Legal Description: NE¼ of the SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M., in San Juan County, Colorado. *See* Exhibit A. ii. Source: Mill Creek and tributaries to Mill Creek. iii. Point of Diversion: The Silver Cloud Mine Adit (*see* Paragraph 3.A) or the Mill Creek Diversion (*see* Paragraph 3.B). iv. Surface Area: 0.3 surface acres. v. Total Capacity: 0.65 acre-feet. vi. Type: Lined with bentonite, off-channel. vii. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission. 1. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Silver Cloud Pond and site plans for the Silver Cloud Lodge. 2. Date Water Applied to Beneficial Use: N/A, conditional appropriation. viii. Amount: 0.65 acre-feet per year, conditional, subject to as-built storage capacity, with a right to fill and successively refill at a rate of 3.0 c.f.s. from Mill Creek. ix. Uses: Commercial, piscatorial, fire fighting, and augmentation. B. Silver Cloud Ice Park: i. Legal Description: SE¼ of the NE¼ of Section 28, Township 42 North, Range 8 West, N.M.P.M. in San Juan County, Colorado. *See* Exhibit A. ii. Source: Mill Creek and tributaries to Mill Creek. iii. Point of Diversion: The Mill Creek Diversion (*see* Paragraph 3.B). iv. Silver Cloud Ice Park Operation: Bonanza Boy will divert water from Mill Creek and pump the water to the Silver Cloud Ice Park. Bonanza Boy will use a system of up to 10 sprinklers between October and March to make artificial ice, and will store the Mill Creek water in the artificial ice until it melts. Bonanza Boy will successively use the return flows that accrue to Mill Creek as a source of augmentation water, as explained in Paragraph 6. v. Appropriation Date: June 27, 2023, the date Bonanza Boy filed an application for a planned unit development and a land use permit for the Silver Cloud Lodge with the San Juan County Planning Commission. 2. How Initiated: By formation of an intent to appropriate; filing an application for a planned unit development and a land use permit; developing engineering plans for the Silver Cloud Mine Adit, Mill Creek Diversion, and the Silver Cloud Ice Park; and developing site plans for the Silver Cloud Lodge. 2. Date Water Applied to Beneficial Use: N/A, conditional appropriation. vi. Amount: 0.022 c.f.s. vii. Uses: Recreation, ice making, storage, and augmentation. 6. Plan for Augmentation: A. Purpose: The purpose of the plan for augmentation is to permit out-of-priority diversions of the Silver Cloud Adit, Mill Creek Diversion, and Bonanza Boy Well, and to replace evaporation from the Silver Cloud Pond and caused by diversions for artificial ice making at the Silver Cloud Ice Park. B. Structures to be Augmented: Silver Cloud Adit, Mill Creek Diversion, Bonanza Boy Well, depletions caused by out-of-priority diversions for artificial ice making at the Silver Cloud Ice Park, and evaporation from the Silver Cloud Pond. C. Water Rights to be Used for Augmentation: i. Silver Cloud Pond: *See* description in Paragraph 5.A. ii. Silver Cloud Ice Park Return Flows: Bonanza Boy proposes to replace a portion of its out-of-priority depletions with the return flows generated by the production and subsequent melting of artificial ice formed in the Silver Cloud Ice Park. Bonanza Boy will quantify the return flows generated by artificial ice making and will successively use the return flows for the purpose of augmenting out-of-priority depletions. iii. Animas Service Area Water Right: Bonanza Boy intends to use an increment of the Animas Service Area ("ASA") water right decreed in Case No. 06CW127 to cover out-of-priority depletions from the following uses: pumping from the Bonanza Boy Well if drilled

and utilized pursuant to a non-exempt well permit, and surface diversions for domestic uses, pond evaporation, commercial uses, power, wildlife and piscatorial uses, ice making, recreation, and fire fighting. The increment of the ASA water right referenced herein is jointly owned and controlled by the Southwestern Water Conservation District ("SWCD") and La Plata County. Bonanza Boy acknowledges that any use of the ASA water right shall occur only with the written approval of SWCD and La Plata County, and in a manner that is consistent with the terms and conditions of such approval and the 06CW127 Decree. D. Approximate Replacement Requirements: 1.5 acre-feet per year, subject to further analysis, as well as actual diversions and return flows. E. General Operation of the Plan for Augmentation: Historically, water right calls on the Animas River and its tributaries have been rare. This plan for augmentation is a proactive effort designed to ensure the continuous diversion and use of water by Bonanza Boy to the extent there may be future calls by water rights senior to the conditional water rights described in this Application. 7. Name and address of owners of the land on which the structures are or will be located, upon which water is or will be stored, and upon which water is or will be placed to beneficial use: Applicant Bonanza Boy is the owner of land on which all structures are and will be located, water will be stored, and upon which water will be placed to beneficial use. Bonanza Boy's address is listed in Paragraph 1. 8. Requests for Relief: A. Bonanza Boy requests a decree granting the new conditional surface water rights, groundwater right, and water storage rights described in Paragraphs 3, 4, and 5 of this Application. For any conditional water rights requested by this Application that are put to beneficial use during the pendency of this application, Applicant seeks a decree awarding absolute water rights for those water rights as to the completed beneficial uses. B. Bonanza Boy requests a decree approving the plan for augmentation described in Paragraph 6 of this Application. C. Bonanza Boy further requests such additional relief as the Court deems necessary and appropriate to further the purposes of the rights requested herein.

Notice of Intent to Make Absolute

N.O.I. # _____
(Assigned by SWCD)

The below identified applicant hereby notices its intent to make absolute an increment of the Animas Service Area conditional water right decreed in **Case No. 06CW127** consistent with the terms and conditions decreed therein. Use additional pages as needed.

Applicant Information:

Name: Bonanza Boy, LLC Telephone: 303-909-6083

Email Address: _____

Mailing Address: P.O. Box 992, Montrose, Colorado 81402
(The approved NOI will be mailed to this address)

Prospective Water Right Increment Information:

Proposed Use of Water (e.g. domestic, irrigation, commercial):

(1) augmentation; (2) domestic; (3) commercial; (4) evaporation losses; and (5) industrial

Proposed Source (groundwater, surface water):

(1) Groundwater tributary to Mill Creek; and (2) Mill Creek surface water

Proposed Place of Use (include parcel # if possible):

Parcel #s - 47770280040001, 47770220040006

Anticipated Amount of Depletions (number of acres irrigated, stock use, domestic surface area, and pond evaporation, etc. in the time periods per the 06CW127 decree):

Please see attached Table 1.

The applicant is advised and recognizes that the execution of this Notice of Intent to Make Absolute confers no right, title, or interest in water beyond the right to perfect an increment of the Animas Service Area conditional water right consistent with the decree in Case No. 06CW127.

Applicant is hereby given authority by Southwestern Water Conservation District and La Plata County to file an application to make the conditional water right absolute pursuant to the terms and conditions in Case No. 06CW127. The Southwestern Water Conservation District and La Plata County reserve the right to file opposition to such claim if deemed necessary.

_____ _____

Signed for the Applicant, (Title) **(Date)**

_____

Printed Name

Governmental Endorsements:

_____ _____

La Plata County **(Date)**

_____

Printed Name

_____ _____

SWCD **(Date)**

_____

Printed Name

29-Jan-24

Table 1 - Proposed NOI Depletions for Application
Applicant: Bonanza Boy, LLC

	Depletion Rates (cfs)			
	Commercial 5 units with individual sewer using surface water	**Pond Evaporation** 0.3 surface acres at 8,500 feet and above using surface water	**Ice Making** 14,400 gallons per day 15% return without delay using surface water	**Total Depletions (cfs)**
January 1 through January 31	0.000815	0.000132	0.018938	0.019885
February 1 through February 28 (29)	0.000815	0.000476	0.018938	0.020229
March 1 through March 31	0.000815	0.000860	0.000000	0.001675
April 1 through April 14	0.000815	0.001333	0.000000	0.002148
April 15 through April 30	0.000815	0.001333	0.000000	0.002148
May 1 through May 31	0.000815	0.001787	0.000000	0.002602
June 1 through June 14	0.000815	0.002291	0.000000	0.003106
June 15 through June 30	0.000815	0.002291	0.000000	0.003106
July 1 through July 14	0.000815	0.002283	0.000000	0.003098
July 15 through July 31	0.000815	0.002283	0.000000	0.003098
August 1 throught August 31	0.000815	0.001853	0.000000	0.002668
September 1 through September 30	0.000815	0.001607	0.000000	0.002422
October 1 through October 31	0.000815	0.001059	0.000000	0.001874
November 1 through November 30	0.000815	0.000581	0.018938	0.020334
December 1 through December 31	0.000815	0.000199	0.018938	0.019951

NOTE: The Anticipated Depletion amounts calculated above are based on information provided by the application on the Notice of Intent (NOI) to Make Absolute form**. The uses may or may not have been fully developed at this time. The actual depletions will be determined by the water court after development of the claimed uses and application to the court (by the listed applicant for this Notice) to make a conditional water right absolute.

** This form and generated table are not to replace the Applicant Form for the NOI filing but to be used as an attachment to the form to quantify depletion rates for application. The generated table is subject to review by Southwestern Water Conservation District, La Plata County, Division of Water Resources, and other parties involved in the water right application.

LRE WATER
CONNECTING WATER TO LIFE

Technical Memorandum

To: Colby Barrett, Bonanza Boy LLC

From: Mary Presecan, LRE Water

Date: February 27, 2024

Project: Silver Cloud Resort

Subject: Water Demands for Silver Cloud Lodge

The purpose of this technical memorandum is to summarize the estimated water demands associated with the operation of Silver Cloud Lodge. Silver Cloud Lodge is a proposed development on Mill Creek Road (County Road 15/US Forest Service Road 821) near Chattanooga on Highway 550 in San Juan County, Colorado. On November 30, 2023 an application for conditional surface water rights, a conditional groundwater right, conditional water storage rights, and plan for augmentation was filed in Water Division 7 (Case 2023CW3054). The water uses and demands described below are consistent with the uses claimed in Case 2023CW3054.

Silver Cloud Lodge Development Plan

In developing the water demand estimates for Silver Cloud Lodge, LRE Water assumed the following development plan.

Silver Cloud Lodge & Restaurant

- Water source – Silver Cloud Mine adit
- 12 rooms in main lodge, 2-person, year-round occupancy
- Each lodge room to have private bathroom & shower
- Restaurant in lodge will serve guests 3 meals a day, year-round
- Restaurant to serve luxury camping guest 2 meals a day May - Oct
- Wastewater is treated via septic system. For the purpose of this analysis, a 15% consumptive use rate was assumed for the septic system.

Luxury Camp Site

- Water source – Silver Cloud Mine adit
- 8 luxury campsites (2 guests per site)
- 2 communal bathrooms (containing toilets and showers) located adjacent to campsites
- Campers will eat 2 meals a day in the lodge restaurant
- Wastewater is treated via septic system. For the purpose of this analysis, a 15% consumptive use rate was assumed for the septic system.

Bonanza Boy Site

- Water source – Mill Creek via infiltration gallery or well
- Silver Cloud Lodge Welcome Center & Gift Shop - lodge/camping registration, gift shop, 2 bathrooms, communal showers to be used by guests and non-guests (campers in the area)
- 1,500 sq ft of Maintenance Space
- 3 employee apartments [(2) 2 bedroom apartments, (1) 1 bedroom apartment]
- Each apartment will have bathroom, shower, and kitchen
- Wastewater is treated via septic system. For the purpose of this analysis, a 15% consumptive use rate was assumed for the septic system.

Estimation of Water Demand

The table on the following page presents the estimated daily and annual demand for water through the Silver Cloud Mine Adit and the Bonanza Boy Well / Infiltration Gallery, along with the estimated water consumption and return flows. It is our understanding that wastewater from the lodge site and the Bonanza Boy site will be treated via a system consisting of leach field septic systems. Based on this understanding, a 15% consumptive use rate was applied when estimating the water consumption and return flow amounts.

Additional Water Demands

In addition to the water uses described above, additional water may be diverted from Mill Creek for the following non-consumptive uses described below.

- Facilities to be powered by a combination of solar, micro-hydro, and biomass energy. Water source for micro-hydro is Mill Creek. Bonanza Boy LLC anticipates diverting 1 cfs of water from Mill Creek in connection with the micro-hydro system, when water is available for use. Use of Mill Creek supply for micro-hydro system is assumed to be non-consumptive; therefore, 100% of the water used through the micro-hydro power system will be returned to Mill Creek.
- An ice climbing park will be constructed at the Silver Cloud Lodge site. Ice production will be achieved using water diverted from Mill Creek through a water delivery system consisting of up to 10 sprinkler heads operating 12 hrs/day at a rate of 2 gallons per minute (gpm). Ice production will occur from November through February. Based on information from the Ouray Ice Park (which is decreed in Case 13CW3072), 15% of the water used for the ice climbing park is expected to return to Mill Creek without delay due to system losses, and the remaining water used at the ice climbing park will return to the stream when the ice melts (March – May).

Main Place of Use	Type of Use	Quantity		Water Demand Assumptions		Occupancy Rate		Water Demands				Water Consumption				Return Flows			
								Daily Water Demand		Annual Water Demand		Daily Water Consumption		Annual Water Consumption		Daily Return Flows		Annual Return Flows	
								(gal/day)	(AF/day)	(gal/year)	(AF/year)	(gal/day)	(AF/day)	(gal/year)	(AF/year)	(gal/day)	(AF/day)	(gal/year)	(AF/year)
LODGE SITE (LODGE, LUXURY CAMPING, & RESTAURANT)	Lodge Rooms	12	Lodge Rooms	60	gallons per night per room	365	nights per year	720	0.002	262,800	0.81	108	0.00033	39,420	0.12	612	0.002	223,380	0.69
	Luxury Camp Sites	8	Luxury Camp Sites served by 2 communal restrooms	35	gallons per night per camper	150	nights per year (mid-May thru mid-Oct)	560	0.002	84,000	0.26	84	0.000	12,600	0.04	476	0.001	71,400	0.22
	Restaurant Service for Lodge Room Guests	24	Patrons per meal	10	gallons per patron per meal	1095	Meals per year (assumes 3 meals per day and 365 days/year)	720	0.002	262,800	0.81	108	0.000	39,420	0.12	612	0.002	223,380	0.69
	Restaurant Service for Luxury Camp Site Guests	16	Patrons per meal	10	gallons per patron per meal	300	Meals per year (assumes 2 meals per day and 150 days/year)	320	0.001	48,000	0.15	48	0.000	7,200	0.02	272	0.001	40,800	0.13
TOTAL ADIT WATER USE								2,320	0.007	657,600	2.02	348	0.001	98,640	0.30	1,972	0.006	558,960	1.72
BONANZA BOY SITE (MAINTENANCE SPACE, EMPLOYEE HOUSING, & GIFT SHOP)	Maintenance Space	1500	sq ft of Maintenance Space	15	gallons per day per 1000 sq ft	365	days of operation	23	0.00007	8,213	0.03	3	0.00001	1,232	0.00	19	0.00006	6,981	0.02
	Apartments for Employee Housing	5	Residents	60	gallons per day per resident	365	days of occupancy	300	0.001	109,500	0.34	45	0.000	16,425	0.05	255	0.001	93,075	0.29
	2 Restrooms in Gift Shop	2	Guest Restrooms	400	gallons per day per bathroom	365	days of operation	800	0.002	292,000	0.90	120	0.000	43,800	0.13	680	0.002	248,200	0.76
	2 Showers in Gift Shop	20	Bathers	10	gallons per day per bather	365	days of operation	200	0.001	73,000	0.22	30	0.000	10,950	0.03	170	0.001	62,050	0.19
TOTAL WELL / INFILTRATION GALLERY WATER USE								1,323	0.004	482,713	1.48	198	0.001	72,407	0.22	1,124	0.003	410,306	1.26

TOTAL ADIT WATER USE								2,320	0.007	657,600	2.02	348	0.001	98,640	0.30	1,972	0.006	558,960	1.72
TOTAL WELL / INFILTRATION GALLERY WATER USE								1,323	0.004	482,713	1.48	198	0.001	72,407	0.22	1,124	0.003	410,306	1.26
TOTAL								3,643	0.011	1,140,313	3.50	546	0.002	171,047	0.52	3,096	0.010	969,266	2.97

Green Analytical Laboratories

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
jeremy.allen@greenanalytical.com

28 December 2023

Mary Presecan
LRE Water
909 Colorado Ave
Glenwood Springs, CO 81601
RE: [none]

Enclosed are the results of analyses for samples received by the laboratory on 12/13/23 13:40. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

Veronica J Wells

Veronica Wells
Project Manager

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at http://greenanalytical.com/certifications/

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water. TNI Certificate Number: T104704514-23-18

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8. TNI Certificate Number: T104704398-23-16

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Main Well	2312145-01	Water	12/08/23 15:00	12/13/23 13:40	
Pit Well	2312145-02	Water	12/08/23 15:00	12/13/23 13:40	
Mill Creek	2312145-03	Water	12/08/23 15:00	12/13/23 13:40	

Green Analytical Laboratories

Veronica J Wells

Veronica Wells, Project Manager

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Main Well

2312145-01 (Ground Water)
Sampled Date: 12/08/23 15:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Recoverable Metals by ICP (E200.7)									
Calcium*	**550**	2.00	0.955	mg/L	10	12/26/23 17:13	EPA200.7		AES
Hardness as CaCO3	**1380**	5.41	2.55	mg/L	10	12/26/23 17:13	2340 B		ICP
Iron*	**1.93**	0.500	0.388	mg/L	10	12/26/23 17:13	EPA200.7		AES
Magnesium*	**2.27**	0.100	0.040	mg/L	1	12/20/23 13:54	EPA200.7		ICP
Potassium*	**2.13**	1.00	0.517	mg/L	1	12/20/23 13:54	EPA200.7		ICP
Sodium*	**25.7**	1.00	0.540	mg/L	1	12/20/23 13:54	EPA200.7		ICP
Total Recoverable Metals by ICPMS (E200.8)									
Antimony*	<0.0020	0.0020	0.0005	mg/L	1	12/20/23 13:07	EPA200.8		AES
Arsenic*	**0.0078**	0.0010	0.0004	mg/L	1	12/20/23 16:26	EPA200.8		AES
Barium*	**0.0072**	0.0005	0.0004	mg/L	1	12/20/23 13:07	EPA200.8		AES
Beryllium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:07	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:07	EPA200.8		AES
Chromium*	<0.0020	0.0020	0.0011	mg/L	1	12/20/23 13:07	EPA200.8		AES
Copper*	**0.0035**	0.0020	0.0004	mg/L	1	12/20/23 13:07	EPA200.8	B3	AES
Lead*	<0.0005	0.0005	0.0004	mg/L	1	12/20/23 13:07	EPA200.8		AES
Manganese*	**1.79**	0.0020	0.0016	mg/L	1	12/20/23 13:07	EPA200.8		AES
Mercury	<0.0002	0.0002	0.00001	mg/L	1	12/18/23 16:37	EPA200.8		AES
Nickel*	**0.0164**	0.0005	0.0002	mg/L	1	12/20/23 13:07	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0004	mg/L	1	12/20/23 13:07	EPA200.8		AES
Thallium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:07	EPA200.8		AES
Uranium	**0.0010**	0.0005	0.00003	mg/L	1	12/20/23 13:07	EPA200.8		AES

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Veronica J Wells

Veronica Wells, Project Manager

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Pit Well

2312145-02 (Ground Water)
Sampled Date: 12/08/23 15:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Recoverable Metals by ICP (E200.7)									
Calcium*	**161**	1.00	0.478	mg/L	5	12/26/23 17:17	EPA200.7		AES
Hardness as CaCO3	**407**	2.91	1.36	mg/L	5	12/26/23 17:17	2340 B		ICP
Iron*	<0.250	0.250	0.194	mg/L	5	12/26/23 17:17	EPA200.7		AES
Magnesium*	**1.40**	0.100	0.040	mg/L	1	12/20/23 13:58	EPA200.7		ICP
Potassium*	**1.06**	1.00	0.517	mg/L	1	12/20/23 13:58	EPA200.7		ICP
Sodium*	**10.4**	1.00	0.540	mg/L	1	12/20/23 13:58	EPA200.7		ICP
Total Recoverable Metals by ICPMS (E200.8)									
Antimony*	<0.0020	0.0020	0.0005	mg/L	1	12/20/23 13:08	EPA200.8		AES
Arsenic*	<0.0014	0.0014	0.0004	mg/L	1	12/20/23 14:52	EPA200.8		AES
Barium*	**0.0284**	0.0005	0.0004	mg/L	1	12/20/23 13:08	EPA200.8		AES
Beryllium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:08	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:08	EPA200.8		AES
hromium*	<0.0020	0.0020	0.0011	mg/L	1	12/20/23 13:08	EPA200.8		AES
Copper*	**0.0030**	0.0020	0.0004	mg/L	1	12/20/23 13:08	EPA200.8	B3	AES
Lead*	<0.0005	0.0005	0.0004	mg/L	1	12/20/23 13:08	EPA200.8		AES
Manganese*	<0.0020	0.0020	0.0016	mg/L	1	12/20/23 13:08	EPA200.8		AES
Mercury	<0.0002	0.0002	0.00001	mg/L	1	12/18/23 16:41	EPA200.8		AES
Nickel*	**0.0048**	0.0005	0.0002	mg/L	1	12/20/23 13:08	EPA200.8		AES
Selenium*	<0.0010	0.0010	0.0004	mg/L	1	12/20/23 13:08	EPA200.8		AES
Thallium*	<0.0005	0.0005	0.0001	mg/L	1	12/20/23 13:08	EPA200.8		AES
Uranium	<0.0005	0.0005	0.00003	mg/L	1	12/20/23 13:08	EPA200.8		AES

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Veronica J Wells

Veronica Wells, Project Manager

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Mill Creek

2312145-03 (Surface Water)
Sampled Date: 12/08/23 15:00

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
Total Recoverable Metals by ICP (E200.7)									
Calcium*	**135**	0.200	0.096	mg/L	1	12/26/23 18:35	EPA200.7		AES
Hardness as CaCO3	**349**	0.911	0.402	mg/L	1	12/26/23 18:35	2340 B		AES
Iron*	<0.050	0.050	0.039	mg/L	1	12/26/23 18:35	EPA200.7		AES
Magnesium*	**2.64**	0.100	0.040	mg/L	1	12/26/23 18:35	EPA200.7		AES
Potassium*	<1.00	1.00	0.517	mg/L	1	12/26/23 18:35	EPA200.7		AES
Sodium*	**8.40**	1.00	0.540	mg/L	1	12/26/23 18:35	EPA200.7		AES
Total Recoverable Metals by ICPMS (E200.8)									
Antimony*	<0.0020	0.0020	0.0005	mg/L	1	12/28/23 11:16	EPA200.8		AES
Arsenic*	<0.0010	0.0010	0.0004	mg/L	1	12/28/23 11:16	EPA200.8		AES
Barium*	**0.0307**	0.0005	0.0004	mg/L	1	12/28/23 11:16	EPA200.8		AES
Beryllium*	<0.0005	0.0005	0.0001	mg/L	1	12/28/23 11:16	EPA200.8		AES
Cadmium*	<0.0005	0.0005	0.0001	mg/L	1	12/28/23 11:16	EPA200.8		AES
Chromium*	<0.0020	0.0020	0.0011	mg/L	1	12/28/23 11:16	EPA200.8		AES
Copper*	**0.0005**	0.0005	0.0004	mg/L	1	12/28/23 11:16	EPA200.8		AES
Lead*	<0.0005	0.0005	0.0004	mg/L	1	12/28/23 11:16	EPA200.8		AES
Manganese*	**0.0224**	0.0020	0.0016	mg/L	1	12/28/23 11:16	EPA200.8		AES
Mercury	<0.0002	0.0002	0.00001	mg/L	1	12/18/23 16:43	EPA200.8		AES
Nickel*	**0.0088**	0.0020	0.0002	mg/L	1	12/28/23 11:16	EPA200.8	B3	AES
Selenium*	<0.0010	0.0010	0.0004	mg/L	1	12/28/23 11:16	EPA200.8		AES
Thallium*	<0.0005	0.0005	0.0001	mg/L	1	12/28/23 11:16	EPA200.8		AES
Uranium	<0.0005	0.0005	0.00003	mg/L	1	12/28/23 11:16	EPA200.8		AES

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Veronica J Wells

Veronica Wells, Project Manager

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Total Recoverable Metals by ICP (E200.7) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B233746 - Total Recoverable by ICP										
Blank (B233746-BLK1)			Prepared: 12/18/23 Analyzed: 12/20/23							
Calcium	ND	0.200	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B233746-BS1)			Prepared: 12/18/23 Analyzed: 12/20/23							
Calcium	1.95	0.200	mg/L	2.00		97.4	85-115			
Iron	1.89	0.050	mg/L	2.00		94.5	85-115			
Magnesium	10.1	0.100	mg/L	10.0		101	85-115			
Potassium	4.02	1.00	mg/L	4.00		101	85-115			
Sodium	1.66	1.00	mg/L	1.62		102	85-115			
LCS Dup (B233746-BSD1)			Prepared: 12/18/23 Analyzed: 12/20/23							
Calcium	1.91	0.200	mg/L	2.00		95.7	85-115	1.80	20	
Iron	1.90	0.050	mg/L	2.00		94.9	85-115	0.437	20	
Magnesium	9.92	0.100	mg/L	10.0		99.2	85-115	1.65	20	
Potassium	4.01	1.00	mg/L	4.00		100	85-115	0.354	20	
Sodium	1.64	1.00	mg/L	1.62		101	85-115	1.36	20	
Batch B233799 - Total Recoverable by ICP										
Blank (B233799-BLK1)			Prepared & Analyzed: 12/26/23							
Calcium	ND	0.200	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B233799-BS1)			Prepared & Analyzed: 12/26/23							
Calcium	2.08	0.200	mg/L	2.00		104	85-115			
Iron	2.00	0.050	mg/L	2.00		100	85-115			
Magnesium	10.3	0.100	mg/L	10.0		103	85-115			
Potassium	4.06	1.00	mg/L	4.00		101	85-115			
Sodium	1.61	1.00	mg/L	1.62		99.5	85-115			
LCS Dup (B233799-BSD1)			Prepared & Analyzed: 12/26/23							
Calcium	2.17	0.200	mg/L	2.00		108	85-115	4.31	20	
Iron	2.14	0.050	mg/L	2.00		107	85-115	6.89	20	

Green Analytical Laboratories

Veronica J Wells

Veronica Wells, Project Manager

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Green Analytical Laboratories

LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Total Recoverable Metals by ICP (E200.7) - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B233799 - Total Recoverable by ICP (Continued)										
LCS Dup (B233799-BSD1) (Continued)			Prepared & Analyzed: 12/26/23							
Magnesium	11.0	0.100	mg/L	10.0		110	85-115	6.57	20	
Potassium	4.34	1.00	mg/L	4.00		108	85-115	6.58	20	
Sodium	1.73	1.00	mg/L	1.62		107	85-115	6.98	20	

Green Analytical Laboratories

Veronica J Wells

Veronica Wells, Project Manager

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Green Analytical Laboratories

LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Total Recoverable Metals by ICPMS (E200.8) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B233747 - Total Recoverable by ICPMS										
Blank (B233747-BLK1)				Prepared: 12/18/23 Analyzed: 12/20/23						
Antimony	ND	0.0020	mg/L							
Arsenic	ND	0.0010	mg/L							
Barium	ND	0.0005	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0005	mg/L							
Chromium	ND	0.0020	mg/L							
Copper	ND	0.0005	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0020	mg/L							
Nickel	ND	0.0005	mg/L							
Selenium	ND	0.0010	mg/L							
Thallium	ND	0.0005	mg/L							
Uranium	ND	0.0005	mg/L							
LCS (B233747-BS1)				Prepared: 12/18/23 Analyzed: 12/20/23						
Antimony	0.0508	0.0020	mg/L	0.0500		102	85-115			
Arsenic	0.0499	0.0010	mg/L	0.0500		99.8	85-115			
Barium	0.0498	0.0005	mg/L	0.0500		99.7	85-115			
Beryllium	0.0504	0.0005	mg/L	0.0500		101	85-115			
Cadmium	0.0503	0.0005	mg/L	0.0500		101	85-115			
Chromium	0.0516	0.0020	mg/L	0.0500		103	85-115			
Copper	0.0481	0.0005	mg/L	0.0500		96.1	85-115			
Lead	0.0485	0.0005	mg/L	0.0500		96.9	85-115			
Manganese	0.0520	0.0020	mg/L	0.0500		104	85-115			
Nickel	0.0508	0.0005	mg/L	0.0500		102	85-115			
Selenium	0.249	0.0010	mg/L	0.250		99.8	85-115			
Thallium	0.0481	0.0005	mg/L	0.0500		96.1	85-115			
Uranium	0.0473	0.0005	mg/L	0.0500		94.7	85-115			
LCS Dup (B233747-BSD1)				Prepared: 12/18/23 Analyzed: 12/20/23						
Antimony	0.0518	0.0020	mg/L	0.0500		104	85-115	1.98	20	
Arsenic	0.0516	0.0010	mg/L	0.0500		103	85-115	3.35	20	
Barium	0.0494	0.0005	mg/L	0.0500		98.9	85-115	0.841	20	
Beryllium	0.0511	0.0005	mg/L	0.0500		102	85-115	1.38	20	
Cadmium	0.0518	0.0005	mg/L	0.0500		104	85-115	2.91	20	
Chromium	0.0518	0.0020	mg/L	0.0500		104	85-115	0.505	20	
Copper	0.0482	0.0005	mg/L	0.0500		96.3	85-115	0.229	20	
Lead	0.0485	0.0005	mg/L	0.0500		96.9	85-115	0.0126	20	
Manganese	0.0517	0.0020	mg/L	0.0500		103	85-115	0.690	20	
Nickel	0.0500	0.0005	mg/L	0.0500		100	85-115	1.57	20	

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Total Recoverable Metals by ICPMS (E200.8) - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B233747 - Total Recoverable by ICPMS (Continued)										
LCS Dup (B233747-BSD1) (Continued)			Prepared: 12/18/23 Analyzed: 12/20/23							
Selenium	0.248	0.0010	mg/L	0.250		99.3	85-115	0.481	20	
Thallium	0.0483	0.0005	mg/L	0.0500		96.6	85-115	0.437	20	
Uranium	0.0480	0.0005	mg/L	0.0500		96.0	85-115	1.36	20	
Batch B233749 - Mercury by 200.8										
Blank (B233749-BLK1)			Prepared & Analyzed: 12/18/23							
Mercury	ND	0.0002	mg/L							
LCS (B233749-BS1)			Prepared & Analyzed: 12/18/23							
Mercury	0.0026	0.0002	mg/L	0.00250		103	85-115			
LCS Dup (B233749-BSD1)			Prepared & Analyzed: 12/18/23							
Mercury	0.0026	0.0002	mg/L	0.00250		104	85-115	1.89	20	
Batch B233800 - Total Recoverable by ICPMS										
Blank (B233800-BLK1)			Prepared: 12/26/23 Analyzed: 12/28/23							
Antimony	ND	0.0020	mg/L							
Arsenic	ND	0.0010	mg/L							
Barium	ND	0.0005	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0005	mg/L							
Chromium	ND	0.0020	mg/L							
Copper	ND	0.0005	mg/L							
Lead	ND	0.0005	mg/L							
Manganese	ND	0.0020	mg/L							
Nickel	0.0011	0.0005	mg/L							B3
Selenium	ND	0.0010	mg/L							
Thallium	ND	0.0005	mg/L							
Uranium	ND	0.0005	mg/L							
LCS (B233800-BS1)			Prepared: 12/26/23 Analyzed: 12/28/23							
Antimony	0.0510	0.0020	mg/L	0.0500		102	85-115			
Arsenic	0.0507	0.0010	mg/L	0.0500		101	85-115			
Barium	0.0489	0.0005	mg/L	0.0500		97.8	85-115			
Beryllium	0.0493	0.0005	mg/L	0.0500		98.5	85-115			
Cadmium	0.0496	0.0005	mg/L	0.0500		99.1	85-115			
Chromium	0.0489	0.0020	mg/L	0.0500		97.8	85-115			
Copper	0.0485	0.0005	mg/L	0.0500		97.0	85-115			
Lead	0.0487	0.0005	mg/L	0.0500		97.4	85-115			
Manganese	0.0503	0.0020	mg/L	0.0500		101	85-115			

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LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Total Recoverable Metals by ICPMS (E200.8) - Quality Control (Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B233800 - Total Recoverable by ICPMS (Continued)										
LCS (B233800-BS1) (Continued)				Prepared: 12/26/23 Analyzed: 12/28/23						
Nickel	0.0485	0.0005	mg/L	0.0500		97.0	85-115			
Selenium	0.246	0.0010	mg/L	0.250		98.4	85-115			
Thallium	0.0487	0.0005	mg/L	0.0500		97.5	85-115			
Uranium	0.0512	0.0005	mg/L	0.0500		102	85-115			
LCS Dup (B233800-BSD1)				Prepared: 12/26/23 Analyzed: 12/28/23						
Antimony	0.0524	0.0020	mg/L	0.0500		105	85-115	2.66	20	
Arsenic	0.0517	0.0010	mg/L	0.0500		103	85-115	2.04	20	
Barium	0.0503	0.0005	mg/L	0.0500		101	85-115	2.80	20	
Beryllium	0.0506	0.0005	mg/L	0.0500		101	85-115	2.76	20	
Cadmium	0.0507	0.0005	mg/L	0.0500		101	85-115	2.34	20	
Chromium	0.0503	0.0020	mg/L	0.0500		101	85-115	2.79	20	
Copper	0.0501	0.0005	mg/L	0.0500		100	85-115	3.15	20	
Lead	0.0503	0.0005	mg/L	0.0500		101	85-115	3.15	20	
Manganese	0.0517	0.0020	mg/L	0.0500		103	85-115	2.62	20	
Nickel	0.0501	0.0005	mg/L	0.0500		100	85-115	3.14	20	
Selenium	0.253	0.0010	mg/L	0.250		101	85-115	2.95	20	
Thallium	0.0501	0.0005	mg/L	0.0500		100	85-115	2.67	20	
Uranium	0.0515	0.0005	mg/L	0.0500		103	85-115	0.668	20	

Notes and Definitions

B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
	*Results reported on as received basis unless designated as dry.
RPD	Relative Percent Difference
LCS	Laboratory Control Sample (Blank Spike)
RL	Report Limit
MDL	Method Detection Limit

Green Analytical Laboratories

Veronica J Wells

Veronica Wells, Project Manager

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Green Analytical Laboratories

LRE Water	Project: Pkg 1/2 Combo and Rad Chem	
909 Colorado Ave	Project Name / Number: [none]	**Reported:**
Glenwood Springs CO, 81601	Project Manager: Mary Presecan	12/28/23 15:25

Qualifier Summary

LabNumber	Analysis	Analyte	Qualifier	TextBody
2312145-01	Copper 200.2 by ICPMS	Copper	B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
2312145-02	Copper 200.2 by ICPMS	Copper	B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
2312145-03	Nickel 200.2 by ICPMS	Nickel	B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
B233800-BLK1	Nickel 200.2 by ICPMS	Nickel	B3	Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.

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GAL Analytical

(970) 247-4220
Fax: (970) 247-4227

dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST
FORM-006
COC - Revision 6.0

Company or Client:	LRE Water
Address:	1221 Auraria Parkway
City:	Denver, State: CO Zip: 80204
Phone #:	
Contact Person:	Mary Presecan
Email Report to:	Mary.Presecan@LREWater.com
Project Name (optional):	Cbcirrett17@gmail.com
Sampler Name (Print):	

Bill to (if different)
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Email:

ANALYSIS REQUEST

	Sample Name or Location	Collected Date	Collected Time	Matrix (check one): GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	DRINKING WATER	OTHER	# of containers: No preservation (general)	HNO_3	HCl	H_2SO_4	Other Bact	Other	Package #1 General Water Quality Metals	Package #2 SDWA Inorganic Chem.	Total Coliform (P/A)	e. coli (P/A) MRN	Rad Chem. Suite 12/18
2312145 01	Main well	12/8/23	3PM	X							1	1		1	1		X	X	X	X	X
02	pit well	12/8/23	3PM	X							1	1		1	1		X	X	X	X	
03	Mill creek	12/8/23	3PM		X						1	1		1	1		X	X	X	X	

PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and receive by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder. In GAL, regardless of whether such claim is based upon any of the above written reasons or otherwise.

Relinquished By: Colby Barrett	Date: 12-9-23 Time: 1PM	Received By: UPS	Report to State? (Circle) Yes No
Relinquished By: UPS	Date: 12/13/23 Time: 1340	Received By: [signature]	
Relinquished By:	Date: Time:	Received By:	laser #2
Relinquished By:	Date: Time:	Received By:	11.1°C Temperature at receipt; MRN CHECKED BY; On Ice; X No Ice

† GAL cannot always accept verbal changes. Please fax or email written change requests.
* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.

Just Click Printing Form #17-0301

Project Information

LRE Water
209 Colorado Ave
Glenwood Springs, CO 81601
Laboratory PM: Veronica Wells

LRE Water
Phone: (970) 945-6777
Fax:

Project Name: Pkg 1/2 Combo and Rad Chem
Project Number: Pkg 1/2 Combo and Rad Chem
Client PM: Diana Trejo Calzada
Comments:

Analysis	Comment

200.2 Metals Digest
Alkalinity, Total
Antimony 200.2 by ICPMS
Arsenic 200.2 by ICPMS
Barium 200.2 by ICPMS
Beryllium 200.2 by ICPMS
Cadmium 200.2 by ICPMS
Chloride [IC]
Chromium 200.2 by ICPMS
Conductivity
Copper 200.2 by ICPMS
Fluoride [IC]
Hardness
Iron 200.2 by ICP
Lead 200.2 by ICPMS
Manganese 200.2 by ICPMS
Mercury 200.8 by ICP-MS
Nickel 200.2 by ICPMS
Nitrate/Nitrite [LACHAT]
pH
Potassium 200.2 by ICP
Selenium 200.2 by ICPMS
Sodium 200.2 by ICP
Sub - Gross Alpha/Beta (Rad. Safety)
Sub - Radium 226/228 (Rad. Safety)
Sulfate [IC]
Thallium 200.2 by ICPMS
Total Coliform [P/A]
Total Dissolved Solids [TDS]
Uranium 200.2 by ICPMS

Hardness subanalyses:
Calcium 200.2 by ICP
Magnesium 200.2 by ICP

Sub - Gross Alpha/Beta (Rad. Safety) subanalyses:
Sub - Gross Alpha (Rad. Safety)
Sub - Gross Beta (Rad. Safety)

Analytical Laboratories

SAMPLE CONDITION RECEIPT FORM

Client Name: LRE Water **Work Order #** 2312-145

Courier: ☐Fed Ex ☒UPS ☐USPS ☐Client ☐Kangaroo

Custody Seals on Box/Cooler Present: ☐ Yes ☒ No Seals Intact: ☐ Yes ☐ No

Thermometer Used: #2 Samples on ice, cooling process has begun: ☐ Yes ☒ No

Type of Ice: ☐ Wet ☐ Blue ☒ None

Cooler Temp: Observed Temp: 11.1 °C Correction Factor: 0 °C Final Temp: 11.1 °C

Date/Initials of person examining contents: MRN 12/14

Labeled by initials: _____ (if different than above)

*Temp should be above freezing to 6°C

Chain of Custody Present:	☑Yes ☐No	1.
Chain of Custody Filled Out:	☑Yes ☐No	2.
Chain of Custody Relinquished:	☑Yes ☐No	3.
Sampler Name and Signature on COC:	☑Yes ☐No	4.
Samples arrived within hold time:	☑Yes ☒No	5. short holds 0.0.H
Short Hold Time Analysis (<72hr):	☑Yes ☐No	6. pH, BACt
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume:	☑Yes ☐No	8.
Correct Containers Used:	☑Yes ☐No	9.
Containers Intact:	☑Yes ☐No	10.
Dissolved Testing Needed: Field Filtered: ☐Yes ☐No	☐Yes ☑No	11.
Sample Labels match COC: -Includes Date/Time/ID	☑Yes ☐No	12.
Matrix:	(WT) SL OT	
Trip Blank Present:	☐Yes ☐No ☐N/A	13.
Trip Blank Custody Seals Present:	☐Yes ☐No ☐N/A	

Client Notification/Resolution:

Person Contacted: Diana Trejo Date/Time: 12/14/23

Comments/Resolution: VJW contated LRE via email to determine how to proceed. D.T responded that we will run the metals suite- 12/15/23 10:47.

SXDATA

SAMPLENAME	LABSAMPID	MATRIX	SAMPDATE	METHODCODE	ANALYTE	RESULT	RL	Units
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Calcium 200.2 by ICP	Calcium	550	2.00	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Hardness, Total	Hardness as CaCO3	1380	5.41	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Iron 200.2 by ICP	Iron	1.93	0.500	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Magnesium 200.2 by ICP	Magnesium	2.27	0.100	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Potassium 200.2 by ICP	Potassium	2.13	1.00	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Sodium 200.2 by ICP	Sodium	25.7	1.00	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Antimony 200.2 by ICPMS	Antimony	ND	0.0020	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Arsenic 200.2 by ICPMS	Arsenic	0.0078	0.0010	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Barium 200.2 by ICPMS	Barium	0.0072	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Beryllium 200.2 by ICPMS	Beryllium	ND	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Cadmium 200.2 by ICPMS	Cadmium	ND	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Chromium 200.2 by ICPMS	Chromium	ND	0.0020	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Copper 200.2 by ICPMS	Copper	0.0035	0.0020	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Lead 200.2 by ICPMS	Lead	ND	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Manganese 200.2 by ICPMS	Manganese	1.79	0.0020	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Mercury 200.8 by ICP-MS	Mercury	ND	0.0002	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Nickel 200.2 by ICPMS	Nickel	0.0164	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Selenium 200.2 by ICPMS	Selenium	ND	0.0010	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Thallium 200.2 by ICPMS	Thallium	ND	0.0005	mg/L
Main Well	2312145-01	Water	12/8/2023 3:00:00 PM	Uranium 200.2 by ICPMS	Uranium	0.0010	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Calcium 200.2 by ICP	Calcium	161	1.00	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Hardness, Total	Hardness as CaCO3	407	2.91	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Iron 200.2 by ICP	Iron	ND	0.250	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Magnesium 200.2 by ICP	Magnesium	1.40	0.100	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Potassium 200.2 by ICP	Potassium	1.06	1.00	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Sodium 200.2 by ICP	Sodium	10.4	1.00	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Antimony 200.2 by ICPMS	Antimony	ND	0.0020	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Arsenic 200.2 by ICPMS	Arsenic	ND	0.0014	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Barium 200.2 by ICPMS	Barium	0.0284	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Beryllium 200.2 by ICPMS	Beryllium	ND	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Cadmium 200.2 by ICPMS	Cadmium	ND	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Chromium 200.2 by ICPMS	Chromium	ND	0.0020	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Copper 200.2 by ICPMS	Copper	0.0030	0.0020	mg/L

SXDATA

Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Lead 200.2 by ICPMS	Lead	ND	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Manganese 200.2 by ICPMS	Manganese	ND	0.0020	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Mercury 200.8 by ICP-MS	Mercury	ND	0.0002	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Nickel 200.2 by ICPMS	Nickel	0.0048	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Selenium 200.2 by ICPMS	Selenium	ND	0.0010	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Thallium 200.2 by ICPMS	Thallium	ND	0.0005	mg/L
Pit Well	2312145-02	Water	12/8/2023 3:00:00 PM	Uranium 200.2 by ICPMS	Uranium	ND	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Calcium 200.2 by ICP	Calcium	135	0.200	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Hardness, Total	Hardness as CaCO3	349	0.911	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Iron 200.2 by ICP	Iron	ND	0.050	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Magnesium 200.2 by ICP	Magnesium	2.64	0.100	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Potassium 200.2 by ICP	Potassium	ND	1.00	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Sodium 200.2 by ICP	Sodium	8.40	1.00	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Antimony 200.2 by ICPMS	Antimony	ND	0.0020	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Arsenic 200.2 by ICPMS	Arsenic	ND	0.0010	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Barium 200.2 by ICPMS	Barium	0.0307	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Beryllium 200.2 by ICPMS	Beryllium	ND	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Cadmium 200.2 by ICPMS	Cadmium	ND	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Chromium 200.2 by ICPMS	Chromium	ND	0.0020	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Copper 200.2 by ICPMS	Copper	0.0005	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Lead 200.2 by ICPMS	Lead	ND	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Manganese 200.2 by ICPMS	Manganese	0.0224	0.0020	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Mercury 200.8 by ICP-MS	Mercury	ND	0.0002	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Nickel 200.2 by ICPMS	Nickel	0.0088	0.0020	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Selenium 200.2 by ICPMS	Selenium	ND	0.0010	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Thallium 200.2 by ICPMS	Thallium	ND	0.0005	mg/L
Mill Creek	2312145-03	Water	12/8/2023 3:00:00 PM	Uranium 200.2 by ICPMS	Uranium	ND	0.0005	mg/L

Silver Crown

Report for Third Sampling Event

Fourth Quarter Sampling - Winter 2022



Prepared by:

Bill Coughlin, Western Stream Works, LLC

WESTERN STREAM WORKS
970.708.2139
RIDGWAY, COLORADO
Design • Build • Restore

Cover Photo: View up the Mill Creek valley, near downstream sampling location, winter 2022 conditions.

Introduction

Included is field data and lab results for three locations for Silver Crown sampling. There are additional sample parameters, both field-filtered and unfiltered to meet the objectives provided by Jeff Kurtz, Geosyntec. Updated descriptions for sample locations, edited from sample event one, are included. As requested, there are additional sampling locations from the first sampling event.

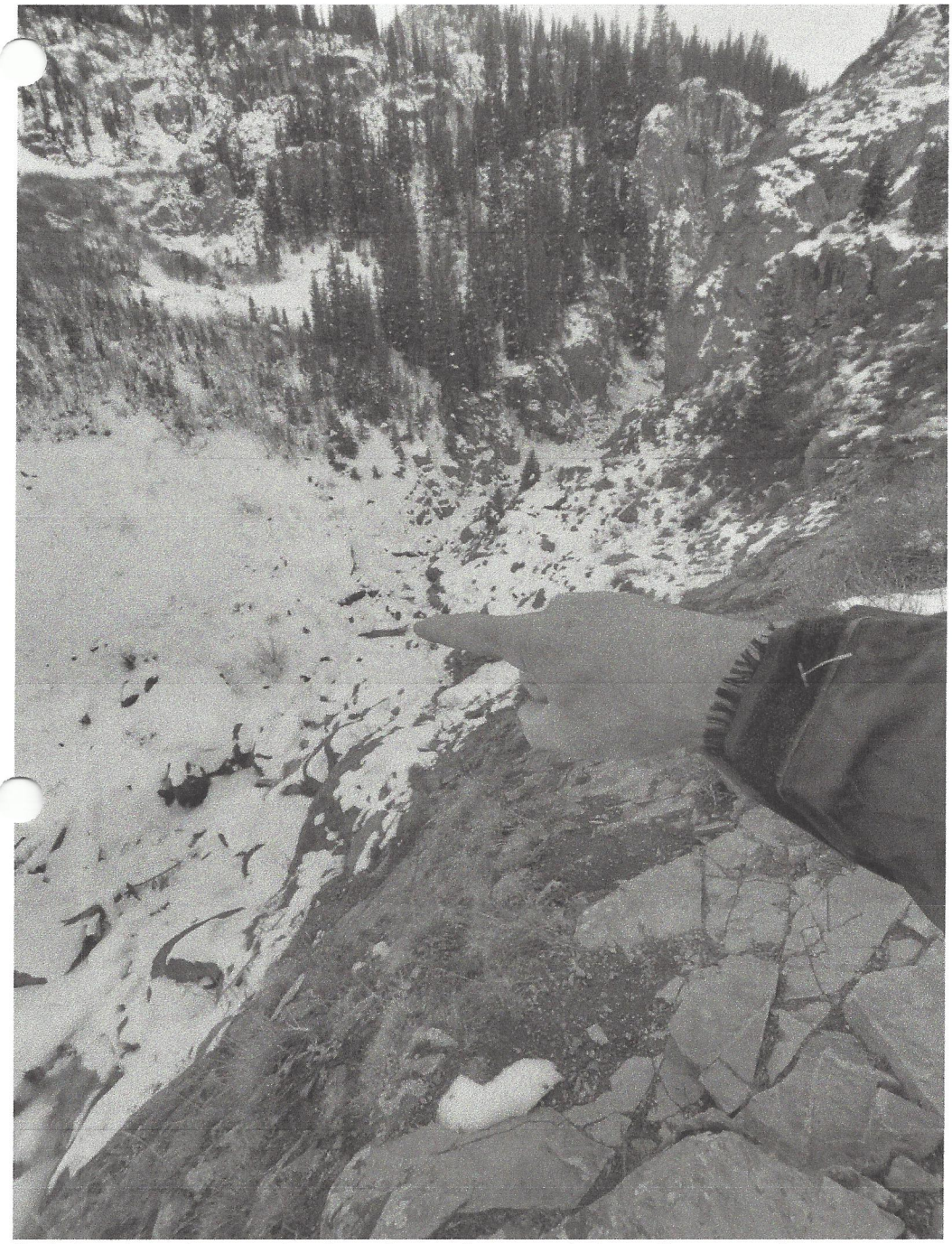
Lab results for the sampling listed below for each location.

The three sample locations are:

1) Upstream Mill Creek
2) Downstream Mill Creek
3) Adit Discharge (previous BB Outlet)

The sample locations are as follows.

Sampling Location 1: Upstream Mill Creek



Pointing to only open ice location safe enough to gather samples.



WSW gaging station Upstream Mill Creek
Water samples collected at Upper Mill Creek and field filtered as required.

The discharge volume at time of sampling is estimated at 1.2 cubic feet per second. Collected (3) water samples.

The field measurement of pH was 8.31. Calibrated multimeter.
21.8 mV ORP
126 uS/cm
63 TDS ppm
7.6 C

Sample Location 2: Downstream Mill Creek

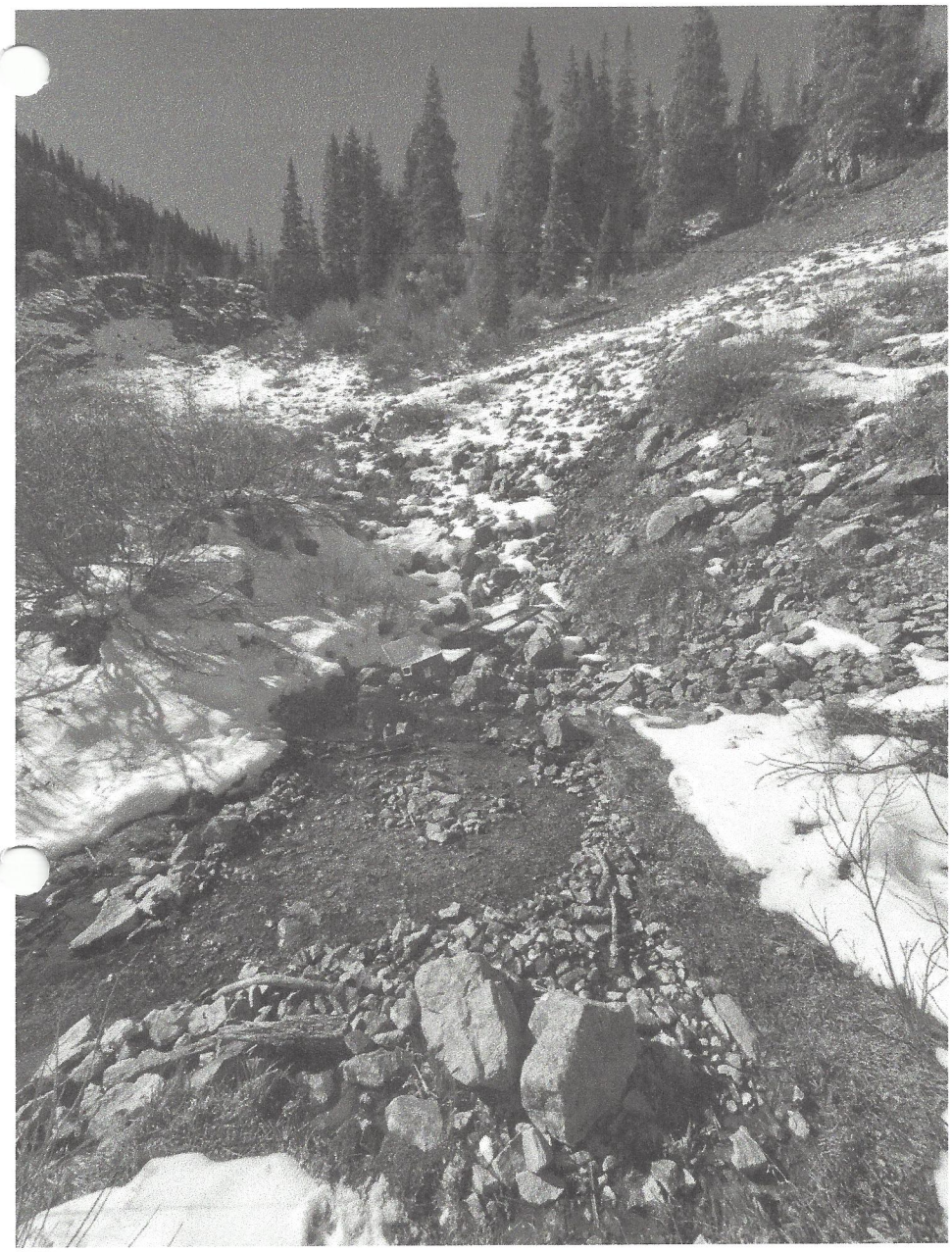


WSW gaging station sampling location Downstream Mill Creek
Water samples collected and field filtered as required.

Mill Creek estimated discharge = 1.4 cubic feet per second.
Collected (3) water samples.

The field measurement of pH was 8.16. Calibrated multimeter
34.2 mV ORP
181 uS/cm
82 TDS ppm
1.16 C

Sample Location 3 Adit Discharge



Adit Discharge location

.

The estimated discharge volume was 23 gpm.
Collected (11) water samples, field filtered when required.
Combined Nitrite/Nitrate sample to meet hold times.

The field measurement of pH was 7.74, calibrated multimeter
8.4 mV ORP
493 uS/cm
246 TDS ppm
9.47 C

Note: Sampled in clear water, slight iron hydroxide deposition. No oil or grease, no bacteria sheen, no phosphorus.

Conclusions

WSW will be providing data to Jeff Kurtz, Geosyntec for further analysis.
The lab report for this sampling event are as follows:

11/15/2022

Work Order: 22K0184

Project: Silver Crown - Oct. 2022 Sampling

Western Stream
Works Attn: Bill
Coughlin 631
Sherman Street
Ridgway, CO 81432

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

NELAP ACCREDITED TNI LABORATORY

Approved By:

Melissa Connolly, Project Manager

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Certificate of Analysis

Western Stream Works
Bill Coughlin

631 Sherman Street

Ridgway, CO 81432

PO#:

Receipt: **11/2/22 10:32 @ 0.1** °C
Date Reported: 11/15/2022

Project Name: **Silver Crown - Oct. 2022 Sampling**

Sample ID: **Upstream Millcreek**

Matrix: **Water**

Lab ID: **22K0184-01**

Date Sampled: **10/31/22 9:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Aluminum, Total	ND	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Arsenic, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Chromium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Iron, Total	0.02	mg/L	0.02	EPA 200.7	11/3/22	11/3/22	
Mercury, Total	ND	mg/L	0.00015	EPA 245.1	11/9/22	11/9/22	
Selenium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	11/8/22	11/8/22	

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631 Sherman Street

Ridgway, CO 81432

PO#:

Receipt: **11/2/22 10:32 @ 0.1** °C
Date Reported: 11/15/2022

Project Name: **Silver Crown - Oct. 2022 Sampling**

Sample ID: **Upstream Millcreek - Field Filtered**

Matrix: **Water**

Lab ID: **22K0184-02**

Date Sampled: **10/31/22 9:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Hardness, Soluble as CaCO3	56.2	mg/L	1.32	SM 2340 B	11/3/22	11/3/22	
Metals							
Aluminum, Dissolved	ND	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Arsenic, Dissolved	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Cadmium, Dissolved	ND	mg/L	0.0002	EPA 200.8	11/11/22	11/11/22	
Calcium, Dissolved	18.2	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Copper, Dissolved	ND	mg/L	0.0010	EPA 200.8	11/11/22	11/11/22	
Lead, Dissolved	0.0005	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Magnesium, Dissolved	2.6	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Manganese, Dissolved	0.0028	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Nickel, Dissolved	ND	mg/L	0.005	EPA 200.7	11/3/22	11/3/22	
Potassium, Dissolved	ND	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Silver, Dissolved	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Sodium, Dissolved	1.1	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Zinc, Dissolved	0.0243	mg/L	0.0100	EPA 200.8	11/11/22	11/11/22	

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Ridgway, CO 81432

PO#:

Receipt: **11/2/22 10:32 @ 0.1** °C
Date Reported: 11/15/2022

Project Name: **Silver Crown - Oct. 2022 Sampling**

Sample ID: **Downstream Millcreek**

Matrix: **Water**

Lab ID: **22K0184-03**

Date Sampled: **10/31/22 16:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Aluminum, Total	ND	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Arsenic, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Chromium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Iron, Total	0.04	mg/L	0.02	EPA 200.7	11/3/22	11/3/22	
Mercury, Total	ND	mg/L	0.00015	EPA 245.1	11/9/22	11/9/22	
Selenium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Thallium, Total	ND	mg/L	0.0002	EPA 200.8	11/8/22	11/8/22	

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Ridgway, CO 81432

PO#:

Receipt: **11/2/22 10:32 @ 0.1 °C**
Date Reported: 11/15/2022

Project Name: **Silver Crown - Oct. 2022 Sampling**

Sample ID: **Downstream Millcreek - Field Filtered**

Matrix: **Water**

Lab ID: **22K0184-04**

Date Sampled: **10/31/22 16:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Hardness, Soluble as CaCO3	81.3	mg/L	1.32	SM 2340 B	11/3/22	11/3/22	
Metals							
Aluminum, Dissolved	ND	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Arsenic, Dissolved	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Cadmium, Dissolved	ND	mg/L	0.0002	EPA 200.8	11/11/22	11/11/22	
Calcium, Dissolved	28.3	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Copper, Dissolved	ND	mg/L	0.0010	EPA 200.8	11/11/22	11/11/22	
Lead, Dissolved	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Magnesium, Dissolved	2.6	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Manganese, Dissolved	0.0010	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Nickel, Dissolved	ND	mg/L	0.005	EPA 200.7	11/3/22	11/3/22	
Potassium, Dissolved	ND	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Silver, Dissolved	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Sodium, Dissolved	1.6	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Zinc, Dissolved	0.0251	mg/L	0.0100	EPA 200.8	11/11/22	11/11/22	

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PO#:

Receipt: **11/2/22 10:32 @ 0.1** °C

Date Reported: 11/15/2022

Project Name: **Silver Crown - Oct. 2022 Sampling**

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Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).

1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million. 1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion. 1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

11/15/2022

Work Order: 22K0187

Project: Silver Crown - Adit Discharge Full List

Western Stream
Works Attn: Bill
Coughlin 631
Sherman Street
Ridgway, CO 81432

Client Service Contact: 801.262.7299

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Approved By:

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Certificate of Analysis

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Bill Coughlin

631 Sherman Street

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PO#:

Receipt: **11/2/22 11:30 @ 2.3 °C**
Date Reported: 11/15/2022

Project Name: **Silver Crown - Adit Discharge Full List**

Sample ID: **Adit Discharge**

Matrix: **Wastewater**

Lab ID: **22K0187-01**

Date Sampled: **10/31/22 11:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Total Organic Nitrogen	ND	mg/L	1.0	Calculation	11/11/22	11/11/22	
Inorganic							
Trivalent Chromium	< 0.01	mg/L		[CALC]	11/8/22	11/8/22	
Alkalinity - Bicarbonate (as CaCO3)	78.2	mg/L	1.0	SM 2320 B	11/3/22	11/3/22	
Alkalinity - Carbonate (as CaCO3)	ND	mg/L	1.0	SM 2320 B	11/3/22	11/3/22	
Alkalinity - Hydroxide (as CaCO3)	ND	mg/L	1.0	SM 2320 B	11/3/22	11/3/22	
Alkalinity - Total (as CaCO3)	78.2	mg/L	1.0	SM 2320 B	11/3/22	11/3/22	
Ammonia as N	ND	mg/L	0.20	SM 4500 NH3 H	11/8/22	11/8/22	
Biochemical Oxygen Demand	ND	mg/L	5	SM 5210 B	11/2/22 15:05	11/7/22 10:59	BOD-BL
Chemical Oxygen Demand	ND	mg/L	10	Hach 8000	11/7/22	11/8/22	
Chloride	ND	mg/L	1.00	EPA 300.0	11/2/22	11/3/22	
Cyanide, Total	ND	mg/L	0.002	SM 4500 CN-E	11/7/22	11/8/22	
Cyanide, WAD	ND	mg/L	0.002	SM 4500 CN-IE	11/7/22	11/8/22	
Dissolved Oxygen	9.4	mg/L	1.0	EPA 360.1	11/2/22 14:52	11/2/22 15:05	SPH
Fluoride	0.317	mg/L	0.100	EPA 300.0	11/2/22	11/3/22	
Hexavalent Chromium	ND	mg/L	0.010	SM 3500 Cr-B	11/2/22	11/2/22	
Nitrate + Nitrite, Total, as N	ND	mg/L	0.100	EPA 353.2	11/8/22	11/8/22	
Nitrate as N	ND	mg/L	0.10	EPA 300.0	11/2/22 16:09	11/3/22 0:08	SPH
Nitrite as N	ND	mg/L	0.10	EPA 300.0	11/2/22 16:09	11/3/22 0:08	SPH
Oil & Grease (HEM)	ND	mg/L	5	EPA 1664A	11/4/22	11/7/22	
pH	7.9	pH Units	0.1	SM 4500 H-B	11/3/22 8:36	11/3/22 9:01	SPH
Phenols, Total	ND	mg/L	0.050	EPA 420.4	11/7/22	11/7/22	
Sulfate	188	mg/L	5.00	EPA 300.0	11/8/22	11/9/22	
Sulfide	ND	mg/L	0.1	SM 4500 S2-D	11/4/22	11/4/22	
Total Dissolved Solids (TDS)	408	mg/L	20	SM 2540 C	11/3/22	11/3/22	
Total Kjeldahl Nitrogen	ND	mg/L	1.0	SM 4500 Norg	11/7/22	11/8/22	
Total Suspended Solids (TSS)	11	mg/L	10	SM 2540 D	11/3/22	11/3/22	
Metals							
Arsenic, Total	0.0008	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Boron, Total	ND	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Cadmium, Pot. Diss.	0.0002	mg/L	0.0002	EPA 200.8	11/11/22	11/11/22	
Cadmium, Total	0.0002	mg/L	0.0002	EPA 200.8	11/8/22	11/8/22	

Chromium, Total	0.0005	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22
Cobalt, Total	ND	mg/L	0.01	EPA 200.7	11/3/22	11/3/22
Copper, Pot. Diss.	0.0033	mg/L	0.0010	EPA 200.8	11/8/22	11/8/22
Copper, Total	0.0016	mg/L	0.0010	EPA 200.8	11/8/22	11/8/22
Iron, Total	0.19	mg/L	0.02	EPA 200.7	11/3/22	11/3/22

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Certificate of Analysis

Western Stream Works
Bill Coughlin

631 Sherman Street

Ridgway, CO 81432

PO#:

Receipt: **11/2/22 11:30 @ 2.3** °C
Date Reported: 11/15/2022

Project Name: **Silver Crown - Adit Discharge Full List**

Sample ID: **Adit Discharge (cont.)**

Matrix: **Wastewater**

Lab ID: **22K0187-01**

Date Sampled: **10/31/22 11:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Lead, Pot. Diss.	0.0015	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Lead, Total	0.0013	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Manganese, Total	0.0675	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Mercury, Total	ND	mg/L	0.00015	EPA 245.1	11/9/22	11/9/22	
Nickel, Pot. Diss.	ND	mg/L	0.005	EPA 200.7	11/8/22	11/8/22	
Nickel, Total	ND	mg/L	0.005	EPA 200.7	11/3/22	11/3/22	
Phosphorus, Total as P	ND	mg/L	0.01	EPA 200.7	11/3/22	11/3/22	
Selenium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Silver, Pot. Diss.	ND	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Silver, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Uranium, Total	ND	mg/L	0.0005	EPA 200.8	11/8/22	11/8/22	
Zinc, Total	0.04	mg/L	0.01	EPA 200.8	11/8/22	11/8/22	
Manganese, Pot. Diss.	0.0768	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Zinc, Pot. Diss.	54400	mg/L	0.01	EPA 200.8	11/11/22	11/11/22	
Microbiology							
Coliform, Total	6	Org/100 mL	1	SM 9223 B	11/2/22 12:00	11/3/22 12:15	SPH
E. Coli	ND	Org/100 mL	1	SM 9223 B	11/2/22 12:00	11/3/22 12:15	SPH

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Bill Coughlin

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Ridgway, CO 81432

PO#:

Receipt: **11/2/22 11:30 @ 2.3** °C

Date Reported: 11/15/2022

Project Name: **Silver Crown - Adit Discharge Full List**

Sample ID: **Adit Discharge - Field Filtered**

Matrix: **Wastewater**

Lab ID: **22K0187-02**

Date Sampled: **10/31/22 11:00**

Sampled By: **Bill Coughlin**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Hardness, Soluble as CaCO3	248	mg/L	1.32	SM 2340 B	11/3/22	11/3/22	
Metals							
Aluminum, Dissolved	0.05	mg/L	0.05	EPA 200.7	11/3/22	11/3/22	
Cadmium, Dissolved	0.0002	mg/L	0.0002	EPA 200.8	11/11/22	11/11/22	
Calcium, Dissolved	92.3	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Iron, Dissolved	0.04	mg/L	0.02	EPA 200.7	11/3/22	11/7/22	
Lead, Dissolved	0.0011	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Magnesium, Dissolved	4.1	mg/L	0.2	EPA 200.7	11/3/22	11/3/22	
Manganese, Dissolved	0.0663	mg/L	0.0005	EPA 200.8	11/11/22	11/11/22	
Potassium, Dissolved	0.5	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Sodium, Dissolved	6.4	mg/L	0.5	EPA 200.7	11/3/22	11/3/22	
Zinc, Dissolved	0.0375	mg/L	0.0100	EPA 200.8	11/11/22	11/11/22	

Chemtech-Ford Laboratories

9632 South 500 West
Sandy, UT 84070
O:(801) 262-7299 F: (866) 792-0093

Certificate of Analysis

Western Stream Works
Bill Coughlin

631 Sherman Street

Ridgway, CO 81432

PO#:

Receipt: **11/2/22 11:30 @ 2.3** °C
Date Reported: 11/15/2022

Project Name: **Silver Crown - Adit Discharge Full List**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

BOD-BL = Of the two dilution blanks that were set up with the batch, one slightly failed the maximum depletion criteria. Because the other blank passed, it was determined that the dilution water was not compromised. The BOD results are not adversely affected.
SPH = Sample submitted past method specified holding time.

WJR-26-77

NA EAD

COLORADO DIVISION OF WATER RESOURCES

1313 Sherman Street - Room 818
Denver, Colorado 80203

RECEIVED
MAR 20 1989
WATER RESOURCES STATE ENGINEER COLO.

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREIN. TYPE OR PRINT IN BLACK INK.

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER 147727

WELL OWNER Margaret B. Stern

ADDRESS P.O. BOX 162 Silverton, Co 81433

DATE COMPLETED 10/4/[redacted], 1988

NE ¼ of the NE ¼ of Sec. 27,

T. 42 N, R. 8 W, NM P.M.

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	9'	Peat Dark Brown	
9'	14'	gravel and Rock Gray	10'

TOTAL DEPTH 14'

Use additional pages necessary to complete log.

HOLE DIAMETER

72 in. from 0 to 14 ft.

100 in. from 0 to 14 ft.

___ in. from ___ to ___ ft.

DRILLING METHOD back [redacted] hoe

CASING RECORD:

Plain Casing

Size 30" & kind galvanized STEEL from 0 to 10 ft.

Size ___ & kind ___ from ___ to ___ ft.

Size ___ & kind ___ from ___ to ___ ft.

Perforated Casing

Size 30" & kind galvanized STEEL from 10 to 14 ft.

Size ___ & kind ___ from ___ to ___ ft.

Size ___ & kind ___ from ___ to ___ ft.

GROUTING RECORD

Material cement

Intervals TOP one FOOT

Placement Method hand

GRAVEL PACK: Size 3 TO 6"

Interval 6' TO 14'

TEST DATA

Date Tested _____, 19__

Static Water Level Prior to Test _____ ft.

Type of Test Pump _____

Length of Test _____

Sustained Yield (Metered) _____

Final Pumping Water Level _____

PUMP INSTALLATION REPORT

Pump Make _____

Type _____

Powered by gravity HP _____

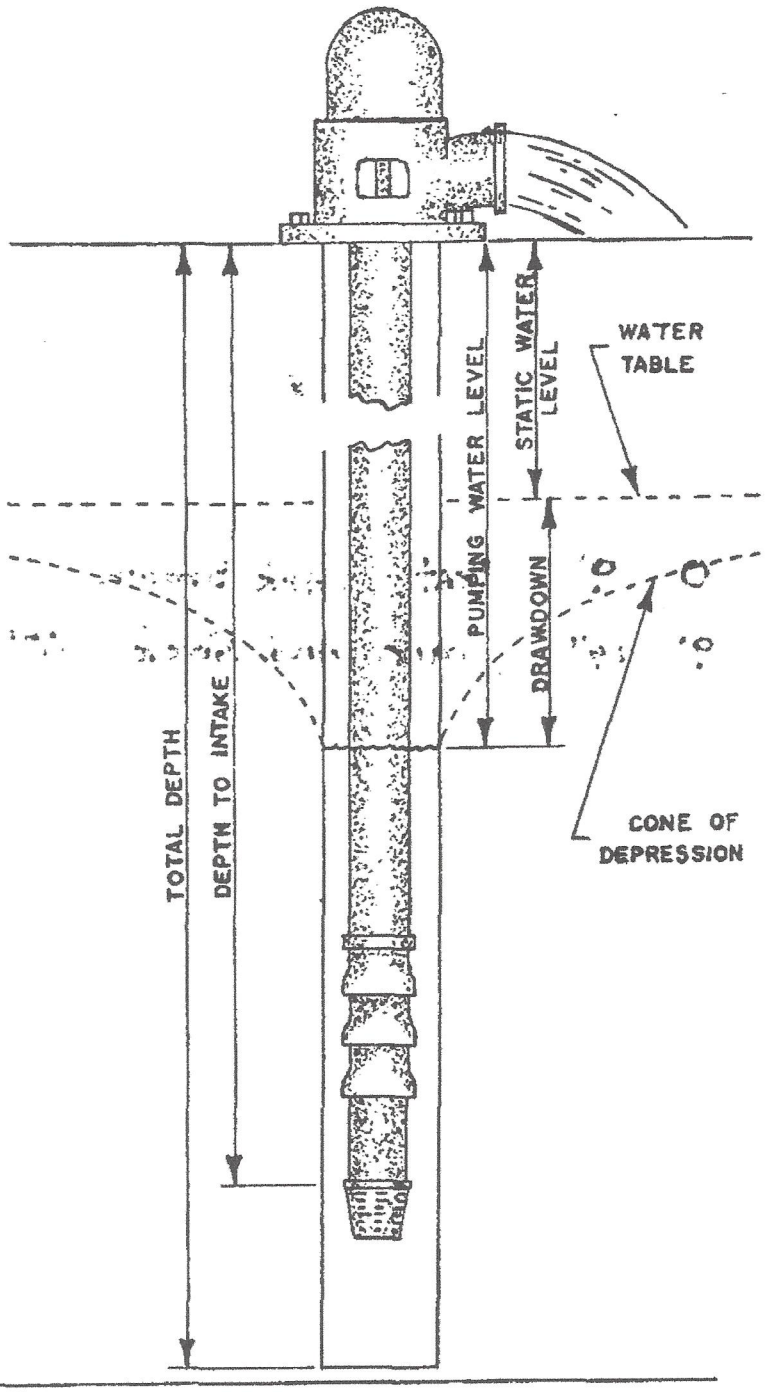
Pump Serial No. _____

Motor Serial No. _____

Date Installed _____

Pump Intake Depth _____

Remarks _____



WELL TEST DATA WITH PERMANENT PUMP

Date Tested _____

Static Water Level Prior to Test _____

Length of Test _____ Hours

Sustained yield (Metered) _____ GPM

Pumping Water Level _____

Remarks _____

CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature Margaret B. Stern License No. SELF

State of Colorado, County of San Juan SS

Subscribed and sworn to before me this 16th day of March, 1992.

My Commission expires: 2/18, 1993.

Notary Public Kathi Richardson

Box 128 Silverton CO 81433

FORM TO BE MADE OUT IN QUADRUPLICATE: WHITE FORM must be an original copy on both sides and signed. WHITE AND GREEN copies must be filed with the State Engineer. PINK COPY is for the Owner and YELLOW COPY is for the Driller.

RECEIVED
NOV 17 1986
WATER RESOURCES
STATE - ENGINEER
COLO.

963
RECEIVED
FEB 18 1986
WATER RESOURCES
STATE - ENGINEER
COLO.

WRJ-5-Rev. 76

COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203

PERMIT APPLICATION FORM

Application must be complete where applicable. Type or print in BLACK INK. No overstrikes or erasures unless initialed.

FOR: (X) A PERMIT TO USE GROUND WATER
(X) A PERMIT TO CONSTRUCT A WELL
(X) A PERMIT TO INSTALL A PUMP

( ) REPLACEMENT FOR NO. _____
( ) OTHER _____
WATER COURT CASE NO. _____

(1) APPLICANT - mailing address

NAME Margaret B. Stern
STREET P.O. Box 162
CITY Silverton, CO (State) 81433 (Zip)
TELEPHONE NO. (work) 303/387-5543

(2) LOCATION OF PROPOSED WELL

County San Juan
NE ¼ of the NE ¼, Section 27
Twp. 42 N (N,S), Rng. 8 W (E,W), NM P.M.

(3) WATER USE AND WELL DATA

Proposed maximum pumping rate (gpm) 15
Average annual amount of ground water to be appropriated (acre-feet): 1.0
Number of acres to be irrigated: 0
Proposed total depth (feet): 10-15'
Aquifer ground water is to be obtained from: gravel and Rock
Owner's well designation —

GROUND WATER TO BE USED FOR:

( ) HOUSEHOLD USE ONLY - no irrigation (0)
(X) DOMESTIC (1)
( ) LIVESTOCK (2)
( ) COMMERCIAL (4)
( ) INDUSTRIAL (5)
( ) IRRIGATION (6)
( ) MUNICIPAL (8)
( ) OTHER (9) _____
DETAIL THE USE ON BACK IN (11)

(4) DRILLER

Name Self
Street _____
City _____ (State) (Zip)
Telephone No. _____ Lic. No. _____

FOR OFFICE USE ONLY: DO NOT WRITE IN THIS COLUMN

Receipt No. 62407 /
Basin _____ Dist. _____

CONDITIONS OF APPROVAL

This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

( ) APPROVED PURSUANT TO CRS 37-92-602 (3) (b) (I).

2) THE USE OF GROUNDWATER FROM THIS WELL IS LIMITED TO FIRE PROTECTION, ORDINARY HOUSEHOLD PURPOSES INSIDE A SINGLE FAMILY DWELLING, THE IRRIGATION OF NOT MORE THAN ONE ACRE OF HOME GARDENS AND LAWNS, AND THE WATERING OF DOMESTIC ANIMALS.

3) THE WELL SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EXCEPTION GRANTED BY THE BOARD OF EXAMINERS FOR WATER WELL CONSTRUCTION CONTRACTORS ON APRIL 24, 1987. THE APPLICANT MUST SUBMIT A WELL COMPLETION REPORT DETAILING FINAL CONSTRUCTION. M.M. 4-28-87

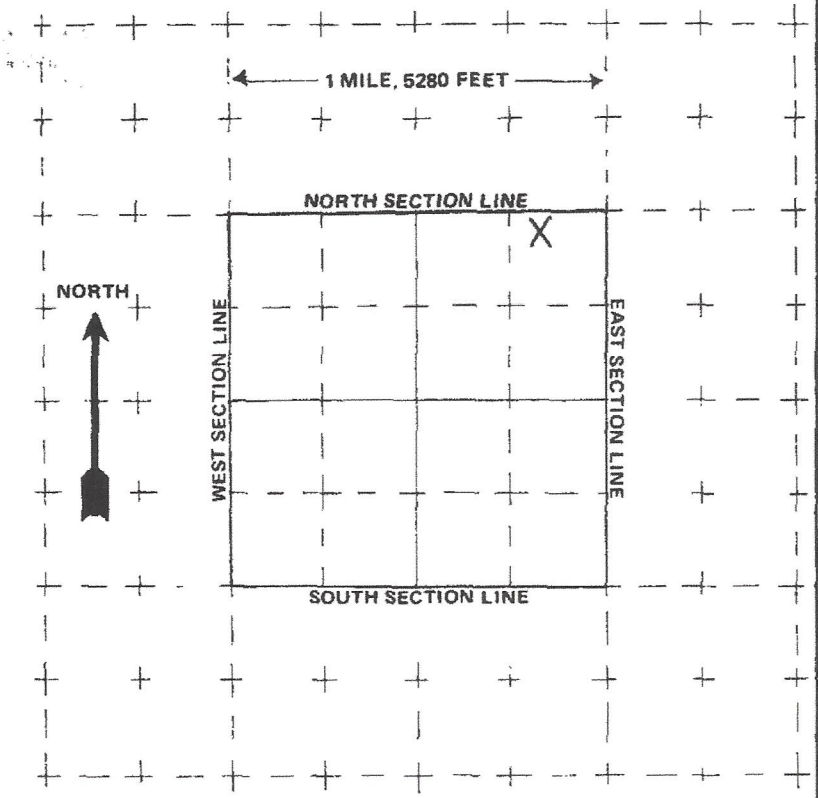
APPLICATION APPROVED

PERMIT NUMBER 147727
DATE ISSUED MAY 05 1987
EXPIRATION DATE MAY 05 1989

Robert G. Longenbaugh
(STATE ENGINEER)
BY Assistant Steve Lautenschlager

I.D. 7-30 COUNTY 56

(5) THE LOCATION OF THE PROPOSED WELL and the area on which the water will be used must be indicated on the diagram below. Use the CENTER SECTION (1 section, 640 acres) for the well location.



The scale of the diagram is 2 inches = 1 mile
Each small square represents 40 acres.

WATER EQUIVALENTS TABLE (Rounded Figures)

An acre-foot covers 1 acre of land 1 foot deep
1 cubic foot per second (cfs) . . . 449 gallons per minute (gpm)
A family of 5 will require approximately 1 acre-foot of water per year.
1 acre-foot . . . 43,560 cubic feet . . . 325,900 gallons.
1,000 gpm pumped continuously for one day produces 4.42 acre-feet.

(6) THE WELL MUST BE LOCATED BELOW by distances from section lines.

200 ft. from North (north or south) sec. line

900 ft. from East (east or west) sec. line

LOT _____ BLOCK _____ FILING # _____

SUBDIVISION _____

(7) TRACT ON WHICH WELL WILL BE LOCATED Owner: same as #1

No. of acres 5. Will this be the only well on this tract? yes

(8) PROPOSED CASING PROGRAM

Plain Casing

7 in. from 0 ft. to 10 ft.

_____ in. from _____ ft. to _____ ft.

Perforated casing

7 in. from 5 ft. to 10 ft.

_____ in. from _____ ft. to _____ ft.

(9) FOR REPLACEMENT WELLS give distance and direction from old well and plans for plugging it:

N/A

(10) LAND ON WHICH GROUND WATER WILL BE USED:

Owner(s): N/A No. of acres: _____

Legal description: _____

(11) DETAILED DESCRIPTION of the use of ground water: **Household use and domestic wells must indicate type of disposal system to be used.**

domestic use; leech fields

(12) OTHER WATER RIGHTS used on this land, including wells. Give Registration and Water Court Case Numbers.

Type or right	Used for (purpose)	Description of land on which used
none		

(13) THE APPLICANT(S) STATE(S) THAT THE INFORMATION SET FORTH HEREON IS TRUE TO THE BEST OF HIS KNOWLEDGE.

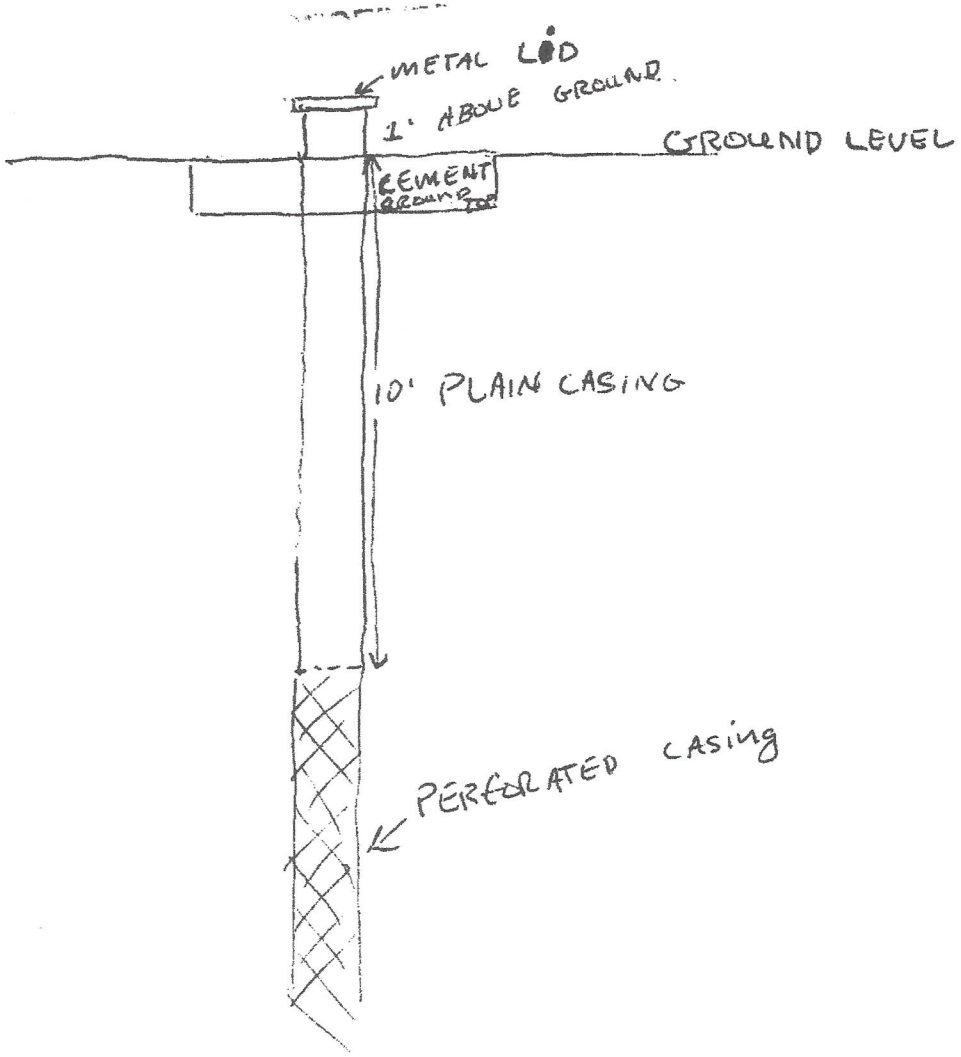
Margaret B. Stern

SIGNATURE OF APPLICANT(S)

Use additional sheets of paper if more space is required.

RECEIVED
NOV 17 1986
WATER RESOURCES
STATE ENGINEER
COLO.

77



RECEIVED
NOV 17 1986
WATER RESOURCES
STATE ENGINEER

COLORADO DIVISION OF WATER RESOURCES
818 Centennial Building, 1313 Sherman Street
Denver, Colorado 80203

FROM: Mel Malley
DATE: 2-20-86
PHONE: (303) 866-3587

APPLICANT (X) WELL DRILLER ( ) AGENT ( ) ATTORNEY ( )

RE: Well Permit Application

Receipt No. 62407

Your application for a well permit is being returned for the reason(s) indicated below. The additional data and corrections which we are requesting will aid us in evaluating your application. Prompt completion or correction of ALL items checked and the immediate return of the application to this office will expedite its processing. Please make corrections on the application, NOT on this flyer. Thank you for your attention.

PLEASE INITIAL ALL CHANGES--PLEASE TYPE OR PRINT IN BLACK INK

Item Nos.		
	( )	Statute requires a $____ fee for this application. Please return the application with required fee.
2	( )	The well location must be designated by the county and the 1/4 of 1/4, Section, Township, Range and P.M.
2,6,10	( )	The 1/4 of 1/4 section (Item 2) does not agree with distances from section lines (Item 6). Distances place well in _____ 1/4 of _____ 1/4.
3,11	( )	For a HOUSEHOLD USE ONLY WELL, no irrigation of lawns or gardens or stock watering can be permitted.
3,11	( )	For a DOMESTIC WELL, no more than one (1) acre of lawn or gardens can be irrigated (Item 3).
3	( )	Please indicate the proposed total depth.
3	( )	If this well is to be used for HOUSEHOLD PURPOSES ONLY, with no lawn or garden watering, please indicate on the application under "Ground Water to be Used For." Do not indicate HOUSEHOLD USE ONLY and DOMESTIC as they are different.
6	( )	Distances from section lines must be shown.
8	( )	The proposed casing program must be completed.
9	( )	The existing well must be plugged and abandoned according to rules and regulations. Please include the distance and direction from the old well.
10	( )	If this well is to be the only well on 35 acres or more, please describe the acreage on the back of the application in Item 10. PLEASE ATTACH FULL METES AND BOUNDS PROPERTY DESCRIPTION OR SURVEY.
11	( )	Please indicate the specific use intended for the water, and the type of disposal system to be used, or a copy of the disposal permit.
12	( )	Please describe other water rights on this land and their use.
13	( )	Signature of applicant is required on application unless it is accompanied by a power of attorney.
	( )	Please provide a copy of a tax receipt, a surveyor's plat or a warranty deed to show ownership of the property described in Items 6 and 10. This must give the date when the land was subdivided.
	( )	Please complete Item(s) _____ where checked.
	( )	Please complete the enclosed ownership affidavit in full and return it with your application.
	(X)	Other: 5 feet of plain casing does not meet the requirements of the construction regulations. If you only intend to use 5 feet of plain casing you need to request an exception from the regulations. We need a drawing showing how the well would be constructed and sealed.

ROY ROMER
Governor

JERIS A. DANIELSON
Secretary

BOARD OF EXAMINERS OF WATER WELL CONSTRUCTION AND PUMP INSTALLATION CONTRACTORS
DIVISION OF WATER RESOURCES
1313 Sherman Street-Room 818
Denver, Colorado 80203
(303) 866-3581

April 24, 1987

Margaret B. Stern
P.O. Box 162
Silverton, CO 81433

RE: Exception to Rules and Regulations for well located in the Chattanooga-Mill Creek area in Section 27, Township 42 North, Range 8 West of the N.M. Principal Meridian, in San Juan County

Dear Ms. Stern:

Your November 17, 1986 request for exceptions to Section (2)(a) and table 1 of the rules and regulations for well construction for the above referenced well has been reviewed.

The Board of Examiners of Water Well Construction and Pump Installation Contractors has granted your request to allow the well to be constructed with less than ten (10) feet of blank casing and less than ten (10) feet of grout pursuant to the diagram submitted with your request. All other applicable construction rules shall be complied with. The following precautions should be taken:

1. The ground around the casing should be compacted and slope away from the structure to prevent surface run-off from ponding around the casing.

2. The cover should be tight and sealed to prevent water seepage and debris from entering the structure, and the discharge and electrical conduct line juncture with the casing must be sealed.

3. The water should be periodically checked for potability.

4. The area should be fenced to keep wildlife and livestock from disturbing the area that was excavated.

Upon completion of the well, a completion report and log must be submitted to the Division of Water Resources.

George Hier, Chairman, Castle Rock; Ken Rollin, Longmont; George Meriwether, Monte Vista; and Michael J. Liuzzi, Denver

If you have any questions about this matter, please contact this office.

Sincerely,

Bruce E. DeBrine

Bruce E. DeBrine, Acting Secretary,
Board of Examiners of Water Well
Construction and Pump Installation
Contractors

BED/llh
cc: Ground Water Section
9672I

SAN JUAN COUNTY PUBLIC HEALTH
SILVERTON
preventive health at its peak

On-Site Wastewater Treatment System (OWTS) Permit Application

Owner: Bonanza Boy LLC c/o Colby Barrett Phone: (303) 909-6083
Project Address (street, town/city, zip): Shelbyville Lode, 0560 CR 15, Near Chattanooga on Hwy 550.
Assessor's Parcel #* 4777 0280 0400 01 Subdivision: Silver Cloud P.U.D. Lot#: N/A
Lot Size: >10 (acres) # of Dwellings: 1 Lodge # of Bedrooms: up to 12 Water Supply: Adit and Creek
List Commercial Uses (e.g., office, factory, event venue): 1 Proposed Backcountry Lodge
Owner's Mailing Address: Bonanza Boy LLC, PO Box 992, Montrose CO 81402
Owner's Email Address: cbarrett17@gmail.com

For detailed parcel information please visit your county assessor's website or see your property tax statement*

On-site Wastewater Treatment System (OWTS) Permit Types

Choose the most applicable permit type from the list below and check the box in upper-left corner

☒ **New Construction - ($1123.00)** ***For new OWTS and complete system replacement*** • Contact Registered Soil Technician and/or Professional Engineer (PE) or system designer for analysis and design development. A PE may be required dependent on site and soil conditions. • A design must be submitted to La Plata County (LPC). San Juan County (SJC) must have payment for LPC to to review designs for permit issuance.	☐ **Alteration - ($1068.00)** ***For changes/additions to existing permitted OWTS*** • Contact Registered Soil Technician and/or Professional Engineer (PE) or system designer for analysis and design development. A PE may be required dependent on site and soil conditions. • A design must be submitted to La Plata County (LPC). San Juan County (SJC) must have payment for LPC to review designs for permit issuance.
☐ **Change Of Use - ($518.00)** ***For expanded use (e.g., bedroom count) of an existing permit without system modifications, OR new service connections (e.g., garages, shops) added to an existing permit*** • For expanded use, provide a certification report from a Professional Engineer (PE) or system designer. • For new service connections, provide a proposed site plan and describe scope of work below. • Change of Use does NOT allow for connection of new uses (e.g., second dwellings, ADUs) unless the system was originally designed for it – use Alteration instead	☐ **Minor Repair - ($408.00)** ***For replacement of OWTS components with no change to permitted use*** • Submit application with payment, transfer of title inspection report (if available) and a simple site plan showing location of repairs. • List repairs/scope of work below (e.g. tank replacement, aerators, pipe repairs, etc.) • A permit is NOT required for repair of components that do not provide treatment (e.g., fencing, tank lids, inspection ports)

Please describe in detail work to be completed: Proposed OWTS to serve proposed backcountry lodge with up to 12 guest rooms. Please refer to Preliminary Design Plans for the proposed OWTS prepared by Brent Huskcrowther PE and Brian Briggs PE.

I acknowledge: **(1) The information provided in this application is true and accurate to the best of my knowledge; (2) Submittal of this application does not constitute or guarantee approval of the requested permit or document; (3) Issuance of the requested permit or document does not assure that: (a) Final approval of the proposed system will be obtained upon inspection; or that (b) The permitted OWTS system will operate as intended; and that (4) I am responsible for the proper installation, repairs and maintenance of the OWTS system in accordance with the rules and regulations set forth in the OWCPH regulations, as well as any specific conditions of approval that may be imposed on issuance of the requested permit or document.**

Owner's Signature: _____ **Date:** _____

Submit completed application to eh@lpcgov.org or at our office location.

This is NOT a permit; this application does not authorize construction or repairs.

All OWTS construction/repair work must be performed by an installer licensed by O h #

SAN JUAN COUNTY PUBLIC HEALTH
SILVERTON
preventive health at its peak

On-Site Wastewater Treatment System (OWTS) Permit Application

Owner: BONANZA BOY LLC c/o COLBY BARRETT Phone: (303) 909-6083
Project Address (street, town/city, zip): SHELBYVILLE LODE, 0560 CR 15, NEAR CHATTANOOGA AND HWY 550
Assessor's Parcel #* 4777 0220 0400 06 Subdivision: SILVER CLOUD PUD Lot#: N/A
Lot Size: >10 (acres) # of Dwellings: 1 CAMPGROUND # of Bedrooms: 8 TENTS Water Supply: ADIT + CREEK
List Commercial Uses (e.g., office, factory, event venue): ONE PROPOSED SUMMER-ONLY CAMPGROUND WITH 8 TENT SPOTS
Owner's Mailing Address: BONANZA BOY LLC, PO BOX 992, MONTROSE CO 81402
Owner's Email Address: cbarrett617@gmail.com

For detailed parcel information please visit your county assessor's website or see your property tax statement*

On-site Wastewater Treatment System (OWTS) Permit Types

Choose the most applicable permit type from the list below and check the box in upper-left corner

☒ **New Construction - ($1123.00)** ***For new OWTS and complete system replacement*** • Contact Registered Soil Technician and/or Professional Engineer (PE) or system designer for analysis and design development. A PE may be required dependent on site and soil conditions. • A design must be submitted to La Plata County (LPC). San Juan County (SJC) must have payment for LPC to to review designs for permit issuance.	☐ **Alteration - ($1068.00)** ***For changes/additions to existing permitted OWTS*** • Contact Registered Soil Technician and/or Professional Engineer (PE) or system designer for analysis and design development. A PE may be required dependent on site and soil conditions. • A design must be submitted to La Plata County (LPC). San Juan County (SJC) must have payment for LPC to review designs for permit issuance.
☐ **Change Of Use - ($518.00)** ***For expanded use (e.g., bedroom count) of an existing permit without system modifications, OR new service connections (e.g., garages, shops) added to an existing permit*** • For expanded use, provide a certification report from a Professional Engineer (PE) or system designer. • For new service connections, provide a proposed site plan and describe scope of work below. • Change of Use does NOT allow for connection of new uses (e.g., second dwellings, ADUs) unless the system was originally designed for it – use Alteration instead	☐ **Minor Repair - ($408.00)** ***For replacement of OWTS components with no change to permitted use*** • Submit application with payment, transfer of title inspection report (if available) and a simple site plan showing location of repairs. • List repairs/scope of work below (e.g. tank replacement, aerators, pipe repairs, etc.) • A permit is NOT required for repair of components that do not provide treatment (e.g., fencing, tank lids, inspection ports)

Please describe in detail work to be completed: PROPOSED OWTS TO SERVE PROPOSED CAMPGROUND WITH 8 SUMMER-ONLY TENT PLATFORMS AND A CAMPER SHOWER/TOILET/SINK FACILITY. PLEASE REFER TO THE PRELIMINARY OWTS DESIGN PLANS PREPARED BY BRENT HUSK CROWTHER PE AND BRIAN BRIGGS PE.

I acknowledge: (1) The information provided in this application is true and accurate to the best of my knowledge; (2) Submittal of this application does not constitute or guarantee approval of the requested permit or document; (3) Issuance of the requested permit or document does not assure that: (a) Final approval of the proposed system will be obtained upon inspection; or that (b) The permitted OWTS system will operate as intended; and that (4) I am responsible for the proper installation, repairs and maintenance of the OWTS system in accordance with the rules and regulations set forth in the oWCPH regulations, as well as any specific conditions of approval that may be imposed on issuance of the requested permit or document.

Owner's Signature: _____ **Date:** _____

Submit completed application to eh@lpcgov.org or at our office location.

This is NOT a permit; this application does not authorize construction or repairs.

All OWTS construction/repair work must be performed by an installer licensed by O h #

COLORADO
Department of Public Health & Environment

Water Quality Control Division
Engineering Section

4300 Cherry Creek Drive South, B2
Denver, Colorado 80246-1530
CDPHE.WQEngReview@state.co.us
303-692-6298

Regulation 22 Site Location Application Form
Section 22.6 - New Domestic Wastewater Treatment Plant

A. Project and System Information			
System Name	PROPOSED BONANZA BOY MILL SITE OWTS FOR PROPOSED EMPLOYEE HOUSING.		
Project Title	PART OF THE PROPOSED SILVER CLOUD PLANNED UNIT DEVELOPMENT (PUD)		
County	SAN JUAN COUNTY COLORADO		
CDPS Permit No.	TBD		
Date Fee Paid or payment attached		Invoice Number and Check Number	
Design Company Name	BK BRIGGS & ASSOC.		
Design Engineer	BRIAN BRIGGS PE	CO License Number	31956
Address	403 N. 1ST ST.		
	MONTROSE CO 81401		
Email	bbriggs@bkbassoc.com	Phone	(970) 596-1982
Applicant/Entity	BONANZA BOY LLC		
Representative Name	COLBY BARRETT		
Address	PO BOX 992		
	MONTROSE CO 81402		
Email	cbarrett17@gmail.com	Phone	(303) 909-6083

B. Project Information			
Location (existing or proposed site)		***Proposed Project Design Capacity***	
Brief location description	BONANZA BOY MILL SITE ON HWY 550 AT CHATTANOOGA	Hydraulic Capacity Maximum Month Average	>2000 GPD MGD
Legal Description (e.g., Township, Range)	42N - 8W	Peak Hour Hydraulic Capacity	>2000 GPD MGD
County	SAN JUAN		
Latitude	TBD	Organic Loading Capacity - Treatment Plant Only (Maximum Month Average)	TBD lbs. BOD_5/day or lbs. cBOD/day
Longitude	TBD		

Funding Process	Will the State Revolving Fund (SRF) loan program be used to finance any portion of the project?	Yes	☐	No	☒	If yes, please list project number	N/A

Project Schedule and Cost Estimate	
Estimated Bid Opening Date	2026
Estimated Completion Date	2026
Estimated Project Cost	$50,000

Gmail Lisa Adair <engineermountaininc@gmail.com>

RE: Silver Cloud Lodge/PUD Power

1 message

Ken Gardner <kensolar123@gmail.com> Fri, Jan 26, 2024 at 4:32 PM
To: Lisa Adair <engineermountaininc@gmail.com>, Brian Briggs <Bbriggs@bkbassoc.com>, Colby Barrett <cbarrett17@gmail.com>, Kurtis Duncan <kurtis.gduncan@gmail.com>
Cc: Gabe Stephens <blackcanyonre@gmail.com>

Lisa,

We surveyed the location of a potential hydro stream diversion and power house. We measured 256 feet of gross head (elevation difference) and calculated 252 feet of net head using 1 cfs in a 10" diameter HDPE pipeline (9.409" ID) 1,458 feet in length. The hydro power potential at 1 cfs (448.8 gpm) is 13 kW which could generate 9,672 kWh in January. The turbine can run all year long depending on water availability. We could generate 14.7 kW with a flow of 1.2 cfs. (538.8 gpm) The turbine needle nozzle can be adjusted manually to match water flow.

The same Mill Creek water could be diverted at a lower location near the employee housing to generate power using a "Scott Hydro turbine" assuming 30 feet of head and 450 gpm which would produce 1,335 watts (1.33 kW). The system could provide 993 kWh in January.

Scott hydro turbine package



The complete off grid - Includes Inverter -Option #3

Option #2 plus a Magnum 4000 watt Sinewave Inverter/Charger, and disconnect. This option provides conventional 120/240 VAC from batteries and charges batteries from a generator if required. Prewired and mounted on a 19" x 34" backboard. **$10835**

Hydro Graph Bill Scott

Volts	Amps	Watts	PSI	RPM	GPM
87	13.4	312	6	630	290
130	18	440	7	660	300
133	23	570	8	690	320
131	28	700	9	720	350
131	32.5	830	10	745	375
135	36	900	11	820	390
143	39.6	1000	12	846	400
143	43.6	1115	13	915	425
189	50	1335	14	1087	450
190	52.4	1400	15	1100	465

Everything depends on water availability. I have recommended that a permanent weir be installed to verify monthly flows. Let he know your thoughts.

Ken Gardner C.E., S.E., L.S., Master Electrician

GARDNER HYDRO

5566 South 200 West

Washington Terrace, Utah 84405

(801) 589-0447

Kensolar123@gmail.com

Sent from Mail for Windows

Silver Cloud Area Electrical Energy Production – Solar Electric and Hydroelectric Power
General

Power and energy demand for any new facility are estimates at best. Electrical energy use for the Silver Cloud Lodge area was previously calculated. Energy use for the Bonanza area employee housing and welcome center is assumed at 150 kWh/day based upon similar projects. It is important in off-grid facilities to optimize the use of propane for space heating, clothes drying, cooking, and water heating. It is usually hard for those living off-grid to understand that electrical energy is not limitless both in power demand and energy. Care must be taken to use onsite produced and stored energy efficiently and wisely.

The calculations for solar energy production assume that solar modules are free of snow. Methods and procedures will need to be developed for winter operation to clear snow from solar modules or rely on propane backup generators to make up for the energy loss due to snow covered solar modules. The available sun hours at the lodge were reduced approximately 25% due to shading from close mountain ridges blocking morning and afternoon sunlight.

It is assumed that 1 cfs of water flow will always be available for hydroelectric power generation with both the Lodge and Bonanza hydroelectric facilities. Power can be generated with less flow for each plant. The Lodge plant will be designed to generate up to 20 kW if more water flow is available. The Bonanza plant will be designed for 2 kW of power if additional flow is available.

Silver Cloud Lodge - hydroelectric facility
The proposed hydroelectric facility will generate 14 kW year-round with 1 cfs of continuous water flow. Power will be generated at 480 Volt 3-phase and transmitted from the concrete hydro building built into the hillside to the lodge where it will be transformed to 208 Volt 3-phase. Excess generated energy will be stored in batteries to be used during peak energy use times.

Silver Cloud Lodge – solar electric facility
Sufficient roof space is available at the lodge for more than 40 kW of southerly facing solar. Additional space is available if additional solar is needed in the future.

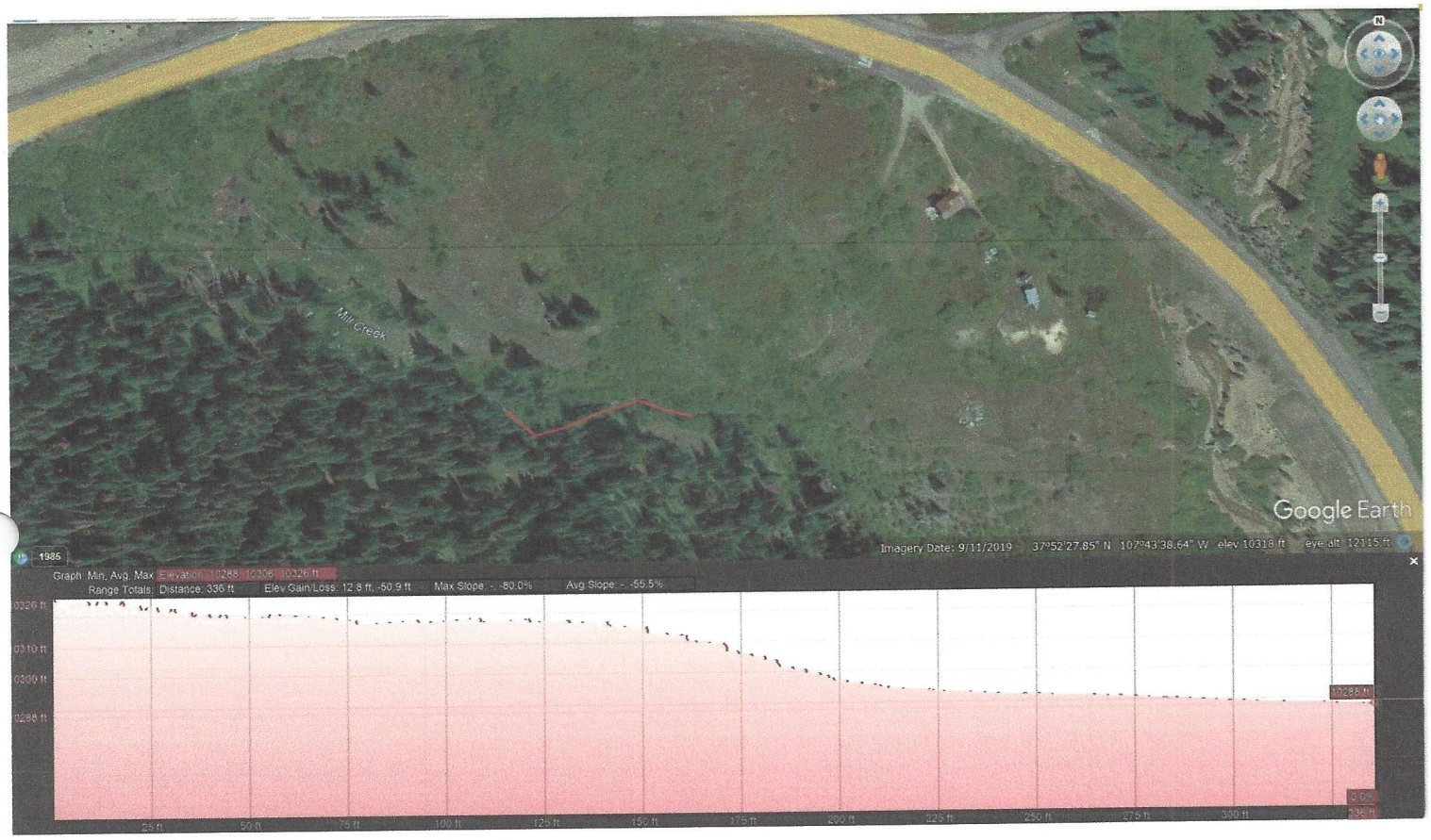
Bonanza – solar electric facility
A total of 50 kW of solar will potentially be needed for the Bonanza site, based upon energy need assumptions, to supplement hydroelectric power. One central solar electric system with batteries and inverters will distribute power to all associated buildings. Solar modules may be placed on all buildings with a south face.

Silver Cloud Lodge Energy Needs

Month	January	February	March	April	May	June	July	August	September	October	November	December
days in month	31	28	31	30	31	30	31	31	30	31	30	31
non-thermal (kWh)	5231.3	4725.0	5231.3	5062.5	5231.3	5062.5	5231.3	5231.3	5062.5	5231.3	5062.5	5231.3
underground heating (kWh)	1339.2	1209.6	1339.2	1296.0	1339.3	1296.0	1339.2	1339.2	1296.0	1339.2	1296.0	1339.2
aboveground heating (kWH)	5728.8	5241.6	5133.6	4140.0	3310.8	2304.0	2008.8	2083.2	2556.0	3906.0	4536.0	5691.6
Total (kWh)	12299.3	11176.2	11704.1	10498.5	9881.3	8662.5	8579.3	8653.7	8914.5	10476.5	10894.5	12262.1
Peak sun hours at lodge	3.0	3.2	5.2	5.0	5.0	5.1	4.0	4.5	4.2	4.1	3.5	2.6
40 kW solar array (kWh-month)	3125.0	3011.0	5416.0	5040.0	5208.0	5141.0	4166.0	4687.0	4234.0	4271.0	3528.0	2708.0
Hydro energy production (14 kw)	10416.0	9408.0	10416.0	10080.0	10416.0	10080.0	10416.0	10416.0	10080.0	10416.0	10080.0	10416.0
Total (kWh)	13541.0	12419.0	15832.0	15120.0	15624.0	15221.0	14582.0	15103.0	14314.0	14687.0	13608.0	13124.0
Excess energy (supply-demand kWh)	1241.8	1242.8	4128.0	4621.5	5742.7	6558.5	6002.8	6449.4	5399.5	4210.6	2713.5	862.0

Bonanza Boy Site Energy Needs

Month	January	February	March	April	May	June	July	August	September	October	November	December
days in month	31	28	31	30	31	30	31	31	30	31	30	31
Monthly energy use	4650.0	4200.0	4650.0	4500.0	4650.0	4500.0	4650.0	4650.0	4500.0	4650.0	4500.0	4650.0
Peak sun hours at Bonanza Boy	4.2	4.4	6.3	6.9	7.1	7.3	5.9	5.5	5.5	5.3	4.5	3.8
50 kW solar array (kWh-month)	4044.0	4123.0	6800.0	7510.0	8107.0	7966.0	6783.0	6082.0	5492.0	5248.0	4204.0	3553.0
Hydro energy production (1.33 kw)	989.5	893.8	989.5	957.6	989.5	957.6	989.5	989.5	957.6	989.5	957.6	989.5
Total (kWh)	5033.5	5016.8	7789.5	8467.6	9096.5	8923.6	7772.5	7071.5	6449.6	6237.5	5161.6	4542.5
Excess energy (supply-demand kWh)	383.5	816.8	3139.5	3967.6	4446.5	4423.6	3122.5	2421.5	1949.6	1587.5	661.6	-107.5


Mill creek
Google Earth
1985
Imagery Date: 9/11/2019 37°52'27.85" N 107°43'38.64" W elev 10318 ft eye alt 12115 ft
Graph: Min, Avg, Max Elevation: 10288 10306 10326 ft
Range Totals: Distance: 336 ft Elev Gain/Loss: 12.8 ft, -50.9 ft Max Slope: -, -80.0% Avg Slope: -, -55.5%
10326 ft
10319 ft
10306 ft
10288 ft
10288 ft
0 0%
336 ft
25 ft
50 ft
75 ft
100 ft
125 ft
150 ft
175 ft
200 ft
225 ft
250 ft
275 ft
300 ft

NREL

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at //sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

69,912 kWh/Year*

System output may range from 66,843 to 71,702 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	3.25	4,044
February	3.71	4,123
March	5.67	6,800
April	6.69	7,510
May	7.28	8,107
June	7.68	7,966
July	6.30	6,783
August	5.62	6,082
September	5.15	5,492
October	4.54	5,248
November	3.60	4,204
December	2.88	3,553
Annual	5.20	69,912

Location and Station Identification

Requested Location	silverton, colorado
Weather Data Source	Lat, Lng: 37.81, -107.66 0.7 mi
Latitude	37.81° N
Longitude	107.66° W

PV System Specifications

DC System Size	50 kW
Module Type	Standard
Array Type	Fixed (roof mount)
System Losses	16%
Array Tilt	12°
Array Azimuth	120°
DC to AC Size Ratio	1.2
Inverter Efficiency	96%
Ground Coverage Ratio	0.4
Albedo	*From weather file*
Bifacial	No (0)
Monthly Irradiance Loss	Jan 0% Feb 0% Mar 0% Apr 0% May 0% June 0% July 0% Aug 0% Sept 0% Oct 0% Nov 0% Dec 0%

NREL

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The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

55,930 kWh/Year*

System output may range from 53,474 to 57,361 kWh per year near this location.

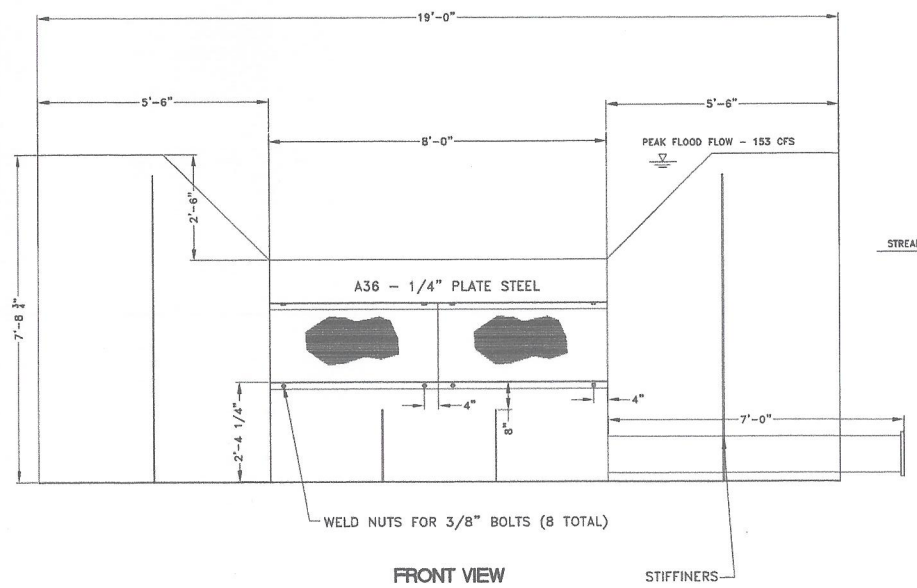
Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	3.25	3,235
February	3.71	3,298
March	5.67	5,440
April	6.69	6,008
May	7.28	6,485
June	7.68	6,373
July	6.30	5,427
August	5.62	4,866
September	5.15	4,394
October	4.54	4,198
November	3.60	3,363
December	2.88	2,843
Annual	5.20	55,930

Location and Station Identification

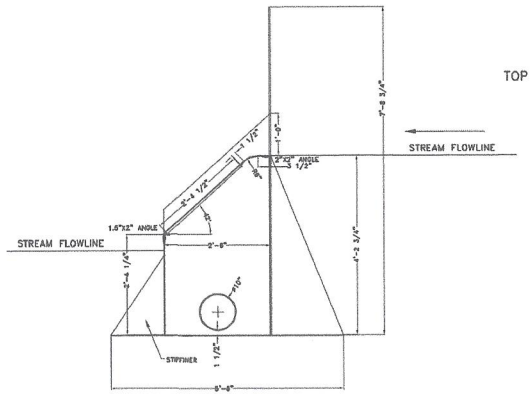
Requested Location	Silverton, Colorado
Weather Data Source	Lat, Lng: 37.81, -107.66 0.7 mi
Latitude	37.81° N
Longitude	107.66° W

PV System Specifications

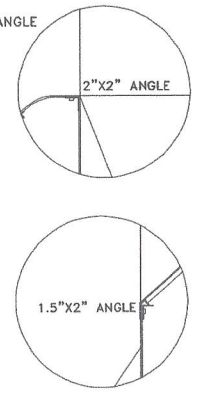
DC System Size	40 kW
Module Type	Standard
Array Type	Fixed (roof mount)
System Losses	16%
Array Tilt	12°
Array Azimuth	120°
DC to AC Size Ratio	1.2
Inverter Efficiency	96%
Ground Coverage Ratio	0.4
Albedo	*From weather file*
Bifacial	No (0)
Monthly Irradiance Loss	Jan 0% Feb 0% Mar 0% Apr 0% May 0% June 0% July 0% Aug 0% Sept 0% Oct 0% Nov 0% Dec 0%



FRONT VIEW

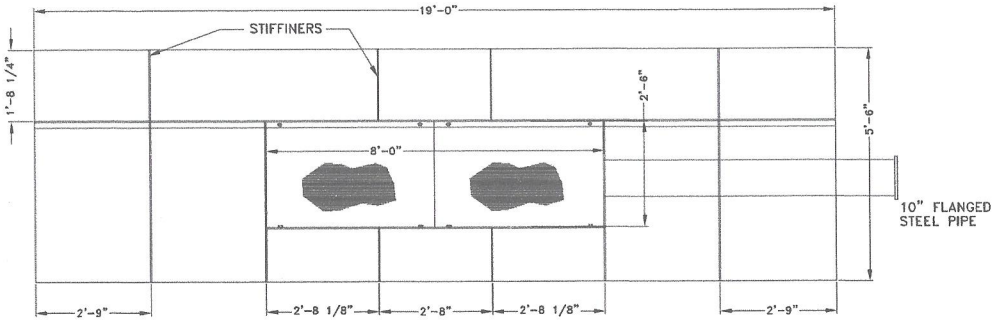


SIDE VIEW

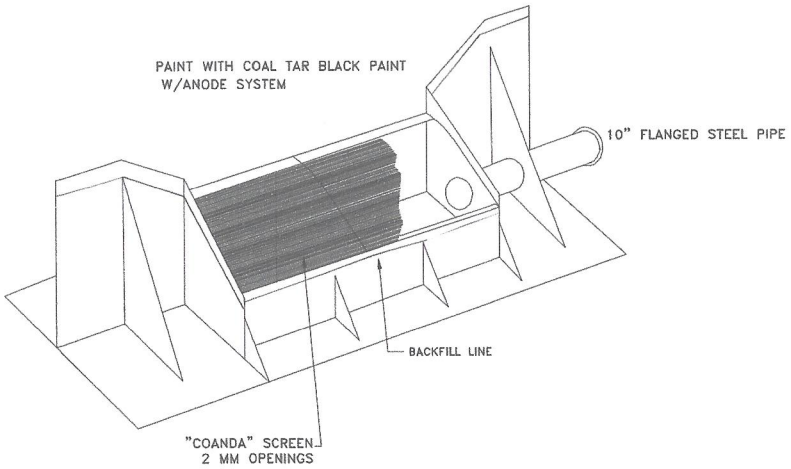


BOTTOM ANGLE

PEAK FLOW = 153 CFS ($3.32 \times 8 \times 3.2^{1.5}$)



TOP VIEW



SILVER CLOUD LODGE

FABRICATED STEEL DIVERSION WALL
HYDROELECTRIC DIVERSION DETAILS

SILVERTON, COLORADO

SCALE: N.T.S
DATE: SEPT. 2020
DESIGN: K.E.G.
DRAWN: K.E.G.
CHECKED:
DWG: ...COMMERCIAL\2023\BARRETT_COLBY.DWG

REVISIONS

DATE	DESCRIPTION

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WASHINGTON TERRACE
UTAH 84405
(801) 589-0447

KEN GARDNER, P.E., L.S.
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PROFESSIONAL LAND SURVEYOR - UTAH 154270-2201
LICENSED ELEC/SOLAR CONTRACTOR - UTAH 6399860-5501
MASTER ELECTRICIAN - UTAH 154270-5502
NABCEP CERTIFICATE NUMBER R031806-17

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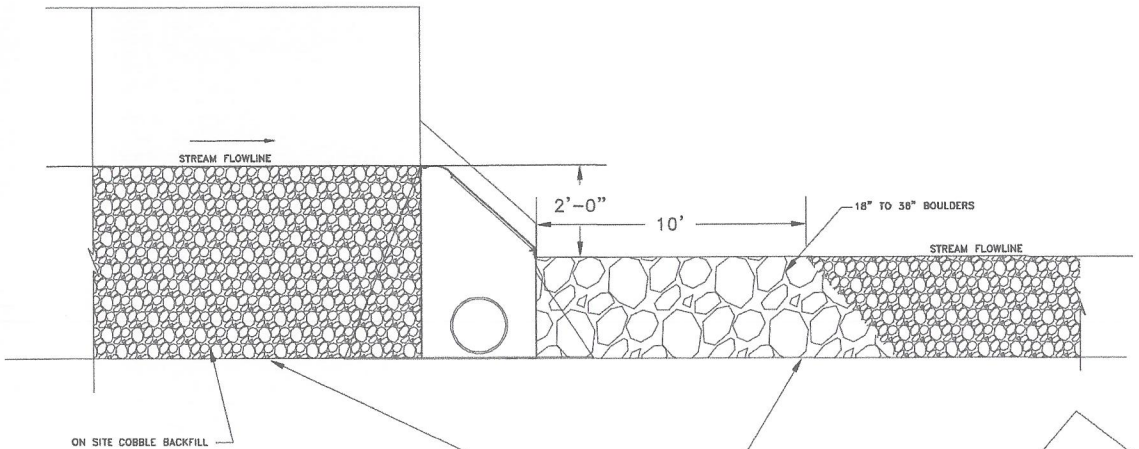
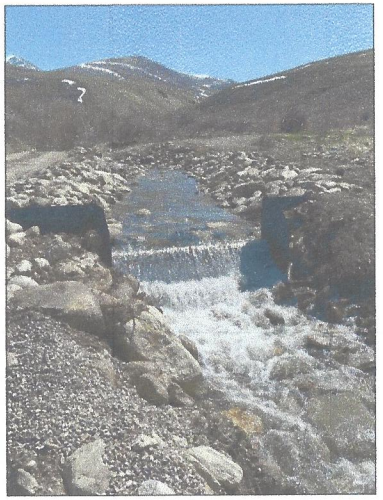
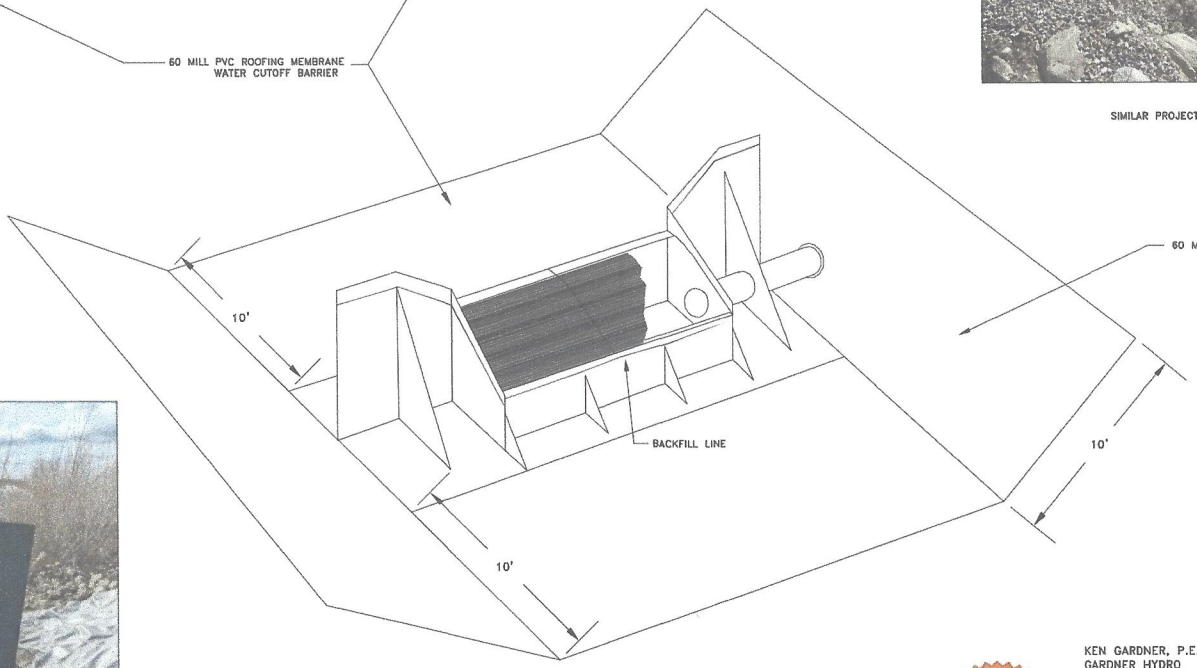
NABCEP CERTIFIED PV Installation Professional

1
2





SIMILAR PROJECT EXAMPLE



ANODE PROTECTION SYSTEM



SIMILAR PROJECT EXAMPLE

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NABCEP CERTIFICATE NUMBER R031806-17

(801) 589-0447 CELL

SCALE: N.T.S
DATE: DEC. 2023
DESIGN: K.E.G.
DRAWN: K.E.G.
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REVISIONS

DATE	DESCRIPTION

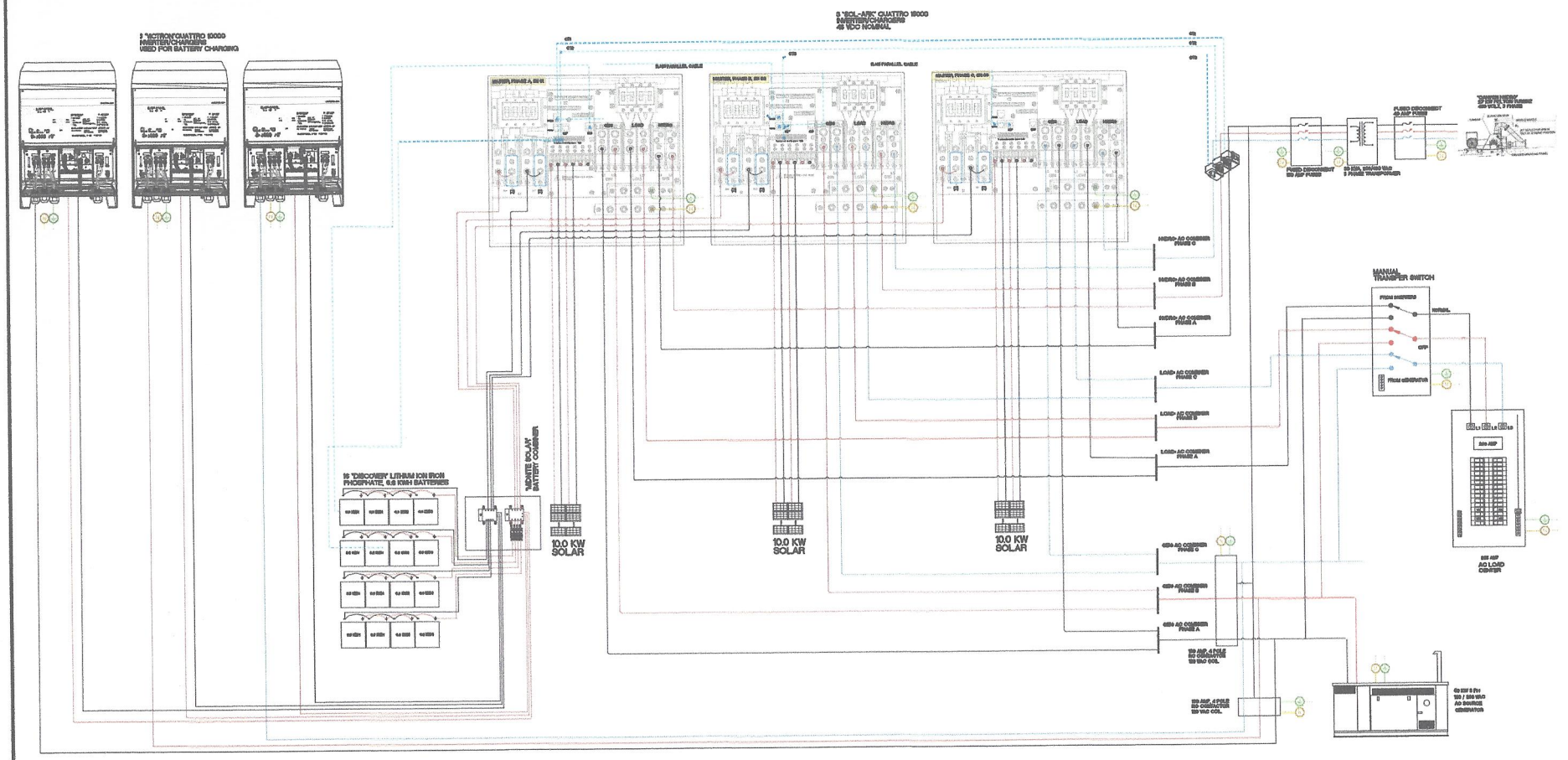
No. 154270 KEN E. GARDNER

SILVER CLOUD LODGE

FABRICATED STEEL DIVERSION WALL
HYDROELECTRIC DIVERSION DETAILS

SILVERTON, COLORADO

GARDNER HYDRO
5566 SOUTH 200 WEST
WASHINGTON TERRACE
UTAH 84405
(801) 589-0447



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DATE	DESCRIPTION

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SILVER CLOUD LODGE
WIRING DIAGRAM
HYDROELECTRIC SYSTEM DETAILS
NEAR SILVERTON, COLORADO

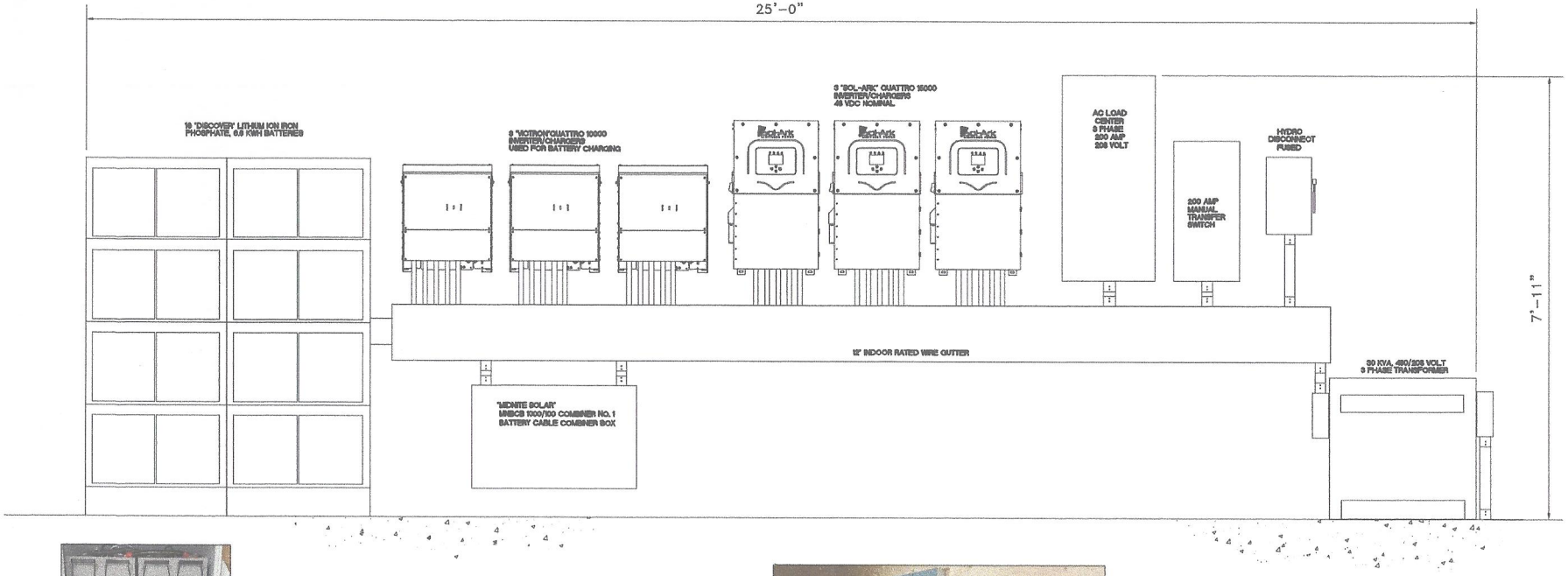
GARDNER HYDRO
5566 SOUTH 200 WEST
WASHINGTON TERRACE
UTAH 84405
(801) 589-0447

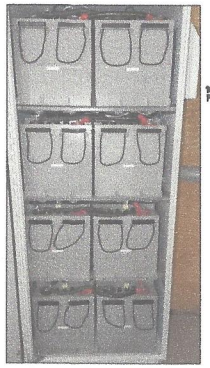


3 "VICTRON"QUATTRO 10000
INVERTER/CHARGERS
USED FOR BATTERY CHARGING



3 "SOL-ARK" QUATTRO 15000
INVERTER/CHARGERS
48 VDC NOMINAL





18 "DISCOVERY LITHIUM ION IRON PHOSPHATE, 6.6 KWH BATTERIES

"MIDNITE SOLAR"
MNBCB 1000/100 COMBINER NO. 1
BATTERY CABLE COMBINER BOX





SIMILAR HYDROELECTRIC POWER CENTER
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DATE	DESCRIPTION

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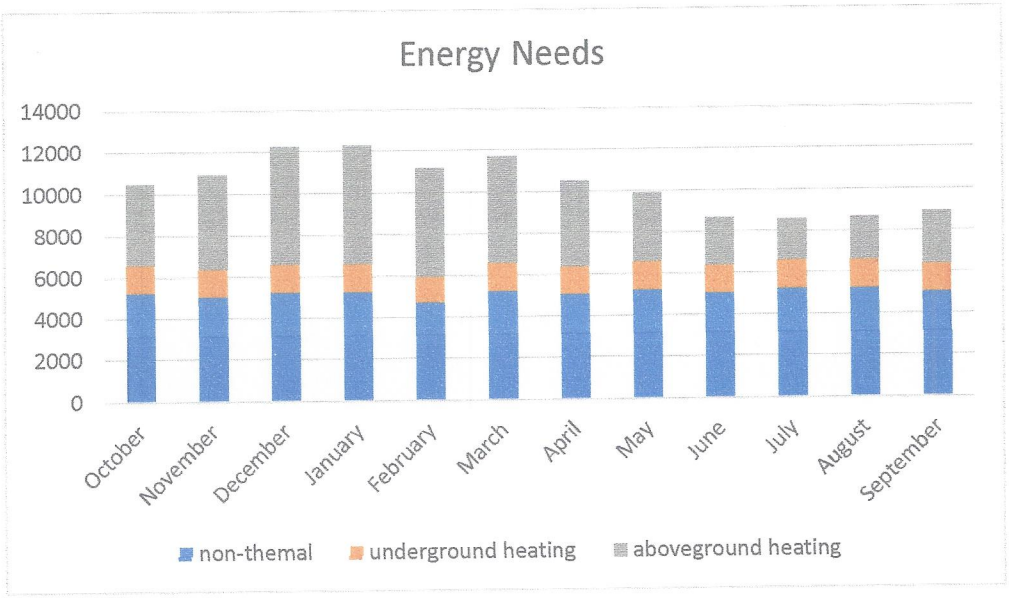
No. 154270
KEN E. GARDNER
STATE OF UTAH

SILVER CLOUD LODGE
EQUIPMENT ROOM
HYDROELECTRIC SYSTEM DETAILS
NEAR SILVERTON, COLORADO

GARDNER HYDRO
5566 SOUTH 200 WEST
WASHINGTON TERRACE
UTAH 84405
(801) 589-0447

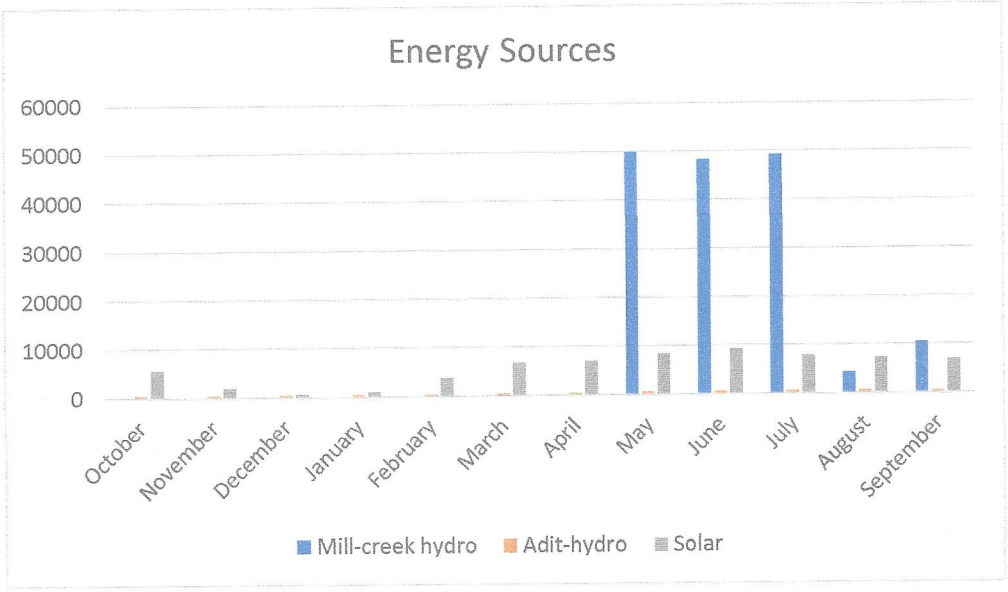
Energy Needs

Month:	October	November	December	January	February	March	April
days in month	31	30	31	31	28	31	30
non-themal	5231.25	5062.5	5231.25	5231.25	4725	5231.25	5062.5
underground heating	1339.2	1296	1339.2	1339.2	1209.6	1339.2	1296
aboveground heating	3906	4536	5691.6	5728.8	5241.6	5133.6	4140
total:	10476.45	10894.5	12262.05	12299.25	11176.2	11704.05	10498.5



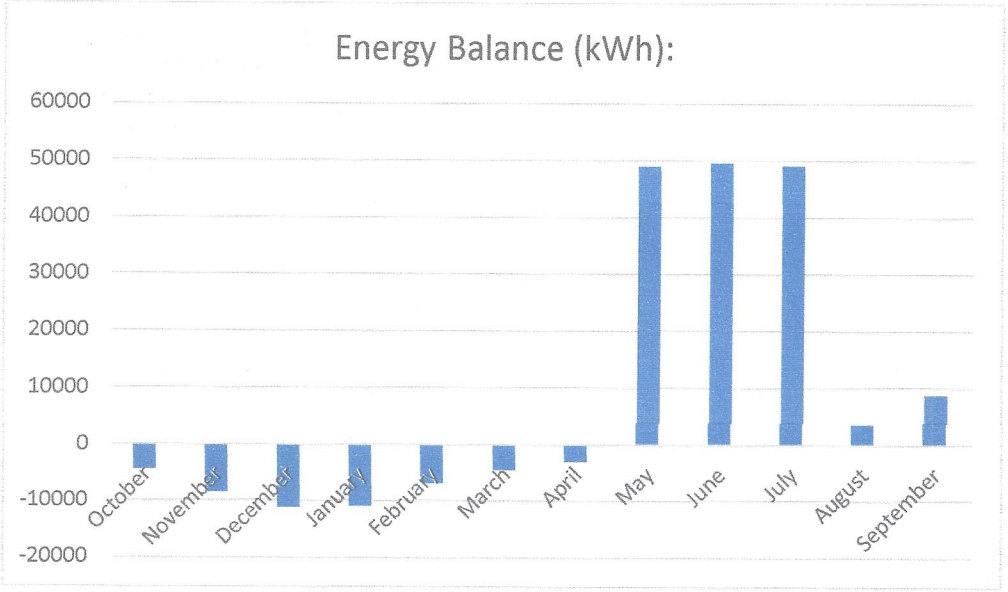
Energy Sources

Month:	October	November	December	January	February	March	April
days in month	31	30	31	31	28	31	30
Mill-creek hydro	0	0	0	0	0	0	0
Adit-hydro	424.08	410.4	424.08	424.08	383.04	424.08	410.4
Solar	5565.83	1969.08	655.9	930.89	3816	6754.99	7032.77
Total:	5989.91	2379.48	1079.98	1354.97	4199.04	7179.07	7443.17



Energy Balance

Month:	October	November	December	January	February	March	April
days in month	31	30	31	31	28	31	30
Balance (kWh):	-4486.54	-8515.02	-11182.1	-10944.3	-6977.16	-4524.98	-3055.33



Employee Housing

Lat/Lon: 37.874284, -107.727512

Elevation (m): 3163

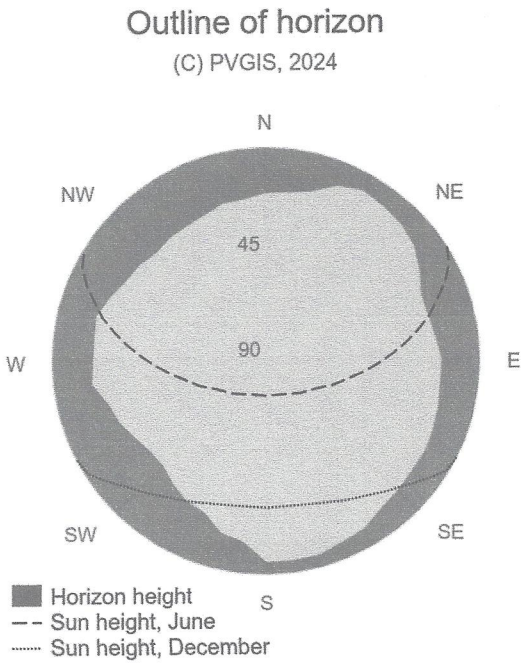
10kW Fixed PV Panel Array

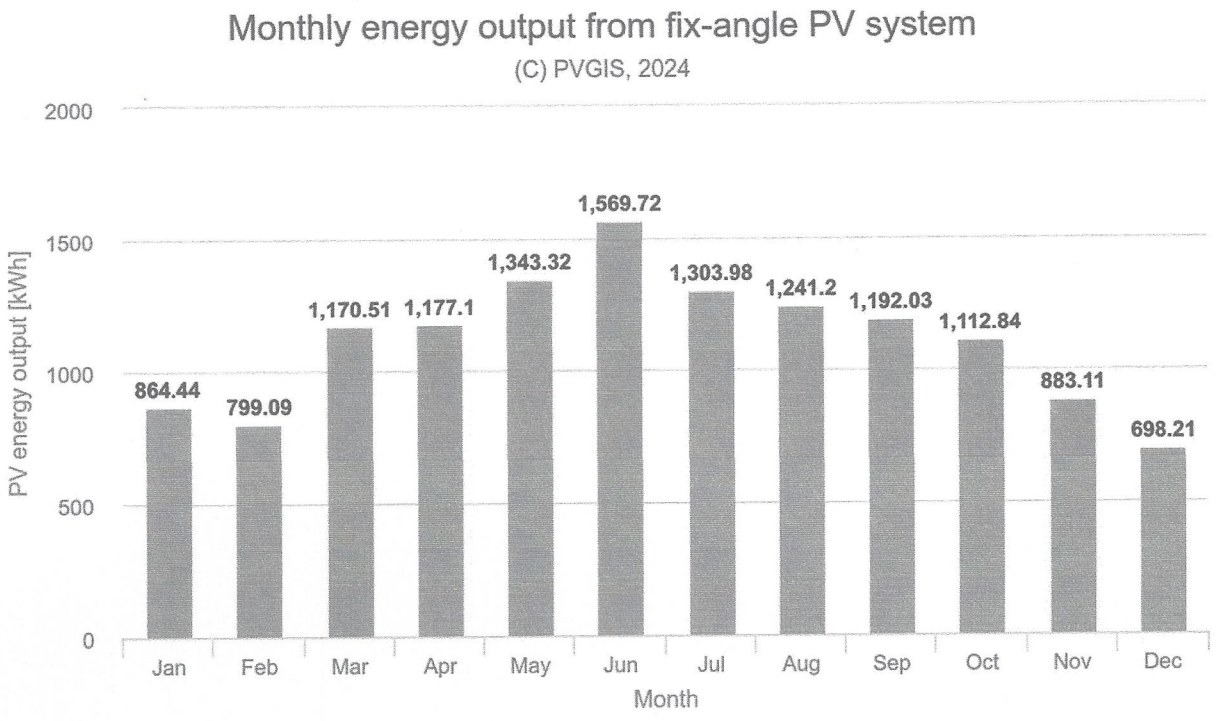
Slope: 33°

Azimuth: -21°

Annual Production (kWh): 13,355.55

Year-to-year variability (kWh): 448.55





Lodge

Lat/Lon: 37.871685, -107.743920

Elevation (m): 3309

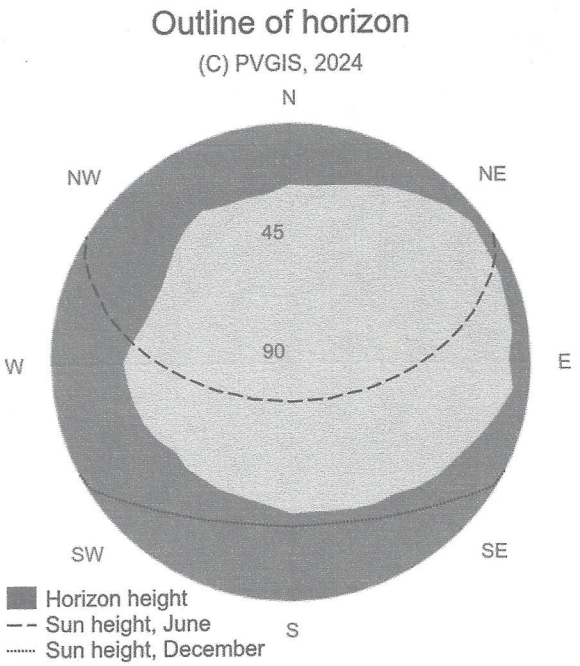
10kW Fixed PV Panel Array

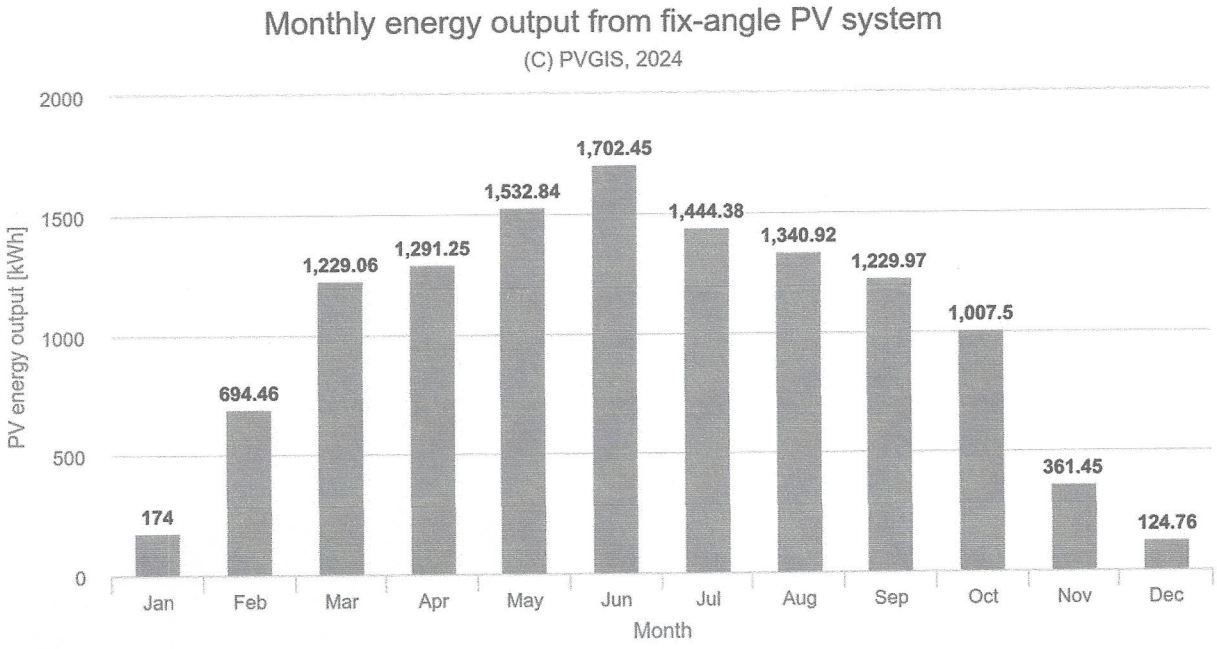
Slope: 30°

Azimuth: -45°

Annual Production (kWh): 12,133.05

Year-to-year variability (kWh): 699.13





BOARD OF COUNTY COMMISSIONERS
San Juan County

P.O. Box 466 Silverton, Colorado 81433 303-387-5671

RELATIONSHIP OF PROPERTY TO COUNTY ROAD AND STATE HIGHWAY SYSTEMS
SHELBYVILLE LODE USMS No. 18168 ET AL, MILL CREEK, CR 15/USFS RD 821, NEAR CHATTANOOGA & HIGHWAY 550.

I, the undersigned, applicant engaged in the processing of Application for Improvement Permit No._____, San Juan County, Colorado, do hereby acknowledge the following facts:

1. The real property which is the subject of said application is on this date located approximately ZERO from County Road No. 15, the nearest designated and publicly maintained county road. (CR 15/USFS RD 821)
2. Said County Road No. 15 is on this date maintained on a SEASONAL basis by San Juan County.
3. The real property which is the subject of said application is on this date located approximately 0.560 MILE from Colorado State Highway No. 550, the nearest designated state or federal highway.
4. Said Colorado State Highway No. 550 is on this date maintained on a year-round basis by either San Juan County or the Colorado Division of Highways.
5. A Driveway Permit will be necessary for any private access or egress relating to said real property which intersects any designated Colorado State Highway or Federal Highway.

Signed and dated this 2ND day of MAY 2023, 19___.

Applicant

ATTEST:

Position:

SAN JUAN COUNTY, COLORADO

DRIVEWAY AND ROAD ACCESS PERMIT

Improvement Permit No. _____

Applicant: Bonanza Boy LLC
c/o Colby Barrett
PO Box 992
Montrose CO 81402

Shelbyville Lode USMS No. 18168 in Mill Creek near Chattanooga

Location of Proposed Driveway or Access on County Road No. 15 :

Existing Access Driveway Located at 0560 CR 15 in Mill Creek near Chattanooga which is approx 1/2 mile up CR 15 from the Hwy 550 Muleshoe Curve. The existing CR 15 (also known as USFS Rd. 821) provides access to the site, the existing Silver Crown Mine Portal, and the proposed Silver Cloud Lodge Building.

Description of Proposed Driveway or Access, including materials to be used:

Applicant is applying to construct a proposed Lodge Building on CR 15 and the plans include a proposed stretch of CR 15 realignment and regrading close to the existing Silver Crown Mine Portal using native gravel and as shown on attached plans. There is also a proposed vehicle pull off widened shoulder, driveway gate, signage proposed to be located near CR 15 at the proposed Lodge Building adjacent to the existing mine portal.

Comment and Recommendations of County Road Supervisor:

Terms and Conditions of Issuance of Permit (or reason for denial):

Permit Approved _____ or Denied _____. Date: _____

Land Use Administrator: _____

USDA United States Department of Agriculture
Forest Service
Columbine Ranger District
P.O. Box 439
367 South Pearl Street
Bayfield, CO 81122
(970) 884-2512

File Code: 2720
Date: January 25, 2024

Colby Barrett
Bonanza Boy, LLC
PO Box 992
Montrose, CO 81402

Dear Mr. Barrett:

Thank you for reaching out to the USDA Forest Service (Forest Service) about your plans for the construction of a lodge facility on your private property within the old Siver Crown Mine, accessed from National Forest System Road (NFSR) 821 off Highway 550 at the Chattanooga curve. After much discussion and a fully developed understanding of the nature of this project, I am writing to notify you that we have formally accepted your proposal and will be moving forward in processing your application for an easement across National Forest System (NFS) land to access your private property. We will also be addressing the request for snow plowing and road maintenance along NFSR 821. In exchange, you have offered to grant an easement to the United States of America (USA) for the portions of NFSR 821 that cross your private property, including the planned road realignment of NFSR 821 on your private property. My staff have analyzed your project proposal and determined that reciprocal easements allow for continued access and serve both parties' interests.

As we proceed in processing your application, the Forest Service would typically collect Cost Recovery fees to recover the agency's processing costs. However, the determination has been made to waive these fees in consideration of the contribution to the programs of the Forest Service through your granting of an easement to the USA.

We appreciate your efforts to coordinate with the Forest Service and in seeking our input on various aspects of your project. Thank you for striving to minimize the impacts on the National Forest System lands surrounding your private property and being a good steward of our public lands. If you have any questions, please reach out to Erin Christenson at Erin.Christenson@usda.gov or (970) 385-1221. We look forward to continuing to work with you.

Sincerely,

NICHOLAS GLIDDEN
Digitally signed by NICHOLAS GLIDDEN
Date: 2024.01.26 16:20:49 -07'00'

NICHOLAS GLIDDEN
District Ranger

STANDARD FORM 299
APPLICATION FOR TRANSPORTATION, UTILITY SYSTEMS, TELECOMMUNICATIONS AND FACILITIES ON FEDERAL LANDS AND PROPERTY

FORM APPROVED
OMB Control Number: 0596-0249
Expiration Date: 02/28/2023

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application for an authorization (easement, right-of-way, lease, license or permit), the applicant should completely review this package, including instructions, and schedule a pre-application meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the pre-application meeting.

Application Number

Date Filed

1. Name and address of applicant

Bonanza Boy, LLC
PO Box 992
Montrose, CO 81402-0992

2. Name and address of authorized agent if different from item 1

3. Applicant telephone number and email:

303.909.6083
cbarrett17@gmail.com

Authorized agent telephone number and email:

4. As applicant are you? *(check one)*

a. ☐ Individual
b. ☐ Corporation*
c. ☒ Partnership/Association*
d. ☐ State Government/State Agency
e. ☐ Local Government
f. ☐ Federal Agency

** If checked, complete supplemental page*

5. Specify what application is for: *(check one)*

a. ☒ New authorization
b. ☐ Renewing existing authorization number
c. ☐ Amend existing authorization number
d. ☐ Assign existing authorization number
e. ☐ Existing use for which no authorization has been received *
f. ☐ Other*

** If checked, provide details under item 7*

6. If an individual, or partnership, are you a citizen(s) of the United States? ■ Yes ☐ No

7. Project description (describe in detail): (a) Type of use or occupancy, *(e.g., canal, pipeline, road, telecommunications);* (b) related structures and facilities; (c) physical specifications *(Length, width, grading, etc.*); (d) term of days/years needed: (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for activity/construction *(Attach additional sheets, if additional space is needed.)*

Bonanza Boy LLC is in the permitting phase with San Juan County for building an off-grid lodge near (and in) the old Silver Crown Mine. The lodge construction would occur on private lands and is adjacent to NFS lands. Access to the private property is via National Forest System Road (NFSR) 821.

There are three Forest Service actions that would occur:
1. Road maintenance of NFSR 821 - minor grading, improving road drainage, adding gravel to fill potholes, clearing rockfall and downed trees, etc. for the first 0.56 miles of NFSR 821 from Highway 550 to the Silver Crown mine.This maintenance would be conducted by the proponent with Forest Service approval.
2. Issuance of a road easement to Bonanza Boy LLC to access their private property and authorize snowplowing.
3. Road realignment of 250 feet of NFSR 821 and widening of a turnaround would occur. These activities do not require Forest Service approval at this time because they are located on private lands where there is currently no easement. However, impacts of these activities are included in the analysis for this decision because they are linked to the Forest Service Road, and because of the proposed pending acquisition of public easement where they would occur.

Implementation may take place in several phases over the course of several years.

8. Attach a map covering area and show location of project proposal.

9. State or Local government approval: ☐ Attached ☒ Applied for ☐ Not Required

10. Nonrefundable application fee: ☐ Attached ☒ Not required ☐ To be determined by agency

11. Does project cross international boundary or affect international waterways? ☐ Yes ☒ No *(if "yes," indicate on map)*

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

Bonanza Boy, LLC is in good standing with the state of Colorado and is fully capitalized. A voluntary cleanup (VCUP) of the mine site has already begun and will complete in 2024. This VCUP has been permitted by CDPHE and approved by San Juan County. Additionally, the site was selected for a Brownfields Revolving loan administrated by CHFA. The same engineering and construction resources that are being employed to conduct the VCUP will also be employed to conduct the road realignment. Future road maintenance and snowplowing will be undertaken by lodge personnel or outsourced to local contractors.

13a. Describe other alternative locations considered.

The applicant considered rebuilding the historic road through the valley that was in use prior to the 1940's.

b. Why were these alternatives not selected?

The historic road would disturb nearly 2000' of riparian area and is also located in a higher avalanche danger area.

c. Give explanation as to why it is necessary to use or occupy Federal assets (lands or buildings).

Roadway access to the Silver Cloud Lodge.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. *(Specify number, date, code, or name)*

VCUP Application (approved by CDPHE and San Juan County in August 2023).

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative; and (c) expected public benefits.

The cost of the roadway realignment will be approximately 20k. Yearly maintenance and plowing will cost around 4k. Constructing a new road would have cost over 100k. The public will benefit from FSR 821 being in better condition.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

FSR 821 only serves the lodge and the Silver Cloud mine, which has been out of operation for nearly 50 years. There should be almost no effect on the population in the area, other than the jobs created by the new lodge.

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability; and, (g) historic or archaeological resources or properties.

The minor reroute of the road will kill a limited number of willows and pine trees. Maintaining the road should help prevent further road surface erosion which introduces sediment into Mill Creek tributaries. Cultural resource surveys of FSR 821 indicate no impact to historic features or structures in the area. There should be major impacts to air quality, visuals, noise levels, or site/soil stability.

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plant life, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

The road realignment will kill a limited number of willows and pine trees. There should be no other impacts to the plant life and wildlife in the area.

19. State whether any hazardous material, as defined in this paragraph, would be used, produced, transported or stored on or in a federal building or federal lands or would be used in connection with the proposed use or occupancy. "Hazardous material" shall mean (a) any hazardous substance under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any petroleum product or its derivative, including fuel oil, and waste oils; and (d) any hazardous substance, extremely hazardous substance, toxic substance, hazardous waste, ignitable, reactive or corrosive materials, pollutant, contaminant, element, compound, mixture, solution or substance that may pose a present or potential hazard to human health or the environment under any applicable environmental laws. The holder shall not store any hazardous materials at the site without prior written approval from the authorized officer. This approval shall not be unreasonably withheld. If the authorized officer provides approval, this permit shall include (or in the case of approval provided after this permit is issued, shall be amended to include) specific terms addressing the storage of hazardous materials, including the specific type of materials to be stored, the volume, the type of storage, and a spill plan. Such terms shall be proposed by the holder and are subject to approval by the authorized officer.

The lodge will primarily be powered by micro-hydro and solar, but will have a backup propane generator. Propane will be transported on FSR 821. During the VCUP and lodge construction phases, material will be generated through underground blasting, meaning that limited amounts of explosives will be transported along FSR 821. All blasting and explosives use will be in accordance with ATF and State guidelines.

20. Name all the Federal Department(s)/Agency(ies) where this application is being filed.

USFS (with copy to San Juan County).

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant	Digitally signed by Colby Barrett Date: 2024.01.11 09:58:46 -07'00'	Date January 11, 2024

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

SUPPLEMENTAL

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
I - PRIVATE CORPORATIONS	ATTACHED	FILED*
a. Articles of Incorporation	☐	☐
b. Corporation Bylaws	☐	☐
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	☐	☐
d Copy of resolution authorizing filing	☐	☐
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	☐	☐
f. If application is for an oil or gas pipeline, describe any related right-of-way or temporary use permit applications, and identify previous applications.	☐	☐
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	☐	☐
II - PUBLIC CORPORATIONS		
a. Copy of law forming corporation	☐	☐
b. Proof of organization	☐	☐
c. Copy of Bylaws	☐	☐
d. Copy of resolution authorizing filing	☐	☐
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	☐	☐
III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY		
a. Articles of association, if any	☑	☐
b. If one partner is authorized to sign, resolution authorizing action is	☑	☐
c. Name and address of each participant, partner, association, or other	☑	☐
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	☐	☐

*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information *(e.g., number, date, code, name)*. If not on file or current, attach the requested information.

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Organization

filed pursuant to § 7-90-301 and § 7-80-204 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name of the limited liability company is

Bonanza Boy, LLC.

(The name of a limited liability company must contain the term or abbreviation "limited liability company", "ltd. liability company", "limited liability co.", "ltd. liability co.", "limited", "l.l.c.", "llc", or "ltd.". See §7-90-601, C.R.S.)

(Caution: The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)

2. The principal office address of the limited liability company's initial principal office is

Street address: 3932 Mount Hayden Drive
(Street number and name)

Montrose (City) CO (State) 81403 (ZIP/Postal Code)
(Province – if applicable) United States (Country)

Mailing address
(leave blank if same as street address): Post Office Box 992
(Street number and name or Post Office Box information)

Montrose (City) CO (State) 81402 (ZIP/Postal Code)
(Province – if applicable) United States (Country).

3. The registered agent name and registered agent address of the limited liability company's initial registered agent are

Name
(if an individual) _____ (Last) _____ (First) _____ (Middle) _____ (Suffix)

or

(if an entity) Boca Grande Properties LLC
(Caution: Do not provide both an individual and an entity name.)

Street address: 200 Grand Avenue, Suite 400
(Street number and name)

Grand Junction (City) CO (State) 81501 (ZIP Code)

Mailing address
(leave blank if same as street address): Post Office Box 40
(Street number and name or Post Office Box information)

Grand Junction (City) CO (State) 81502 (ZIP Code).

(The following statement is adopted by marking the box.)

☒ The person appointed as registered agent has consented to being so appointed.

4. The true name and mailing address of the person forming the limited liability company are

Name
(if an individual) Kampf (Last) Gregg (First) K. (Middle) _____ (Suffix)

or

(if an entity) _____

(Caution: Do not provide both an individual and an entity name.)

Mailing address Post Office Box 40
(Street number and name or Post Office Box information)

_____

Grand Junction (City) CO (State) 81502 (ZIP/Postal Code)

_____ (Province – if applicable) United States (Country).

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ The limited liability company has one or more additional persons forming the limited liability company and the name and mailing address of each such person are stated in an attachment.

5. The management of the limited liability company is vested in
(Mark the applicable box.)

☒ one or more managers.

or

☐ the members.

6. *(The following statement is adopted by marking the box.)*

☒ There is at least one member of the limited liability company.

7. *(If the following statement applies, adopt the statement by marking the box and include an attachment.)*

☐ This document contains additional information as provided by law.

8. *(Caution: Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)*

(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.)

The delayed effective date and, if applicable, time of this document is/are _____.
(mm/dd/yyyy hour:minute am/pm)

Notice:
Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

9. The true name and mailing address of the individual causing the document to be delivered for filing are

Kampf (Last) Gregg (First) K. (Middle) (Suffix)
Post Office Box 40
(Street number and name or Post Office Box information)

Grand Junction (City) CO (State) 81502 (ZIP/Postal Code)
(Province – if applicable) United States (Country).

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

Disclaimer:
This form/cover sheet, and any related instructions, are not intended to provide legal, business or tax advice, and are furnished without representation or warranty. While this form/cover sheet is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form/cover sheet. Questions should be addressed to the user's legal, business or tax advisor(s).

Schedule of Partners and Contact Information

Bonanza Boy LLC

Partner 1

Colby E. Barrett
PO Box 3387
Telluride, CO 81435
303-909-6083

Partner 2

Leslie C. Barrett
PO Box 3387
Telluride, CO 81435
480-227-4729

Partner 3

Honey Rock Opportunity Fund LLC (Note: Owned 100% by Colby & Leslie Barrett)
PO Box 992
Montrose, CO 81402
208-917-0322

STATEMENT OF AUTHORITY

1. This Statement of Authority relates to an entity[1] named **Bonanza Boy, LLC**, and is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.

2. The type of entity is a:

☐ corporation	☐ registered limited liability partnership
☐ nonprofit corporation	☐ registered limited liability limited partnership
☒ limited liability company	☐ limited partnership association
☐ general partnership	☐ government or governmental subdivision or agency
☐ limited partnership	☐ trust (Section 38-30-108.5, C.R.S.)
☐ other:	

3. The entity is formed under the laws of **Colorado**

4. The mailing address for the entity is: **P.O. Box 40, Grand Junction, Colorado 81502**

5. The ☒ name ☒ position of each person authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the entity is: **Colby E. Barrett, Partner and Leslie C. Barrett, Partner**

6.[2] The authority of the foregoing person(s) to bind the entity is ☒ not limited ☐ limited as follows:

7. Other matters concerning the manner in which the entity deals with interests in real property: **NONE**

Executed to be effective January 15th, 2020.

Colby E. Barrett, Partner

Leslie C. Barrett, Partner

Colby E. Barrett for
Honey Rock Opportunity Fund, LLC, Partner

[1] This form should not be used unless the entity is capable of holding title to real property.
[2] The absence of any limitation shall be prima facie evidence that no such limitation exists.

COLORADO DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

Instructions: *Please print or type*

- Contact the Colorado Department of Transportation (CDOT) or your local government to determine your issuing authority.
- Contact the issuing authority to determine what plans and other documents are required to be submitted with your application.
- Complete this form (some questions may not apply to you) and attach all necessary documents and Submit it to the issuing authority.
- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at https://www.codot.gov/business/permits/accesspermits

1) Property owner (Permittee)		2) Applicant or Agent for permittee (if different from property owner)	
Bonanza Boy LLC, Attn. Colby Barrett		Engineer Mountain Inc., Attn. Lisa Adair PE	
Street address		Mailing address	
PO Box 992		PO Box 526	
City, state & zip	Phone #	City, state & zip	Phone # (required)
Montrose CO 81402	(303) 909-6083	Silverton CO 81433	(970) 946-2217
E-mail address		E-mail address if available	
cbarrett17@gmail.com		mackie@gobrainstorm.net	

3) Address of property to be served by permit (required)

Proposed Silver Cloud Lodge, Shelbyville Lode USMS No 18168, 0560 CR 15, San Juan County, CO

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
San Juan	N/A	N/A	N/A	27	42N	8W

5) What State Highway are you requesting access from?

Hwy 550A near Chattanooga Muleshoe Curve

6) What side of the highway? ☐ N ☐ S ☐ E ☒ W

7) How many feet is the proposed access from the nearest mile post?

1,260 feet ☐ N ☒ S ☐ E ☐ W) from: MM 78

How many feet is the proposed access from the nearest cross street?

9,834 feet ☒ N ☐ S ☐ E ☐ W) from: The Brooklyns Rd (CR 14)

8) What is the approximate date you intend to begin construction?

7/1/2024

9) Check here if you are requesting a:

☐ new access ☐ temporary access (duration anticipated:) ☐ improvement to existing access
☐ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

10) Provide existing property use

Existing vacant mining claim (Shelbyville Lode) with draining mine adit (Silver Crown Mine)

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?

☒ no ☐ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:

The access is existing County Road 15/USFS Road 821/Mill Creek Road, located on Highway 550

12) Does the property owner own or have any interests in any adjacent property?

☐ no ☒ yes, if yes - please describe:

Property owner owns several adjacent overlapping mining claims

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?

☐ no ☒ yes, if yes - list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agricultural field access - how many acres will the access serve?

No agricultural use except for some proposed stream restoration planting

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
Proposed B&B/Lodge Structure	6000		

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
N/A	N/A		

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts.

Indicate if your counts are ☐ peak hour volumes or ☒ average daily volumes.	# of passenger cars and light trucks at peak hour volumes	# of multi unit trucks at peak hour volumes
	13	0
# of single unit vehicles in excess of 30 ft.	# of farm vehicles (field equipment)	Total count of all vehicles
0	0	13

COLORADO DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

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- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at https://www.codot.gov/business/permits/accesspermits

1) Property owner (Permittee)		2) Applicant or Agent for permittee (if different from property owner)	
Bonanza Boy LLC, Attn. Colby Barrett		Engineer Mountain Inc., Attn. Lisa Adair PE	
Street address: PO Box 992		Mailing address: PO Box 526	
City, state & zip: Montrose CO 81402	Phone #: (303) 909-6083	City, state & zip: Silverton CO 81433	Phone # (required): (970) 946-2217
E-mail address: cbarrett17@gmail.com		E-mail address if available: mackie@gobrainstorm.net	

3) Address of property to be served by permit (required)
Proposed Garage/Employee Housing Structure, 77201 Highway 550, San Juan County, CO

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
San Juan	N/A	N/A	N/A	22	42N	8W

5) What State Highway are you requesting access from?
Hwy 550A at Chattanooga

6) What side of the highway? ☐ N ☐ S ☐ E ☒ W

7) How many feet is the proposed access from the nearest mile post?
2,010 feet ☒ N ☐ S ☐ E ☐ W) from: MM 77

How many feet is the proposed access from the nearest cross street?
0 feet ☒ N ☐ S ☐ E ☐ W) from: Silver Ledge Bldg/Dwy

8) What is the approximate date you intend to begin construction?
7/1/2024

9) Check here if you are requesting a:
☐ new access ☐ temporary access (duration anticipated:) ☐ improvement to existing access
☒ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

) Provide existing property use
Vacant land (Bonanza Boy Mill Site) shares existing driveway with adjacent Artist Cabin

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?
☒ no ☐ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:
The access is an existing historic road shared with adjacent parcel located on Highway 550

12) Does the property owner own or have any interests in any adjacent property?
☐ no ☒ yes, if yes - please describe:
Property owner owns non-contiguous mining claims in the area

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?
☐ no ☒ yes, if yes - list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agricultural field access - how many acres will the access serve?
No existing or proposed agricultural use except possible future wetlands restoration

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
Proposed Garage Structure	1000		
(First Floor)			

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
Proposed Employee Housing Unit	1		
(Second Floor)			

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts.

dicate if your counts are peak hour volumes or ☒ average daily volumes.	# of passenger cars and light trucks at peak hour volumes: 52	# of multi unit trucks at peak hour volumes: 0
single unit vehicles in excess of 30 ft.: 0	# of farm vehicles (field equipment): 0	Total count of all vehicles: 52

18) Check with the issuing authority to determine which of the following documents are required to complete the review of your application.

a) Property map indicating other access, bordering roads and streets.
b) Highway and driveway plan profile.
c) Drainage plan showing impact to the highway right-of-way.
d) Map and letters detailing utility locations before and after development in and along the right-of-way.
e) Subdivision, zoning, or development plan.
f) Proposed access design.
g) Parcel and ownership maps including easements.
h) Traffic studies.
i) Proof of ownership.

1- It is the applicant's responsibility to contact appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional CDOT Utility/Special Use Permit offices or accessed via the CDOT Planning/Construction-Environmental-Guidance webpage: **https://www.codot.gov/programs/environmental/resources/guidance-standards/environmental-clearances-info-summary-august-2017/view**

2- All workers within the State Highway right of way shall comply with their employer's safety and health policies/ procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 - Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment: High visibility apparel as specified in the Traffic Control provisions of the documentation accompanying the Notice to Proceed related to this permit (at a minimum, ANSI/ISEA 107-1999, class 2); head protection that complies with the ANSI Z89.1-1997 standard; and at all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999.

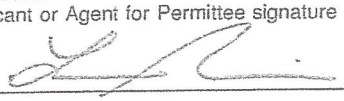
Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

3- The Permittee is responsible for complying with the Revised Guidelines that have been adopted by the Access Board under the American Disabilities Act (ADA). These guidelines define traversable slope requirements and prescribe the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at:
https://www.codot.gov/business/civilrights/ada/resources-engineers

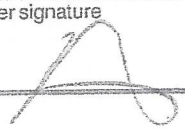
If an access permit is issued to you, it will state the terms and conditions for its use. Any changes in the use of the permitted access not consistent with the terms and conditions listed on the permit may be considered a violation of the permit.

The applicant declares under penalty of perjury in the second degree, and any other applicable state or federal laws, that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

I understand receipt of an access permit does not constitute permission to start access construction work.

Applicant or Agent for Permittee signature	Print name	Date
	Lisa M. Adair PE	5/2/2023

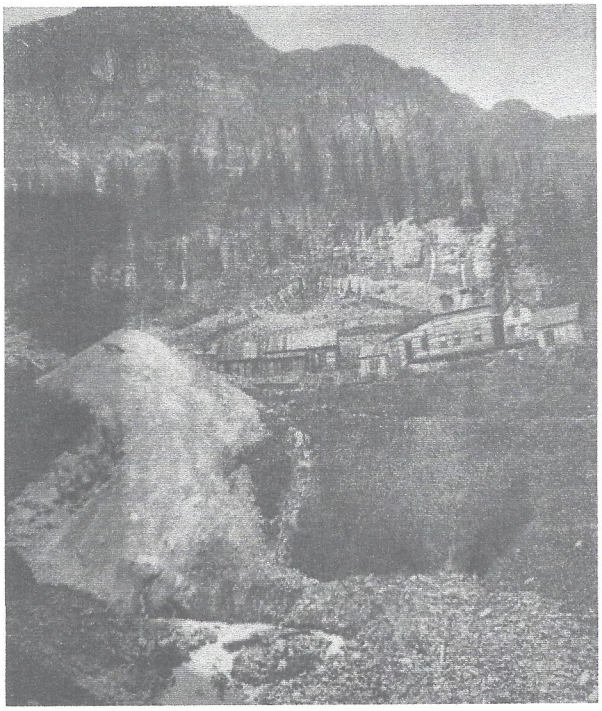
If the applicant is not the owner of the property, we require this application also to be signed by the property owner or their legally authorized representative (or other acceptable written evidence). This signature shall constitute agreement with this application by all owners-of-interest unless stated in writing. If a permit is issued, the property owner, in most cases, will be listed as the permittee.

Property owner signature	Print name	Date
	Colby Barrett	5/2/23

TRAFFIC STUDY REPORT

Proposed Silver Cloud Lodge/PUD

Shelbyville Lode USMS No. 18168 et al
Mill Creek Road and Chattanooga
Highway 550, near Silverton
San Juan County, Colorado



Applicant:
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Attn: Mr. Colby Barrett
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Prepared By:
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Job No. 2023-101

Prepared:
May 14, 2024

TRAFFIC STUDY REPORT

Proposed Silver Cloud Lodge/PUD

Shelbyville Lode USMS No. 18168 et al
Mill Creek Road and Chattanooga
Highway 550, near Silverton
San Juan County, Colorado

Engineer Mountain, Inc.

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SILVER CLOUD LODGE/PUD TRAFFIC STUDY REPORT

1. EXECUTIVE SUMMARY

This is a Traffic Study Report to submit to the Colorado Department of Transportation (CDOT) for a proposed development located along Highway 550 between Silverton and Ouray in San Juan County, Colorado.

The name of the project is the Proposed Silver Cloud Lodge/Planned Unit Development (PUD).

San Juan County Colorado is currently reviewing the Preliminary Plans and County Permit Application for the Proposed Silver Cloud Lodge/PUD.

The project site is located on Highway 550 at an area called Chattanooga, and in a nearby gulch called Mill Creek. There are two Highway access points proposed. Both are associated with existing historic access roads along Highway 550, and we are proposing a change in land use and a corresponding slight increase in vehicle-trips.

At Chattanooga, on the vacant Bonanza Boy Mill Site, proposed development would consist of improvements to the existing driveway on Highway 550, a proposed employee housing structure with a snowcat garage, and centralized guest parking. The existing Highway access driveway currently provides access to an existing residential structure known as the Artist Cabin vacation rental. Across the Highway from this part of the project site is CDOT's private land, and a historic structure known as the Silver Ledge Mill Building. This access is approximately 2000 feet north of milemarker 77. The Artist Cabin is a good reference point but it is not affiliated with this project. The proposed centralized parking at this site is intended to facilitate guests being transported up to a nearby proposed backcountry lodge, using a shuttle van. We are expecting eight shuttle trips per day, travelling from the proposed centralized parking area on private land at Chattanooga, traversing north on Highway 550 approximately one-half mile, and turning the van into the existing Mill Creek Road/USFS Rd. 821/CR 15.

On Highway 550 there is a hairpin curve called Muleshoe Curve. This is at approximately 1260 feet south of milemarker 78. There is an existing dirt access road connected to the Highway at the apex of the Muleshoe Curve. This existing road has three names: Mill Creek Road, United States Forest Service Road (USFS Rd.) 821, and County Road (CR) 15. The existing Mill Creek Road/USFS Rd. 821/CR 15 provides access into a vacant gulch called Mill Creek. The plans for this project include some proposed development in Mill Creek, to be located about a half mile from Highway 550. The proposed development consists of the following: a mine environmental remediation project, a proposed lodge structure (with a few minor outbuildings), reopening of an existing mine portal with some proposed lodging rooms to be constructed inside the mine, a proposed summer-only campground, a proposed underground hydroelectric/utility dugout-type structure (with camper showers/toilets), some proposed recreational improvements such as summer-only walk-in dispersed tent camping, hiking trail improvements, proposed via ferrata (fixed cable assisted hiking trail), proposed fishing, rock climbing, ice climbing, skiing (with the winter recreation being guided-only), proposed stream restoration, wetlands enhancement, and avalanche mitigation (to occur in conjunction with CDOT's avalanche mitigation program) using helicopters via Helitrax. Limited parking would occur at the lodge and all guests would be shuttled up from the Chattanooga site located about a half mile down Highway 550.

We are expecting eight shuttle trips per day, travelling from the proposed centralized parking area on private land at Chattanooga, traversing northbound on Highway 550 approximately one-half mile, and then turning the shuttle van left into the existing Mill Creek Road/USFS Rd. 821/CR 15. That shuttle van would also be expected to make the corresponding estimated eight return trips per day, from the proposed Silver Cloud Lodge in Mill Creek, back to the Chattanooga centralized parking area. Overall, a relatively minimal increase in traffic is proposed.

The two access roads on Highway 550 for this project are existing. One is used to access the adjacent Artist Cabin and would be widened and improved, pending County permit approval as well as CDOT's review and requirements. The driveway improvements at the Artist Cabin are relatively close to the existing Howitzer pad which CDOT utilizes to mitigate avalanches.

The second access road on Highway 550 is nearby at the Muleshoe Curve, which is Mill Creek Road/USFS Rd. 821/CR 15, and no road/grading/widening improvements are proposed at that location.

The Applicant has been coordinating with several CDOT staffpersons, mostly regarding avalanche issues, including Julie Constan, Clint Rhoades, Brett DeSpain. The Applicant is Mr. Colby Barrett representing the property owner Bonanza Boy LLC. Bonanza Boy LLC is a property holding company owned by Colby and Leslie Barrett. The company is based out of Montrose, Colorado. The land in the vicinity of the Proposed Silver Cloud Lodge/PUD consists of public lands administered by the US Forest Service, four mining claims owned by CDOT along Highway 550 at the existing Silver Ledge Mill Building historic structure at Chattanooga, the Artist Cabin mining claim owned by Margearet Stern and her family (currently being operated as a vacation rental), and approximately 27 mining claims owned by the Applicant at Chattanooga/Mill Creek.

As one of the many engineers working on this project, my recent contact with CDOT staffpersons has consisted of the following. I emailed a CDOT Access Permit Application Form and attachments for the proposed mining reclamation in Mill Creek to Randee Reider and Shay Hatch in 2023. That was intended to make sure we could use the existing Mill Creek Road (as-is with no proposed improvements and minimal traffic proposed) to send a construction crew up into Mill Creek to begin a mine cleanup project. In 2024, I recently reached out to Matt Muraro, who referred me to Tim Funk, to inquire about any noxious weed management program/actions that CDOT may or may not be performing near Chattanooga along Highway 550 (such as perhaps annual spraying of any roadside embankment noxious weeds).

In summary, this project, the Proposed Silver Cloud Lodge/PUD, proposes to utilize two existing access roads along Highway 550. One access point is at Chattanooga, at a driveway which could be called the Artist Cabin driveway, and driveway improvements are proposed; and the second access point is at the Highway 550 Muleshoe Curve, at the existing Mill Creek Road/USFS Rd. 821/CR 15, and no driveway improvements are proposed. Both of these existing access points are between milemarker 77 and 78. With this report we are submitting two updated CDOT Access Permit Application Forms for your review, which describe the proposed change in land

use, and the proposed anticipated slight traffic volume increases, for these two existing Highway access roads.

The proposed traffic we expect for this project generally involves proposed centralized parking at Chattanooga on private land, and using a van to shuttle all guests from that site approximately one half mile north on Highway 550, up to Mill Creek Road/USFS Rd. 821/CR 15. Once the guests are off the Highway, from the intersection of Highway 550 and Mill Creek Road up to the lodge, the guests would utilize that same shuttle van, or perhaps get into a tracked snowcat at times of heavy snow. We are anticipating perhaps eight shuttles per day, running from the private land at Chattanooga up to the Mill Creek Road/lodge. A few employees will reside at Chattanooga within the proposed employee housing structure so we expect some vehicle-trips between Chattanooga and Mill Creek consisting of the employee personal passenger vehicle(s). We expect some subcontractor professional backcountry winter recreation guides to go to the site on occasion, and that they would typically reside in/be arriving from/going to Ouray and/or Silverton, utilizing personal passenger vehicle(s).

Regarding land uses, this can be considered a proposed small resort/lodging facility, and proposed minimalist year-round backcountry outdoor recreation area. This project is being designed as a unique mining heritage tourism destination, where a person or family can spend a night in a re-created bunkhouse lodging guest room, or one of the limited guest rooms to be constructed inside the former adjacent mine, a small kitchen will be utilized like a bed-and-breakfast to provide meals on-site for those limited guests, and guests can also choose to camp, hike, climb, ski (with a winter backcountry professional guide where necessary). The lodging rooms are being designed as up to 12, with half being located in the proposed surface building, and the other half being proposed underground within the former mine. Anticipated full time employees consist of an on-site resident manager, a cook, and a summer-only campground host. Some occasional backcountry guides coming from Ouray or Silverton, mostly in the winter, as well as one or more housekeeping staffperson(s) likely to originate from Silverton, can also be expected.

Guests will be prohibited or discouraged from driving up Mill Creek Road from the Highway 550 Muleshoe Curve, and will be required or encouraged to utilize the centralized parking and shuttle service at Chattanooga.

Mill Creek Road is an existing 4WD native gravel public road which currently has some occasional tourist/local usage. It is unplowed and in the summer there are some occasional tourists that drive up Mill Creek Road, and often they can be observed immediately turning around/leaving (to go back to the Highway) as soon as they realize it is not suitable for low clearance small 2WD cars. Mill Creek Road is essentially vacant, and has very little local usage at this time. In winter there is very low usage but occasional local backcountry skiers, who park presumably alongside Highway 550, skin up into Mill Creek gulch, but that appears to be very rare, due to the relatively high avalanche danger in that gulch, in comparison to the wide range of other backcountry ski location options. At this time, in general, the existing Mill Creek Road is not heavily used by anyone and seems to have little traffic, and the few vehicles are typically confined to an occasional drive-by tourist vehicles, in summer only.

The Artist Cabin at Chattanooga likewise appears to have little traffic volumes, and does not currently seem to have excessive bookings for vacation rental guests. The Artist Cabin would share a driveway access point with the centralized parking and employee building for this project; however, the Artist Cabin is not owned by or associated with this Applicant/project.

Thank you for the opportunity to present this application and report to you. We anticipate that this will just be the first submittal of information to CDOT, and that the permitting will include additional documents as necessary/required by CDOT, as well as ongoing coordination regarding the Highway right-of-way, the proposed driveway improvements at Chattanooga, avalanche mitigation/planning coordination (between the Applicant, CDOT, and Helitrax), and perhaps future vegetation management/noxious weed coordination.

For additional information, and the specific existing and proposed traffic volumes associated with Highway 550 and this project, please see the Conclusions section on page 19 of this report.

Please contact the Applicant Colby Barrett, or Engineer Mountain Inc. if you have any questions.

Thanks,

Lisa Adair PE
Engineer Mountain Inc.

2. INTRODUCTION

This traffic study report is regarding the Proposed Silver Cloud Lodge/PUD on Highway 550 in San Juan County, Colorado.

A. Purpose of Study

The purpose of this traffic study is to evaluate the existing and proposed traffic volumes, turn movements, and transportation features at the proposed Silver Cloud Lodge/Planned Unit Development (PUD) to be located near Chattanooga on Highway 550, north of Silverton, in San Juan County, Colorado. This traffic study report has been prepared to accompany the CDOT Access Permit Application forms for this project. CDOT Access Permits are required for this project because there is a proposed change in land use associated with the two existing Highway access roads.

B. Type and Size of Proposed Development

The Proposed Silver Cloud Lodge/PUD is a proposed small resort, featuring proposed mining heritage tourism lodging, some proposed summer-only camping, and some year-round outdoor recreation improvements. The size of the project includes approximately 12 lodging rooms, a small summer-only campground (with eight tent spots), some summer-only dispersed walk-in primitive tent camping, an employee housing building (three apartments), and a centralized parking area.

C. Development Time Tables

The site has a former mine and mining waste rock pile, which is currently being remediated in summer/fall 2023 and summer/fall 2024. Pending all required approvals and permits, construction of the foundation for the proposed lodge structure is expected to begin in approximately June 2025. Above ground lodge building construction, which entails re-creating a former bunkhouse or mining structure that once existed at the site, would begin in summer 2025. An employee housing structure (with a snowcat maintenance/storage garage under it) would be built starting in summer 2026. Additional proposed improvements such as campground, outbuildings, recreational improvements, and environmental restoration projects would begin as early as approximately summer 2026.

D. Characteristics of Site

Two project sites are involved with this proposal. Both are accessed from Highway 550 between milemarkers 77 and 78. The proposed lodge and camping are to be constructed in Mill Creek on mining claims that are vacant except for some historic mining portals. The lodge and camping would be accessed off of the existing Mill Creek Road (US Forest Service Road 821 and County Road 15) which intersects with Highway 550 at the apex of the Highway 550 Muleshoe Curve. The mining claims in Mill Creek are vacant, high altitude, generally steep and rocky, subalpine terrain privately owned by the Applicant. Those mining claims, called the Shelbyville Lode and adjacent claims, are relatively bare, but there are some areas of willows, subalpine fir, spruce,

and grassy rolling meadows, especially along Mill Creek. The proposed employee housing structure and centralized parking area is located further south on Highway 550, closer to Silverton. The proposed employee housing structure and centralized parking is to be located on a private mining claim called the Bonanza Boy Mill Site, which is accessed via an existing historic driveway shared with an adjacent privately owned mining claim on which is the Artist Cabin vacation rental residential structure. The vacant Bonanza Boy Mill Site is relatively flat, grassy meadow, with some willows and sparse trees. The existing access point at the Bonanza Boy Mill Site actually appears to be the former Highway 550 alignment, as maps made prior to the 1960s depict.

E. Adjacent Roadway System

The existing roadway system adjacent to the project site is State Highway 550 which is approximately north and south between Silverton and Ouray. The project site is actually two sites close to each other, and both currently have access via existing primitive native gravel historic roads/driveways which intersect with Highway 550. The adjacent roadway system generally consists of Highway 550, a few existing native gravel County Roads, a few gravel shoulder pull-offs for vehicles, and one driveway leading to a nearby cabin called the Artist Cabin. The roadway in this area is typically through-traffic, driving between Ouray and Silverton, for local trips as well as sightseeing. In the winter this stretch of Highway 550 closes occasionally between Silverton and Durango for avalanche mitigation and plowing.

F. Site Location

The site location is between Silverton and Ouray on Highway 550 between milemarker 77 and 78. The project site is generally in a naturalistic, predominantly vacant alpine area called Chattanooga. Chattanooga is a former unincorporated townsite which is close to Red Mountain Pass. The closest Town to the project site is Silverton, approximately 7 miles towards the south.

G. Surrounding Land Uses

The surrounding land use is almost all scenic vacant subalpine natural terrain. There are private mining claims, almost all owned by the Applicant; there are a few private mining claims recently acquired by CDOT; there is one adjacent private land owner who owns 5 acres with the existing Artist Cabin vacation rental structure; and the remainder of the land is vacant public lands administered by the US Forest Service. The surrounding land uses are mostly former mining lands, vacant backcountry subalpine land, and a very limited amount of existing residential.

H. Expected Development

Expected development which could occur in the future in the vicinity of the project site is close to none, other than this project. The Applicant owns almost all of the private land within the vicinity, approximately 27 privately owned mining claims. CDOT owns a few mining claims, at the historic structure known as the Silver Ledge Mill Building, recently purchased to avoid proposed residential development in that building, which was thought to be directly in the line of

fire for the howitzer avalanche mitigation. The development that can be expected in the future for the Chattanooga area along Highway 550 is close to none, except for this project.

I. Vicinity Information

The vicinity of the project site is largely vacant backcountry land with primarily through traffic on Highway 550 between Silverton and Ouray. The vicinity of the project site is relatively close to Red Mountain Pass in San Juan County, Colorado.

3. SITE CONDITIONS

This section provides further detail on the site conditions of the project site, which is actually two separate sites close to each other located near Chattanooga on Highway 550 in San Juan County, Colorado.

A. Land Use

Existing land use at the project site is vacant. Proposed land use is currently being reviewed by San Juan County Colorado, and could be considered proposed residential (employee housing) with limited commercial (backcountry lodge, outdoor recreation, camping).

B. Size of Development

The proposed lodge is to include approximately 12 small lodging guest rooms, half of which would be located underground in a reclaimed formerly abandoned mine. A limited amount of camping in the summer is also proposed, with eight tent spots, some summer-only walk-in dispersed camping, along with three on-site employee housing apartments, a centralized parking area, and some outdoor recreation/environmental improvements.

C. Existing and Future Traffic Conditions

Existing traffic conditions at the project site primarily consists of through traffic on Highway 550 for tourists travelling between Silverton and Ouray. There are also some occasional local trips, such as Silverton residents travelling to Montrose for medical appointments and groceries. The few existing non-Highway roads in the vicinity of the project site are rarely used. These include one existing driveway for an existing vacation rental cabin, and some existing native gravel 4WD County Roads. Traffic at this time at the project site is almost all through traffic Highway travelers making no stops between Ouray and Silverton.

D. General Terrain

The general terrain at the project site is backcountry sight-seeing scenic subalpine and alpine vacant land. The terrain varies from flat grassy meadows to vertical rocky peaks. The project site has two main locations, one of which is a relatively flat grassy meadow alongside Highway 550 at Chattanooga, while the other is located a half-mile from Highway 550 up in a small, vacant, relatively steep, v-shaped gulch, with rocky sloped canyon walls, which could be considered a small "box canyon" with a creek at the bottom (known as Mill Creek). The overall general terrain in the vicinity of the project site is vacant, sloped, backcountry subalpine land, in a natural state, with little existing man-made development, except for some abandoned mining-related remnants.

E. Road Network Features

This section provides information about the road network in the vicinity of the project site.

1. Current Roadway System Characteristics

The existing road network features two intersections at the project site. The first is the existing intersection of Highway 550 with the Artist Cabin driveway. That driveway was be improved, if approved by the County and CDOT, to provide access for the proposed employee housing structure and the proposed centralized parking area. The second existing intersection for this project is the intersection of Highway 550 and Mill Creek Road (USFS Rd. 821/CR 15). That is an existing native gravel road located at the apex of the Muleshoe Curve hairpin curve on Highway 550. There are no proposed improvements at that intersection. Other nearby intersections are few and far between, such as Red Mountain Pass about a mile to the north, and the Brooklyn Mine Road, about a mile to the south. The existing road network is relatively sparse as the primary transportation around the project site is scenic through traffic tourism related vehicle trips.

2. Functional Classification (and Estimated Level of Service)

The functional classification of Highway 550 at the project site appears to be a Rural Principal Arterial. The existing Highway at the project site serves as a major arterial for western Slope in-State travelers, and appears to be adequate for the relatively low amount of traffic. The Level of Service for the two-lane highway (one lane in each direction, with occasional passing zones) would generally be evaluated by "percent time spent following." Anecdotally the traffic is almost always so light on that stretch of Highway 550, that the overall Level of Service could be initially estimated as an average of a B. There are only a few times of the year that the stretch of Highway 550 at the project site is heavily used, including excessive holiday traffic (an increase in passenger vehicles, and summertime passenger vehicles towing RVs) typically during the Fourth of July holiday week. There are also occasional slow-moving vehicles (such as passenger vehicles, and CDOT plows) during a winter blizzard. There is a passing lane, within the vicinity of the project site, for the vehicles travelling northbound, which appears to keep the Highway's Level of Service high in the vicinity of the project site. An additional time where this stretch of Highway 550 can experience a lower than normal Level of Service would be during the "leaf peeper" migration, when slow moving vehicles flock to this area of Highway 550 to drive extremely slow, occasionally blocking local-trip vehicles by photographing fall foliage from the Highway. In general, in this area of Highway 550, the roadway serves as a Rural Principal Arterial and has a relatively high Level of Service, as there seems to be very low "percent time spent following."

3. Access Control

There is little existing access control along the edges of the Highway in the vicinity of the project site. The Highway has free and clear access along this stretch for vehicles to pull over in limited areas of the gravel shoulder in places where there is enough room. What little access control exists along this stretch stems from natural terrain limitations such as steep drop offs. There is little to no existing guiderail/guardrail along this stretch of Highway 550, in part to facilitate a massive amount of Highway snow removal. Across from the project site is a historic structure called the Silver Ledge Mill Building, which has a very long pull off area for vehicles with little channelized access control. Adjacent to that long pull off at the Silver Ledge, there is an existing

abandoned road on CDOT's land which used to be the Highway prior to the Highway having a slight relocation near the Silver Ledge, possibly in the 1960s. The old Highway alignment, now abandoned, still appears on local maps, if they were prepared in the 1950s (such as the USGS topo quad map). There are not really any frontage roads along this stretch which would channelize traffic or create some access control. Nor are there many people who elect to stop in the vicinity of the project site, as the majority of Highway travelers at this location seem to be through-traffic/tourist vehicle trips.

4. Right-of-Way

The right-of-way along the Highway is this area may have a surveying issue. A CDOT employee indicated that the Highway right-of-way might not actually exist or be fully documented at the vicinity of the project site. The primary landowner in this area happens to be the Applicant, and would be willing to grant/document the right-of-way for/with CDOT along the Highway, as necessary or required. The project Surveyor, the CDOT Surveyors, and the project Applicant should be consulted for further information on the topic of the Highway right-of-way along this stretch of Highway 550.

5. Lane Configurations

At the project site the Highway is two lanes, consisting of one lane for northbound vehicles, and one lane for southbound vehicles. Those whom are travelling north towards Ouray, also have a high-functioning passing lane available, in order to be able to pass slower moving vehicles in the stretch between Chattanooga and the Muleshoe Curve.

6. Geometrics

At the project site the Highway geometry varies from a straight stretch with far sight distance, and a passing lane, to a tight-as-can be, superelevated hairpin turn, known as Muleshoe Curve. Vertically the stretch of Highway 550 at the project site is relatively flat. However, just north of the project site, the Highway grade begins it steep long climb, from the Muleshoe Curve, up to the top of Red Mountain Pass. The majority of the Highway in the vicinity of the project site is located on a former railroad bed therefore it resembles a steep mountainous, mining-era steady-grade narrow gauge railroad geometry.

7. Traffic Signal Locations, Coordination & Timing

Traffic signal considerations are believed to be non-applicable for this project, as the closest traffic signals are about an hour away in either direction, located at Montrose, about an hour to the north, and near Durango, about an hour to the south.

8. Traffic Control Devices

we have not observed any traffic control devices (such as existing stop signs) in the vicinity of the project site. It would be recommended that a stop sign be placed at the two existing access roads that will serve the Proposed Silver Cloud PUD. That would entail a proposed stop sign to

be placed at the existing Mill Creek Road, where that existing gravel road intersects with the Highway 550 Muleshoe Curve. It would also be recommended that the proposed improvements to the existing gravel access road at the Bonanza Boy Mill Site would also require a stop sign. The only known existing traffic control devices/signage on Highway 550 near the project site which would have any bearing on this project would perhaps be two yellow curve-related speed limit signs that exist on both ends of the tight hairpin Muleshoe Curve. Those two yellow curve/reduced speed signs warn Highway 550 drivers that a very sharp curve is ahead and that the recommended maximum speed on the Muleshoe Curve is 25 MPH.

10. Posted Speed Limits

The speed limit varies and changes along the stretch of Highway 550 which runs through this project site. The speed limit is 45 MPH for northbound vehicles at the far south end of the project site, where there is a passing zone, and transitions to 30 MPH where that passing lane ends at a merge. The speed limit appears to be 45 MPH for the southbound vehicles at the far north end of the project site, those who are heading south down a steep grade from Red Mountain Pass towards the Muleshoe Curve. However, importantly, the project site has the tight Muleshoe Curve where the suggested maximum speed signage at that curve is posted as 20 MPH. For those travelling north, the speed limit at the project site is 45, transitioning to 30, then 20 at the Muleshoe Curve. For those heading south, the speed limit appears to be 45, transitioning to 20 at the Muleshoe Curve, then increasing to 50. The unusual and variable geometry of this particular stretch of Highway causes the speed limit to transition rapidly, as required for safety. The highway alignment was formerly a mountain narrow gauge railroad bed in places, which favored maximum grade during railbed construction, which appears to have caused the unusual hairpin curve/alignment, requiring the rapid speed limit transitions.

11. Average Running Speeds

The average running speeds of the existing traffic on Highway 550 at the project site was not evaluated. Anecdotally, it seems that the posted and suggested speed limits closely match the fastest rate of travel a person could drive. In general, there are probably locals able to drive at the posted speed limit, while there some are mixed-in tourists going under the speed limit because of the scenery. The posted speed limits, and the posted suggested tight-curve speed limits, do not appear to restrict the Highway users or cause them to drive artificially slow in this stretch; on the contrary, the posted speed limits appear to closely match the absolute maximum safe travelling speed in this mountainous, curvy stretch.

12. Commuter Peak Hours

This project differs from most as there is little nearby to affect or cause a distinct commuter peak hour(s) on this stretch of Highway 550. Ouray is not really a bedroom community for Silverton nor vice versa. This project is generally located at a vertical divide high in the mountains, which forms a significant natural barrier between the north side of Red Mountain Pass, and the separate south side of Red Mountain Pass. Due to the high altitude, bad weather, avalanches, and distance, it is very uncommon for commuting to occur between Silverton and Ouray. If there is a peak hour along this particular stretch of Highway, it might generally be associated with summer

time tourism vehicle-trips, for tourists driving between Ouray and Silverton, during the nicest part of the mid-day. I do not believe there would be any significant AM nor PM commuter peak hours, as commuters between Silverton and Ouray might average approximately 0 to 5 persons, including just a few individual workers, like the Silverton postmaster, a few CDOT employees, some occasional backcountry outdoor recreation winter guides. There is little to no known inter-school-related traffic, which would have the potential to cause a commuter peak hour, because very few Silverton or Ouray students attend school on the other side of Red Mountain Pass. I do not believe this particular stretch of Highway would possess a normal, noticeable commuter peak hours such as morning rush hour or after-school/after-work evening rush hour. The peak traffic on this stretch is most likely only noticeable on a mid-day in the summer due to tourism-related traffic making a day trip between the two towns of Silverton and Ouray.

13. Sight Distance Limitations

Sight distance is excellent both vertically and horizontally at the existing driveway for the Artist Cabin, especially compared to the limited sight distance often experienced in mountainous terrain, blocked by hillsides, mountains, etc. Adjacent to the existing Artist Cabin is the vacant land where the Applicant plans to construct an employee housing structure, as well as centralized parking. This project will increase traffic turning in and out of that existing access road, and thankfully the sight distance at that location is excellent. Exact sight distance calculations will be submitted in a forthcoming submittal after meeting with CDOT to obtain CDOT's preliminary comments on this project, and to discuss widening of this existing access. The secondary Highway access point for this project is located at Mill Creek Road, which intersects with Highway 550 at the apex of the Muleshoe Curve. The sight distance is somewhat limited at that location, but primarily only in one direction. The person stopped on Mill Creek Road waiting to enter the Highway, and looking to turn left or right onto Highway 550, has a partially blocked or intermittent view of the northbound Highway traffic, due to the tops of some bushes located within the inside of the Highway curve. The sight distance view for a person wanting to turn right/south onto Highway 550 is excellent, and unobstructed, due to the Highway geometry. A person wanting to turn their vehicle right/south from Mill Creek Road onto Highway 550 can see southbound vehicles from afar, as they are clearly visible coming down the steep slope of Highway 550 between Red Mountain Pass and the Muleshoe Curve. However, if a person wants to turn their vehicle from Mill Creek Road, and enter the Highway to head north towards Ouray, they will have some difficulty seeing the approaching northbound vehicles, with which they need to merge. The vegetation within the inside of the tight Muleshoe Curve needs trimmed to increase that sight distance, if allowable. At present, the approaching northbound vehicles can be seen intermittently through the bushes but the view for the person entering the Highway to begin heading to Ouray is intermittently obstructed. At night, headlights on the northbound Highway traffic allow for much better sight distance, since those headlights shine through the vegetation branches, serving to increase the visibility of the approaching northbound travelling vehicles. This project has the advantage of the majority of anticipated turn movements heading onto the Highway from Mill Creek Road will be going southbound towards the Chattanooga area proposed centralized parking, and towards Silverton. Out of the four turn movements from the project site onto the Highway from Mill Creek Road, the one turn movement which has a relatively existing daytime poor sight distance, happens to be the one turn movement we are least expecting. The relatively poor daytime sight distance would occur for a person leaving the

proposed Silver Cloud Lodge and intending to drive towards Ouray. We expect very few vehicles to make that turn movement, as the majority of all guests/workers for this project will instead head towards the centralized parking to the south. The sight distance for that one turn movement is limited, whereas the sight distance for the other three turn movements appears adequate. Permission to trim the tops of the bushes, which are growing inside a depression area at the inside of the Highway 550 Muleshoe Curve, which is perhaps red osier shrubbery, would greatly enhance the daytime sight distance for any occasional vehicles exiting Mill Creek Road to begin heading north towards Ouray. The stopping sight distance for the northbound moving vehicles at the Muleshoe Curve appears adequate, and that is because they are headed uphill, up a relatively steep grade, and on an incredibly sharp horizontal curve, which will aid in lessening the time it will take them to stop, if a northbound vehicle were to pull out from Mill Creek Road right in front of them. At that location, there happens to be a wide, flat gravel shoulder, enough to serve as a rather wide emergency/deceleration lane, on the inside of the Muleshoe Curve. Additional Highway 550 geometric information is needed, as well as on-site CDOT right-of-way vegetation height measurements, in order to proceed with accurate sight distance calculations, to submit to CDOT for review. CDOT initial review comments should also be obtained before proceeding with the exact sight distance calculations at the Muleshoe Curve, as the initial comments would have the potential to affect the entering vehicle's location, and driver's eye for those calculations. In summary, the turn movement we expect to occur the least often, is the turn movement that has a somewhat limited sight distance. And it appears that the limited sight distance could be easily addressed, or greatly improved, with some regular/annual/biannual vegetation trimming inside the Muleshoe Curve (after any/all applicable Local/State/Federal permits are obtained for that vegetative maintenance). Another concept to increase safety for that particular turn movement (vehicle turning left to enter northbound Highway 550 to travel from Mill Creek Road towards Ouray) would be the placement of one proposed yellow warning sign alongside Highway 550, alerting northbound Highway 550 drivers to the fact that there is a somewhat hidden driveway ahead (Mill Creek Road).

4. EXISTING TRAFFIC DATA

This section summarizes the existing traffic counts we were able to find online using CDOT resources. The data collected by CDOT during August 2020 is a good estimate of current traffic conditions. See Table 1 below for traffic data collected by CDOT during August 2020.

Dir	0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h
P	1	0	1	4	6	7	17	28	90	82	151	146	141	118	164	135	110	75	76	23	11	15	11	3
S	6	2	0	4	4	18	17	37	63	67	131	113	104	96	122	123	114	90	90	54	30	19	8	6

P = Primary direction S = Secondary direction C = Combined traffic counts

Table 1: Traffic Data on Highway 550 between mile markers 72 and 80 collected by CDOT during August 2020.

The vehicles counted by CDOT in August 2020 included the following:

Highway 550 Vehicles, Primary Direction:

(1+0+1+4+6+7+17+28+90+82+151+146+141+118+164+135+110+75+76+23+11+15+11+3) =
= **1,415 Vehicles Per Day (VPD)**

Highway 550 Vehicles, Opposite Direction:

(6+2+0+4+4+18+17+37+63+67+131+113+104+96+122+123+114+90+90+54+30+19+8+6) =
= **1,318 Vehicles Per Day (VPD)**

Total Two-Way Highway 550 Traffic Counted in Both Directions in August 2020:
The Total Daily Vehicles counted by CDOT in August 2020 on Highway 550 at the Project Site included the following:
Total = 1,415 VPD + 1,318 VPD = **2,733 VPD**
2,733 VPD can be considered the two-directional Average Annual Daily Traffic (AADT).

Peak Hours in August 2020:

The peak traffic volumes happened to occur on that particular day in August 2020 at approximately **10 AM to 11 AM** in one direction, and approximately **2 PM to 3 PM** in the other direction. This data only provides a snapshot of that time; however, it matches the fact that, anecdotally, tourism traffic between Silverton and Ouray is believed to peak during mid-day, as tourists are likely to take a "day trip" between the two towns, likely to occur during the mid-day, (with the best chances of good weather and heightened daytime visibility). Given that August 2020 was during the Covid pandemic, which greatly affected (increased) the outdoor tourism visitors to this area, as people were generally avoiding indoor pursuits, the August 2020 volumes above (and the apparent peak hours) may be slightly inaccurate for long term forecasting.
It appears that using the August 2020 vehicle counts available from CDOT of approximately 2,733 VPD (bi-directional total), passing through/by the project site, is a good estimate of summertime maximum/average daily traffic, and can be used as the Average Annual Daily Traffic (AADT), even though traffic/vehicles are assumed to be quite lower in the winter (due to snowy conditions, and consistently less tourism in this region in the winter).

5. TRIP GENERATION, PROPOSED TRAFFIC VOLUMES AND TURN MOVEMENTS

Rather than trying to shoehorn this unusual project and site into the typically-used ITE Trip Generation Manual broad/generalized urban/suburban development categories, which we have used for almost all other past traffic studies, we have estimated the proposed traffic volumes and turn movements based on the actual anticipated individual employees, guests, and project plans.

We are estimating the following vehicle-trips associated with the Proposed Silver Cloud Lodge/PUD:

- Shuttle van from the Bonanza Boy Mill Site at Chattanooga to the Silver Cloud Lodge in Mill Creek:

8 trips per day northbound on Highway 550
(and the corresponding 8 return trips per day southbound on Highway 550)

- Chef/cook likely to reside on-site in the employee housing building at the Bonanza Boy Mill Site:

1 trip per day northbound on Highway 550 to go to work in the lodge
(and the corresponding 1 return trip home per day after work southbound on Highway 550)

1 trip per day from the Bonanza Boy Mill Site to Silverton for errands/groceries
(and the corresponding 1 return trip per day from Silverton back to Chattanooga)

- On-site manager of facility:

1 trip per day northbound on Highway 550 to go to work in the lodge
(and the corresponding 1 return trip per day southbound on Highway 550)

1 trip per day from the Bonanza Boy Mill Site to Silverton for errands
(and the corresponding 1 return trip per day from Silverton back to Chattanooga)

- Campground host, summer only, likely to reside on-site in the employee housing building at the Bonanza Boy Mill Site:

1 trip per day northbound on Highway 550 to go to the campground near the lodge
(and the corresponding 1 return trip per day after work southbound on Highway 550)

1 trip per day from the Bonanza Boy Mill Site to Silverton for errands/groceries
(and the corresponding 1 return trip per day from Silverton back to Chattanooga)

- Housekeeping staff, likely one person residing in/visiting from Silverton once a day:

1 trip per day from Silverton to the lodge
(and the corresponding 1 return trip per day from the lodge back to Silverton)

- Subcontractor winter recreation professional backcountry guide, likely an average of one person residing in/visiting from Silverton once a day:

1 trip per day from Silverton to the lodge

(and the corresponding 1 return trip per day from the lodge back to Silverton)

- Lodge Guests: there are up to 12 guest rooms proposed. The proposed lodging rooms appear to be rather small. It is assumed the occupancy would be one single person, one couple, or a small family in each guest room. If there happens to be 100% occupancy, we could assume that there might be 12 vehicles associated with the 12 rooms. Assuming that two friends might drive separately to the site and end up sharing one guest room, there could be perhaps up to 24 guest vehicles. We could assume half of the guest vehicles could originate from the north, from northern Colorado, from states north of Colorado, from I-70, and/or from the Montrose airport, while conversely we could assume that the other half of the guests may originate from the south, from Durango, from states south of Colorado such as Texas and Arizona, and from the Durango airport. The lodge guests are likely to stay more than one night after arriving at the relatively remote project location. However for initial traffic estimations we will conservatively assume there may be:

6-12 lodge guest vehicles per day maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from/to the north, and
6-12 lodge guest vehicles per day maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from/to the south.
These lodge guests will park at the centralized parking area on the Bonanza Boy Mill Site, and will be transported in the shuttle van to and from the lodge.

- For summer-only campground guests, there will be a total of eight designated tent spots which will be defined by proposed wooden tent platforms. Similar to the lodge guests described above, we can assume that the eight tent spots could be associated with 8 to 16 vehicles, parking at the centralized parking area on the Bonanza Boy Mill Site, and being transported in the shuttle van to the summer-only campground adjacent to the lodge in Mill Creek. Similar to the lodge guests described above, we can assume half of the campers might originate from Montrose/the north, and the other half originating from Durango/the south.

4-8 campground guest vehicles per day maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from/to the north, and
4-8 campground guest vehicles per day maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from/to the south.
These lodge guests will park at the centralized parking area on the Bonanza Boy Mill Site, and will be transported in the shuttle van to and from the campground adjacent to the lodge.

- Summertime dispersed camping guests, and wintertime outdoor recreationalists:

These two seasonal guest categories may balance each other out, with a few dispersed campers at the site in the summer, and a few wintertime outdoor day-trip recreationalists (skiers with a guide, ice climbers with a guide) in the winter. Since there are five roughly-defined walk in dispersed camp sites in upper Mill Creek, we will assume up to five vehicles per day associated with the summer primitive camping and the winter outdoor recreationalists. We may estimate the following turn movements associated with these two outdoor user groups: Average annual five vehicles per day entering/exiting the centralized parking at the Bonanza Boy Mill Site, to utilize the shuttle van up to/back from Mill Creek, for either dispersed primitive walk in summer-

only camping, or winter guided outdoor recreation (ice climbing, skiing), half originating from the north and half originating from the south, as follows:
3 dispersed summer camper/winter recreationalist vehicles per day estimated maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from the north, and
3 dispersed summer camper/winter recreationalist vehicles per day estimated maximum entering/exiting the centralized parking at the Bonanza Boy Mill Site from the south.
These summer dispersed campers and winter outdoor recreationalists will park at the centralized parking area on the Bonanza Boy Mill Site, and will be transported in the shuttle van to and from the seasonal primitive outdoor recreation above the lodge.

Total daily vehicular turn movements expected at the Bonanza Boy Mill Site:

Left turn out = 8 vans + 3 employee vehicles + 6-12 lodge guest vehicles + 2-4 campground guest vehicles + 3 recreationalist vehicles =
= an estimated maximum of **30 vehicles per day** making a left turn out of the Bonanza Boy Mill Site driveway onto Highway 550 northbound

Right turn out = 3 employee vehicles + 6-12 lodge guest vehicles + 2-4 campground guest vehicles + 3 recreationalist vehicles =
= an estimated maximum of **22 vehicles per day** making a right turn out of the Bonanza Boy Mill Site driveway onto Highway 550 southbound

Left turn in = 3 employee vehicles + 6-12 lodge guest vehicles + 2-4 campground guest vehicles + 3 recreationalist vehicles =
= an estimated maximum of **22 vehicles per day** making a left turn in to the Bonanza Boy Mill Site driveway from Highway 550 northbound

Right turn in = 8 vans + 3 employee vehicles + 6-12 lodge guest vehicles + 2-4 campground guest vehicles + 3 recreationalist vehicles =
= an estimated maximum of **30 vehicles per day** making a right turn in to the Bonanza Boy Mill Site driveway from Highway 550 southbound

Total daily vehicular turn movements expected at Mill Creek Road:

Left turn out = an estimated average of **0-1 vehicles per day** making a left turn out of Mill Creek Road onto Highway 550 to go northbound towards Ouray - because almost all of the proposed traffic/turn movements associated with this project will be utilizing (required or encouraged) the centralized parking located at Chattanooga. We are estimating 0-1 average left turn out vehicle turn movements per day, because there could be an occasional subcontractor backcountry winter guide who might live in Ouray, going home after a day of skiing/ice climbing, on rare occasions.

Right turn out = 8 vans + 3 employee vehicles + 1 Silverton housekeeper vehicle + 1 Silverton backcountry guide vehicle =
= an estimated maximum of **13 vehicles per day** making a right turn out of Mill Creek Road onto Highway 550 southbound

Left turn in = 8 vans + 3 employee vehicles + 1 Silverton housekeeper vehicle + 1 Silverton subcontractor winter backcountry guide vehicle =
= an estimated maximum of **13 vehicles per day** making a left turn in onto Mill Creek Road from Highway 550 northbound

Right turn in = an estimated average of **0-1 vehicles per day** making a right turn in onto Mill Creek Road from Highway 550. Almost all of the proposed traffic/turn movements associated with this project will be utilizing (required or encouraged) the centralized parking located at Chattanooga. We are estimating 0-1 average right turn in vehicle turn movements per day, because there could be an occasional subcontractor backcountry winter guide who might live in Ouray, coming to the site for a day of skiing/ice climbing, on rare occasions.

6. CONCLUSIONS

The traffic volumes and estimated proposed turn movements associated with this project, the Proposed Silver Cloud Lodge/Planned Unit Development (PUD) are relatively low, in relation to the capacity and existing traffic volumes at the project site. This report is intended to be an introduction to the proposed PUD for CDOT and we expect subsequent calculations and traffic turn movement diagrams to follow, after obtaining CDOT's initial comments/requirements.

The plans for the project include utilizing two existing historic access points on Highway 550, making proposed improvements/widening at one, and no proposed improvements at the other. The Bonanza Boy Mill Site driveway (adjacent to the unrelated Artist Cabin) at Chattanooga is proposed to be widened and improved and will provide access to a proposed employee housing building, as well as a proposed centralized parking area. The second access point is the existing Mill Creek Road/USFS Road 821/County Road 15, which intersects at the Muleshoe Curve on Highway 550, where no grading improvements are proposed. Stop signs will be required at a minimum at each of the two intersections. We would recommend that the Applicant works with CDOT to get permission to do annual maintenance on vegetation trimming within the inside of the Muleshoe Curve (to improve sight distance). We would also recommend placement of a sign on northbound Highway 550 right before the Muleshoe Curve to advise northbound Highway 550 drivers that there is a somewhat hidden driveway ahead (Mill Creek Road).

The Average Annual Daily Traffic (AADT) on Highway 550 at the project site is described in this report and is based on CDOT August 2020 traffic counts, including a two-directional total traffic volume of 1,415 VPD + 1,318 VPD = **2,733 VPD AADT.** The estimated vehicles per day associated with this project is the following: a**pproximately 13 vehicles** total per day turning in onto existing Mill Creek Road (USFS Rd. 821/CR 15), and those same 13 vehicles total per day turning out onto Highway 550 from Mill Creek Road; **approximately 52 vehicles** total per day turning in onto the Bonanza Boy Mill Site driveway at Chattanooga, and those same 52 vehicles total per day turning out onto Highway 550 from the Bonanza Boy Mill Site driveway.

Total proposed traffic associated with this project would be estimated at 13 + 52 = 65 vehicles per day (with most of those vehicle-trips associated with the proposed on-site guest shuttle van going back and forth to/from the proposed centralized parking area). The 65 vehicle-trips per day may be an overestimate, due to some of those vehicle-trips being associated with summer-only/seasonal usage, and there is also likely to be some employee/guest/guide "carpooling." We are estimating **this project could create additional traffic on Highway 550 of approximately 65 vehicles per day, which appears to be relatively minimal in comparison to the current (August 2020) estimated bi-directional total Highway 550 AADT of 2,733 vehicles per day**.

Thank you for the opportunity to present this report of initial traffic and transportation information for the Proposed Silver Cloud Lodge/PUD. Please contact the Applicant Colby Barrett, or Engineer Mountain Inc. if you have any questions.

Thanks,

Lisa Adair PE
Engineer Mountain Inc.

Gmail

Lisa Adair <engineermountaininc@gmail.com>

RE: VCUP Update

1 message

bbriggs@bkbassoc.com <bbriggs@bkbassoc.com> Tue, May 7, 2024 at 5:08 PM
To: Lisa Adair <engineermountaininc@gmail.com>, Colby Barrett <cbarrett17@gmail.com>

Work on the VCUP started in early September. During the first 45 days we mobilized the equipment and materials to the site and installed the 100yr event stormwater controls including lining the sediment pond and all the perimeter ditches.

Work on the VCUP retaining wall and containment cap was then delayed for approximately three weeks as soil nails, hollow bar and fencing were installed by GSI and on the uphill side of the containment area. This slope stability work was required due to the removal of material from Borrow Area A which removed the toe of the slope. Once the uphill slope was fully stabilized work began in late October on the VCUP retaining wall at the bottom the containment area. Work also began on opening and stabilizing the existing mine portal to allow access to Borrow Area B which will supply the bulk of material needed for the containment cap and cove.

At this point we have fully completed the following two tasks:

Task 2 Cap Grading

Task 3 Excavation of Borrow Area A.

The remaining tasks are as follows:

Task 4 Portal Rehabilitation is approximately 35% complete and will need to be fully completed before beginning excavation in Borrow Area B.

Task 5 Underground Borrow Area B did not have any work completed last year.

Task 6 Slope construction refers to the installation of the retaining wall on the face of the containment area and installation of the cap and cover. Less than 25% of the retaining wall is complete and 0% of the cap and cover is complete.

We plowed into the site on May 2nd and will let the site dry out over the next two weeks. We expect to mobilize back to the site the week of May 13th. Work will begin on the retaining wall on May 20th. Work is expected to begin on the Portal rehab in early June and Borrow Area B by mid-June or earlier if possible.

Brian K. Briggs P.E.
403 N. 1st Street
Montrose, CO 81401
USA
Cell: +1 970.596.1982
Email: bbriggs@bkbassoc.com

COLORADO
Department of Public Health & Environment

August 25 25, 2023

Mr. Colby Barrett
Bonanza Boy LLC
Highway 550
Silverton, CO

RE: Voluntary Cleanup Plan Approval for Silver Crown Mine Site, in Silverton, CO

Dear Mr. Barrett:

The Colorado Department of Public Health and Environment (the "Department") has reviewed the voluntary cleanup plan submitted on behalf of Bonanza Boy LLC (the Applicant) concerning the property identified in the application and known as Highway 550, in Silverton, CO (the site). This review was limited to the materials submitted by the Applicant, as well as those materials required by 25-16-304(2) C.R.S.

Based on this review the Department has concluded that, if fully and properly implemented, the plan will attain a degree of cleanup and control of hazardous substances and petroleum products, such that the property does not present an unacceptable risk to human health or the environment based on the property's proposed future use, which is **Residential Use**.

In accordance with the Voluntary Cleanup and Redevelopment Act 25-16-301 to 311, C.R.S., the Department hereby approves the voluntary cleanup plan submitted by the Applicant for the property identified in the application and known as Highway 550, in Silverton, Colorado. It is the opinion of the Colorado Department of Public Health and Environment that upon completion of the voluntary cleanup plan no further action is required to assure that this property, when used for the purposes identified in the voluntary cleanup plan (**Residential Use**), is protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site.

The approval of the voluntary cleanup plan by the Department, and the Department's conclusions and opinions relating thereto, apply only to conditions on the property and state standards that exist at the time of submission of, and which were addressed in the voluntary cleanup plan application. The submission of any materially misleading information by the Applicant in the context of a voluntary cleanup plan shall render the Department's approval of the plan void. In addition, failure of the Applicant to materially comply with the voluntary cleanup plan shall render the Department's approval of the plan void.

Further, if the voluntary cleanup plan is not initiated within twelve months after approval by the Department, or completed within twenty-four months after approval or within a Department approved extension for completion of the voluntary cleanup plan, the approval shall lapse, and reapplication and Department approval pursuant to 25-16-306(4), C.R.S. is required prior to implementation of the lapsed voluntary cleanup plan.

Within forty-five days after completion of the voluntary cleanup described in the plan approved by the Department, the Applicant shall provide to the Department a certification from a qualified environmental professional that the voluntary cleanup plan has been fully implemented. Any person who fails after initiation of an approved voluntary cleanup plan, to fully and properly implement the plan, may be required by the Department to take further action provided such action is authorized or required under applicable state laws and regulations.

The Applicant shall comply with all applicable federal, state, and local laws or regulations and shall obtain all necessary approvals or permits to conduct the activities required by the voluntary cleanup plan. The Department makes no representation with respect to approvals or permits required by federal or local laws or regulations or state laws or regulations other than the Voluntary Cleanup and Redevelopment Act.

Further, the Department shall not be liable for any injuries or damages to persons or property resulting from acts or omissions of the Applicant or those acting for or on behalf of the Applicant, including its officers, employees, agents, successors, representatives, contractors, or consultants in carrying out the activities required by the voluntary cleanup plan. Nothing in the Department's approval of the voluntary cleanup plan, or the Department's conclusions or opinions relating thereto, shall constitute an express or implied waiver of sovereign immunity otherwise applicable to the Department, its employees, agents, or representatives.

Nothing in this letter shall be construed to limit the Department's authority, and the Department reserves all rights and authorities to bring any action pursuant to applicable state laws or regulations.

If you have any questions, please contact me at Fonda.Apostolopoulos@state.co.us or (303) 692-3411.

Sincerely,

Fonda Apostolopoulos
Voluntary Cleanup Program

File: RV230624-1

SAN JUAN COUNTY
COLORADO

1557 GREENE STREET
P.O. BOX 466
SILVERTON, COLORADO 81433
PHONE/FAX 970-387-5766 admin@sanjuancolorado.us

August 24, 2023

Mr. Colby Barrett
Bonanza Boy LLC
PO Box 992
Montrose, CO 81402

Mr. Barrett:

This letter is to inform you that your Land Use Permit 2023-08-01 was conditionally approved by the San Juan County Commissioners during their regular meeting of August 9, 2023. This approval allows you to do the mining reclamation work as presented in your application on the mine dump located on the Shelbyville Lode USMS 18168 provided that the following conditions are met:

1. That the applicant acknowledges that emergency services will not be available in a timely manner and perhaps not at all.
2. All work on the Shelbyville Lode shall fully and completely comply with, and strictly conform to, all terms, conditions and restrictions contained in the San Juan County Zoning and Land Use Regulation, all permits issued, and all applicable State and Federal rules and regulations.
3. That no work on the site shall begin until the Colorado Department of Public Health and Environment (CDPHE) has approved your Voluntary Cleanup Plan (VCUP) and that the remediation of the site be in compliance with the Voluntary Cleanup Plan as approved. Authorized and monitored by CDPHE.
4. The failure to comply with these conditions shall be grounds for the revocation of this approval and for any future Land Use or Improvement Permits.

Please sign below and return a copy of this letter to acknowledge that you accept the conditions of approval.

If you have any questions, contact me at your convenience.

Sincerely,

William A. Tookey
Land Use Administrator

I accept the conditions of approval for Land Use Permit 2023-08-01.

Colby Barrett, Bonanza Boy LLC

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: **COR419462**

This Certification to Discharge specifically authorizes:

Owner Bonanza Boy LLC
Operator Bonanza Boy LLC
to discharge stormwater from the facility identified as

Silver Cloud

To the waters of the State of Colorado, including, but not limited to:

Mill Creek

Facility Activity :	Commercial Development, Non-structural and other development (i.e. parks, trails, stream realignment, bank stabilization, demolition, etc.)
Disturbed Acres:	0.73 acres
Facility Located at:	0560 Forest Service Road 821, Silverton CO 81433 San Juan County Latitude 37.871483 Longitude -107.743843
Specific Information (if applicable):	

Certification is issued and effective: 02/17/2023
Expiration date of general permit: 3/31/2024

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Randi Johnson-Hufford, Permits Unit 1 Manager
Permits Section
Water Quality Control Division

COLORADO
Water Quality Control Division
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

Colby Barrett, President
Bonanza Boy LLC
P.O. Box 992
Montrose CO, 81402

Colby Barrett, President
Bonanza Boy LLC
P.O. Box 992
Montrose CO, 81402

TO: Bonanza Boy LLC and Bonanza Boy LLC

FROM: **WQCD Permits Section 303-692-3517;** cdphe_wqcd_permits@state.co.us

DATE: **10/26/2023**

RE: WQCD CDPS Permit application for COR400000

The Water Quality Control Division received an application from Bonanza Boy LLC for the COR400000-Stormwater discharge associated with construction activities that was renewed on 2023-10-20. The application requests discharge authorization for Silver Cloud located at 0560 County Road 15, Silverton, CO 81433 (Facility SIC). The assigned permit certification number is COR419462.

The renewal application has been reviewed and is considered complete for the purposes of filing. The Division has not verified all of the information contained in your application and has relied upon your signed certification to determine that the information is true, accurate, and complete. No new permit certification has been issued at this time. The Division will issue a renewal certification upon the effective date of the renewal of the general permit.

In the event that the Division does not issue a renewal prior to the current general permit expiration date, the expired general permit shall be administratively extended and continue in force until the issuance of a renewal permit certification. **This is the official notice of your eligibility for an administrative extension. The general permit and your permit certification shall become administratively extended on April 1, 2024, if the renewal general permit is not effective by April 1, 2024.**

The renewal application will undergo a technical review once it is assigned to a permit writer. At that time, the Division may contact you to request additional information in order to further evaluate the technical information included in your application and evaluate the discharge.

If any of the information submitted in your application is no longer true, accurate, and complete, please submit a modification application on your existing certification or a transfer on your existing certification using the CEOS system.

We have the following contacts on file; however, if any of this information changes from the date your application was submitted until we issue your permit, please send a revised application/change of contacts form within the CEOS system. Permittee Contacts: the person authorized to sign and certify the permit application. This person receives all permit correspondences *[Including invoices; is contacted for any questions relating to the facility; and receives DMRs as appropriate]* and is the person responsible for ensuring compliance with the permit:

Operator Contact

Colby Barrett, President
Bonanza Boy LLC
P.O. Box 992
Montrose CO, 81402
Phone number: 3039096083
Email: cbarrett17@gmail.com

Owner Contact

Colby Barrett, President
Bonanza Boy LLC
P.O. Box 992
Montrose CO, 81402
Phone number: 3039096083
Email: cbarrett17@gmail.com

Facility Contact *(contacted for general inquiries regarding the facility):*

Brian Briggs, Consultant
B.K. Briggs & Associates
2019 Otter Pond Circle
Montrose CO, 81401
Phone number: 9705961982
Email: bbriggs@bkbassoc.com

Billing Contact *(receives the invoice pertaining to the permit certification):*

Colby Barrett, Owner
Bonanza Boy LLC
P.O. Box 992
Montrose CO, 81402
Phone number: 3039096083
Email: cbarrett17@gmail.com

If you have any questions, feel free to contact the Permits Section and refer to the permit number COR419462. We have detailed email and telephone contact information available on the Division website at the "Division Contacts". You may also contact us by calling the permits line at 303-692-3517 or emailing the permits email at cdphe_wqcd_permits@state.co.us.

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY

Certification Number: **COR419462**

This Certification to Discharge specifically authorizes:

Owner Bonanza Boy LLC
Operator Bonanza Boy LLC
to discharge stormwater from the facility identified as

Silver Cloud

To the waters of the State of Colorado, including, but not limited to:

Mill Creek

Facility Activity :	Commercial,NonStructural
Disturbed Acres:	0.73 acres
Facility Located at:	0560 Forest Service Road 821 Silverton 81433 San Juan County Latitude 37.871483 Longitude -107.743843
Specific Information (if applicable):	

Certification is issued: 3/25/2024
Certification is effective: 4/1/2024
Expiration date of general permit: 3/31/2029

This certification under the general permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the COR400000 permit.

This certification was approved by:
Andrew Sayers-Fay Permits Section Manager
Clean Water Program
Water Quality Control Division

Bonanza Boy LLC.

Silver Cloud Project

STORMWATER MANAGEMENT PLAN (SWMP)

In Conformance with the Guidelines set by:
Colorado Department of Public Health and Environment
Water Quality Control Division

Date:
Prepared January 2023
Updated December 2023

STORMWATER MANAGEMENT PLAN (SWMP)

Facility Name: Silver Cloud
Facility Type: Lodge construction project
Date Initial Operations Started: Est. April 2022
Facility Mailing Address: Bonanza Boy LLC
PO Box 992
Montrose, CO 81402
Facility Location Address:0560 County Road 15
Silverton, Colorado

Management Approval Statement:

This SWMP plan is fully supported by the management of Bonanza Boy LLC. Bonanza Boy LLC. will implement this plan and amend it as needed due to expansion, modifications and improvements at the facility. I certify under penalty of law that a completed Stormwater Management Plan, in compliance with Part I.B of the permit, has been prepared and implemented for my facility. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Stormwater Management Plan is, to the best of my knowledge and belief, true, accurate, and complete, and implemented as written. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations.

_____

Colby Barrett, President

Certifying Engineer's Statement:
This plan was prepared using sound engineering practices. I have examined the facility and this plan and find this plan conforms to the federal and state guidelines.

Name:Travis Leach, P.E.
Company:B.K. Briggs & Associates
State Registration No.: Colorado # 53458

Signature: _____

Date: _____SEAL

Introduction

This Stormwater Management Plan (SWMP) is prepared to mitigate potential impacts to Waters of the U.S. (Mill Creek) resulting from construction activities at the Silver Cloud Project by Bonanza Boy LLC. in San Juan County, Colorado. As an active construction project, the measures outlined in this Plan will significantly improve the stormwater management of the Silver Cloud and as such, will lessen the impact of sediment laden stormwater to Mill Creek, which is the receiving water. This impact is addressed in this Stormwater Management Plan, as well as the measures taken to mitigate said impact.

Site Description

The Silver Cloud Project is located along Mill Creek along San Juan County Road 15 near Chattanooga. The project is approximately 6 miles southeast of Telluride, CO.

The site is bordered by Mill Creek to the South, mountains of the San Juan range to the West and North, with US 550 running near the east edge of the site. The Site Map is attached to this SWMP as **General Location Map.**

The center point of the property is located at latitude 37°52'17" and longitude 107°44'37".

The Silver Cloud is owned by Bonanza Boy LLC.

Bonanza Boy LLC
PO Box 992
Montrose, CO 81402

Key Elements of this Plan

- ***Stormwater*** from rainfall or snowmelt will pass through the site on its way to Mill Creek. All disturbed areas have collection systems in place that will direct runoff to sediment ponds to prevent sediment discharge. See SWMP Map. There are upstream diversion ditches to direct runoff from above away from the construction site.

- ***Sediment is classified by the State as a potential pollutant,*** therefore all disturbed area runoff will be collected in sediment ponds to prevent sediment being contributed to Mill Creek.

- The best method of managing site runoff water quality is to ***remove and properly dispose of any site contaminants*** that could be transported by stormwater runoff. All activities that could produce non-sediment pollutants will be contained with secondary containment and all other consumables will be stored in a storage connex to prevent discharge.

- ***On-site Stormwater*** (stormwater contacting the surface construction activity area of the site) shall be contained within the project site and routed to a sediment pond before being discharged into Mill Creek.

- All disturbed areas will drain to a sediment pond located on the site. See the SWMP Map for the flow directions from particular portions of the site.

- Any discharge of ***On-Site Stormwater*** to surface waters will be regulated through the Water Quality Control Division for discharges associated with construction projects for stormwater.

- Any discharge of ***On-Site Stormwater*** from the site shall be sampled and tested in accordance with the CDPHE Stormwater Permit.

- The only acceptable methods of managing on-site stormwater runoff are to contain it for ***Use in Operations***, for ***Infiltration*** into the ground, for ***Evaporation*** into the air, or ***Discharge*** to the Creek.

1. Description of Construction Activities

Bonanza Boy LLC. will conduct surface and underground construction operations at the Silver Cloud project site. Bonanza Boy LLC. is permitted for the following uses on the property:

- Recreation lodge and facilities
- Surface support facilities
- Potable Water Treatment Plant
- Fuel & Lubricant Storage

Temporary surface facilities will include a laydown yard, mobile office trailer, storage connex, and a small parking area. Permanent surface facilities will include an above ground lodge, kitchen & staff building, and a small parking area. A brief description of each activity can be found below:

underground Excavation

Bonanza Boy LLC will excavate new underground facilities to be used as recreational lodging. These facilities include an underground dining area and 6-10 rooms. Excavated unmineralized material will be used for construction purposes on site.

Temporary SURFACE FACILITIES

The laydown yard will be for storage and assembly of construction materials.

The mobile office trailer will be for project management and team meetings.
The storage connex will be used to store consumables and construction materials out of inclement weather.
The small parking area will be for construction vehicles and equipment.

Permanent SURFACE FACILITIES

The above ground lodge will contain five total 4-person rooms, loft space, conference room, and employee housing.
The greenhouse will be used to sustainably grow food.
The small parking area will be for customer and company vehicles.
All facilities at Silver Cloud will be constructed within disturbance areas that will have runoff control systems. These facilities can be seen on the SWMP Map.

Fuel Storage

There will be one (1) double-walled five hundred (500) gallon diesel fuel storage tank on site during construction. The diesel tank will be located near the surface buildings as shown on the SWMP Plan Map. The diesel tank is fabricated with a double wall construction providing adequate secondary containment.

Lubricants used during construction will be stored in fifty five (55) gallon drums. Drums will be situated within secondary containments that are capable of containing the largest container plus 10%.

2. Area Subject to Effluent Limitations Guidelines

The area subject to effluent limitations is Planned Disturbance Area 1: 0.73 acres, as shown on the SWMP Map. This is the main disturbance area of the site.

3. Site map

See Appendix C for General Location Map.
See Appendix C for SWMP Site Map.
See Appendix C for Typical Designs.

4. Stormwater Management Controls

a. SWMP Administrator

The SWMP Administrator is responsible for the daily Stormwater Management Plan (SWMP) administration at this site. This designated person is Bill Coughlin, and can be reached at 1-(970)-708-2139.

b. Identification of Potential Pollutant Sources and BMPs

The following potential pollutant sources have been identified:

- Final placement and temporary stockpiles of excavated material; and
- areas disturbed by construction equipment.

All stormwater within the disturbed area on site including the temporary stockpiles of excavated material, is routed to the sediment ponds on site by way of the collection ditches.

Best Management Practices (BMP's)/ Controls

This Stormwater Management Plan was developed to prevent degradation of stormwater from the Silver Cloud construction site. The Best Management Practices (BMP's) are intended to prevent generation of additional sediment from the site.

At this time, infiltration of stormwater into the soil is not regulated under this SWMP program. Water quality of groundwater

is not being tested under this program since percolation through the soil generally reduces the transport of oils and suspended sediment. However, hydrocarbons can be transported through groundwater and can impact receiving streams and aquifers. Therefore, it is important to reduce the introduction of contaminants into the groundwater, and although testing of groundwater is not required under this program, BMPs should be implemented to minimize the ability of stormwater to transport petroleum products and other pollutants into the groundwater system.

Stormwater Management

- Off site stormwater will be redirected around the site back to natural drainages through diversion ditches.
- All disturbed areas will have runoff captured by collection ditches and contained in a sediment pond to allow for settling of sediment prior to discharge.
- The Sediment pond is designed to fully contain the runoff from a 100 year 24 hour event from the respective drainage area.
- All petroleum products will be contained with facilities with the capacity to contain any spills and prevent contribution of hydrocarbons to stormwater runoff.
- A 35 gallon spill kit will be kept on site near the 500 gallon diesel storage tank.

1. Stormwater Diversion

On-Site Stormwater Runoff

The sediment pond is designed to contain the full stormwater runoff from a 100 year 24 hour event plus sediment storage volume. Only stormwater that has contacted the surface disturbed area of the operation will be diverted to the sediment pond. Ditches which collect runoff from the entire disturbed area have been designed to direct the stormwater into this pond.

The SWMP Map shows the surface and underground construction areas.

Drainage Basin to site discharge point

As is seen from the SWMP Plan Map, there is 1 discharge point from a single pond. This sediment pond will contain

the drainage from the entire construction area, the drainage area to the Sediment Pond is 0.73 acres. This is the vast majority of the disturbed area of the site. Water from disturbed areas flows to the pond using the collection ditches. No off-site areas drain to the sediment pond since Diversion ditches are employed to direct off-site runoff away from the construction site. The flow directions are shown on the SWMP Map.

Drainage Basin to MILL CREEK

Mill Creek, upstream of the project, is highly mountainous and drains an area of approximately 3927 acres.

Offsite Sources

There are none for this site due to the diversion ditches. See SWMP Map for diversion ditch numbers and associated directional flows.

2. Materials Handling & Spill Prevention

It is anticipated that no stormwater discharges will occur for any stormwater events prior to being allowed to settle in the setting pond. The sediment pond is sized to a 100-year runoff event and will be constructed using best available construction. All petroleum products will be stored with secondary containment and a spill kit will be kept on site. These best management practices will minimize the risks if a discharge occurs. A summary of estimated risks if a discharge were to occur is presented below:

Pollutant	Sediment Pond
Oil and Grease	Low
Total Dissolved Solids	Low
Total Suspended Solids	Low
pH (Outside Range 6.5 to 9.0)	Low

3. Sediment & Erosion Prevention

All areas exposed to sediment or with potential for erosion will require a control measure that will be defined during the maintenance/construction planning phase of each project at the site.

Sediment control BMPs located around the site will have a sediment barrier consisting of a row of entrenched and anchored erosion bales (straw bales). Erosion bales hold up to the extreme winter conditions at the project site. Life of the bales is approximately one year by the industry standard. Bales may be replaced sooner if the control provides inefficient support or does not intercept, slow, or detain the flow of storm water to allow sediment to settle and be trapped.

All erosion bales will be either wire-bound or string-tied, and will be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales. In order to prevent water from escaping between the bales, the area will be filled with straw, therefore obtaining tight joints. Loose straw will be scattered over the area immediately uphill from an erosion bale barrier to increase barrier efficiency.

Inspections of bales will be conducted during weekly inspections. Repairs will be made promptly. Erosion/Sediment accumulation against the erosion bale barrier will be removed when it reaches half the exposed bale height.

Erosion logs (wattles) and silt fencing may also be utilized in the right application. All controls will be noted on the SWMP Map. Erosion logs and silt fencing will be installed to manufacturer's specifications and replaced as needed. All controls will be inspected during the weekly inspections and any deficiencies noted and corrected as soon as practically possible.

Controls will be located at two main areas on site. The toe of the historic waste rock dump will have controls placed along the south-east and east sides. The 2 trout ponds at the eastern edge of the site will have controls placed along

the south-eastern and eastern edges. The locations of control measures are shown in Appendix C on the SWMP Site Map.

4. Other pollutant prevention measures.

No additional measures are required other than what is provided.

c. Preventive maintenance

These are the inspection and maintenance practices that will be implemented to control stormwater runoff quality:

- Weekly site inspections will be conducted to ensure that the sediment control structures are functioning correctly. This includes ditches, ponds and culverts.
- The sediment pond will be dewatered within 72 hours after a storm event to maintain pond capacity.
- The emergency spillways at each pond will be checked for erosion or sediment buildup.

d. Good housekeeping

The following good housekeeping practices will be employed at the site:

- Substances stored on-site will be stored in a neat, orderly manner in their appropriate containers.
- Open containers of non-hazardous materials shall be stored under a roof or other enclosure to prevent mixing with stormwater.
- The Project Manager is responsible for day-to-day site operations and directing spill prevention, cleanup, and reporting.
- Waste oil will be stored within a designated above ground storage tank or in covered areas to prevent mixing of

stormwater and oil.

- If drip pans are used, they will be cleaned on a regular basis and not allowed to fill with stormwater.
- Hazardous materials will be stored in accordance with the Uniform Fire Code, and placards will be visible to identify the potential hazards. The classification of any material stored on-site shall be made by the fire department.

e. Spill prevention and response procedures

Spills on the Silver Cloud site are most likely to happen at the 1- 500 gallon diesel tanks or at a piece of equipment during maintenance. All of these containers will have secondary containment at least 110% of the full tank capacities. A 35 gallon spill kit will be kept on site near the 1- 500 gallon tank and the storage connex in order to facilitate cleanup in case of a spill.

f. Employee Education

Bonanza Boy LLC., through the Project Manager, will train during Annual Refresher Training (ART) yearly and educate current and new employees on appropriate stormwater management, spill response, good housekeeping and materials storage practices. Best management practice training programs should also be conducted regarding improving the water quality of stormwater runoff.

Training logs will be kept in Appendix E.

5. Comprehensive Inspection

The SWMP Administrator will conduct regular inspections of the site for stormwater management controls, spill control, maintenance, and cleanup. Inspections during at least the Spring and Fall of each year shall be conducted and the records of such

inspections shall be maintained in files at the site together with the SWMP Plan. The inspections shall incorporate a complete review of all BMP's outlined in this plan and will report on any BMP's which are not functioning and/or require maintenance. Any discharges which are out of compliance with the Discharge permit shall also be reported with corrective actions outlined.

6. Consistency With Other Plans

A general discharge permit has been obtained from CDPHE. If other permits affecting stormwater are required of the site in the future, the SWMP will be modified to ensure consistency. These plans will also maintain consistency with the County and DRMS permits.

APPENDIX A FLOW MEASUREMENTS AND CALCULATIONS

FLOW MEASUREMENTS AND CALCULATIONS

STORMWATER DISCHARGE

Ditches which collect runoff from the entire disturbed area have been designed to direct the stormwater to a sediment pond. The

pond will have two discharge devices: 1) is a 4" pipe with a valve that is normally shut and will only be opened after large storm events and 2) a trapezoidal emergency spillway built into the top of the embankment which will allow the pond to safely pass the 100 year peak flows through the pond. This pond will only be present for the construction life of the project, which is expected to be 5 years. After such time, the drainage areas leading to the pond will be fully reclaimed. It is important to note that these areas are now almost devoid of vegetation so that Bonanza Boy LLC. will be significantly improving the long-term reclamation of the site and lessening the sediment load to Mill Creek.

During the life of this pond, it will likely never discharge during winter months and since it is built to fully contain the runoff from a 100-year storm event, it will hardly ever discharge during the rest of the year.

The flow data measured on site using the procedures described above will be recorded on the form below. The completed forms are available on site with this SWMP Plan.

Pond #____							
Date of measurement	Avg. Velocity (if measured ndependently)	Height of low (feet)	Flow in CFS from Weir equation	Cross sectional area (if measured ndependentl y)	Flow = A x Avg. Velocity	Person Taking Readings	Comments

Stormwater Calculations

Runoff Curve Numbers (CN) for Watershed Area Draining to Sediment Pond (6.995 acres)

DescriptionHydrologic Soil GroupArea (acres)CN

Disturbed Land Group B Soils0.7366

An area of 0.73 acres will drain to the discharge point for the Pond for the worst-case disturbance of this site.

Hydrologic Soil Group
Group A Soils: High infiltration (low runoff). Sand, loamy sand, or sandy loam. Infiltration rate > 0.3 inch/hr when wet.
Group B Soils: Moderate infiltration (moderate runoff). Silt loam or loam. Infiltration rate 0.15 to 0.3 inch/hr when wet.
Group C Soils: Low infiltration (moderate to high runoff). Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.
Group D Soils: Very low infiltration (high runoff). Clay loam, silty clay loam, sandy clay, silty clay, or clay. Infiltration rate 0 to 0.05 inch/hr when wet.

The storage volume to prevent discharge is calculated as the volume of the main pit above the water table. The water table lies greater than 5 feet below the surrounding surface. This scenario assumes that the pump is not working and the pit has filled to equilibrium level. The area of lower pit that will have the 5 feet of available height is calculated below:

The following areas were calculated using Google Earth.

Runoff Curve Number and Runoff

Project: Silver Cloud By: T Leach Date: 12/13/22
Location: 0560 County Road 15
Silverton, Colorado

1. Runoff Curve Number (CN)

Cover description	CN	Soil Type	Area	
Historically Disturbed Land, Disturbed (Poor)	66	B	0.73	

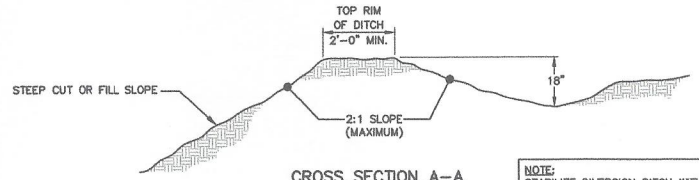
CN (weighted): 66.0
Total Area: 0.73 Acre

2. Runoff
Return Period: 100-Year
Rainfall, P: 5.0 in
Runoff, Q: 1.73 in
Runoff Volume: 0.25 Acre-Ft

The stormwater volume was determined using the calculations below as described in the "Procedures for Determining Peak Flows in Colorado", which includes and supplements Technical Release No. 55 "Urban Hydrology for Small Watersheds." Prior to discharge, sediment will be controlled by keeping the pit pump lower than the working area and by having gravel berms to prevent silty water from the pit bottom from entering the pit pump directly.

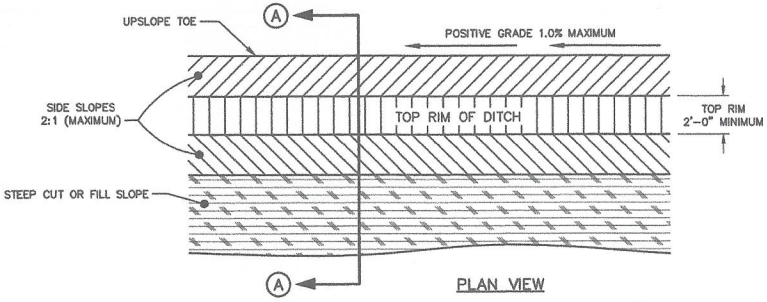
APPENDIX B - MSDS Sheets for All Chemicals Used on Site

APPENDIX C- General Location Map, *SWMP MAP, Typical Designs (2 maps, 1 Drawing)*



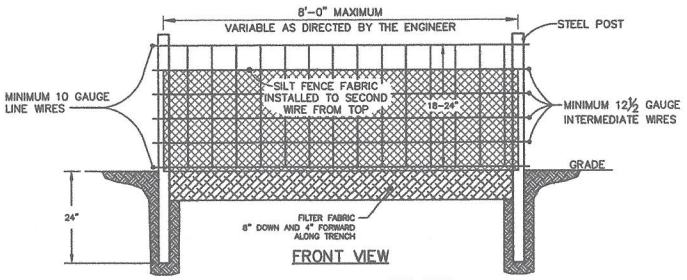
CROSS SECTION A-A

NOTE:
STABILIZE DIVERSION DITCH WITH TEMPORARY SEEDING AND EROSION CONTROL MATTING.



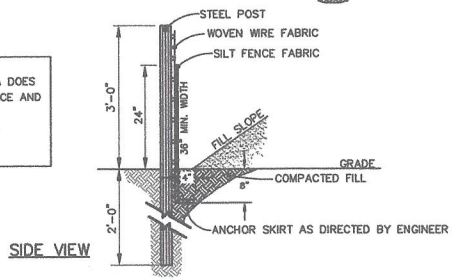
PLAN VIEW

STANDARD TEMPORARY DIVERSION DITCH



FRONT VIEW

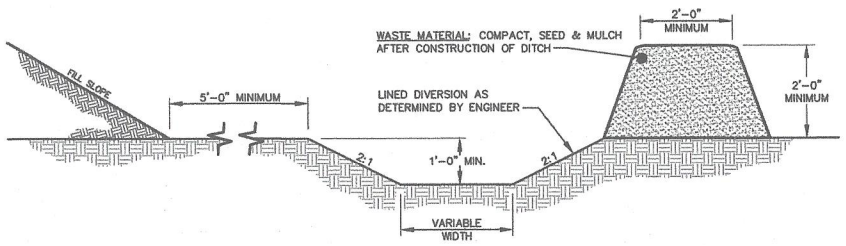
NOTES:
1) USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE PER 100 ft. OF FENCE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2) OVERLAP 12 INCHES WHEN SPLICING FABRIC.
3) FOR REPAIR OF SILT FENCE FAILURES USE DETAIL 04000.23.



SIDE VIEW

STANDARD TEMPORARY SILT FENCE

NOTES:
1. TEMPORARY SILT DITCH TO BE USED WHERE TOE OF FILL SLOPES EXCEEDS 3 FEET IN VERTICAL HEIGHT AND ALONG STREAMS TO INTERCEPT FLOW AND/OR DIVERT TO A CONTROLLED OUTLET.
2. BERM SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.



CROSS SECTIONAL VIEW

STANDARD TEMPORARY DIVERSION BERM

COLORADO LICENSED
TRAVIS AUSTIN LEACH
53458
PROFESSIONAL ENGINEER

Engineer's Certification

I, Travis Austin Leach, being a Registered Professional Engineer in the State of Colorado, do hereby certify that this drawing has been completed by me or under my direct supervision and that it is true and correct to the best of my knowledge and belief.

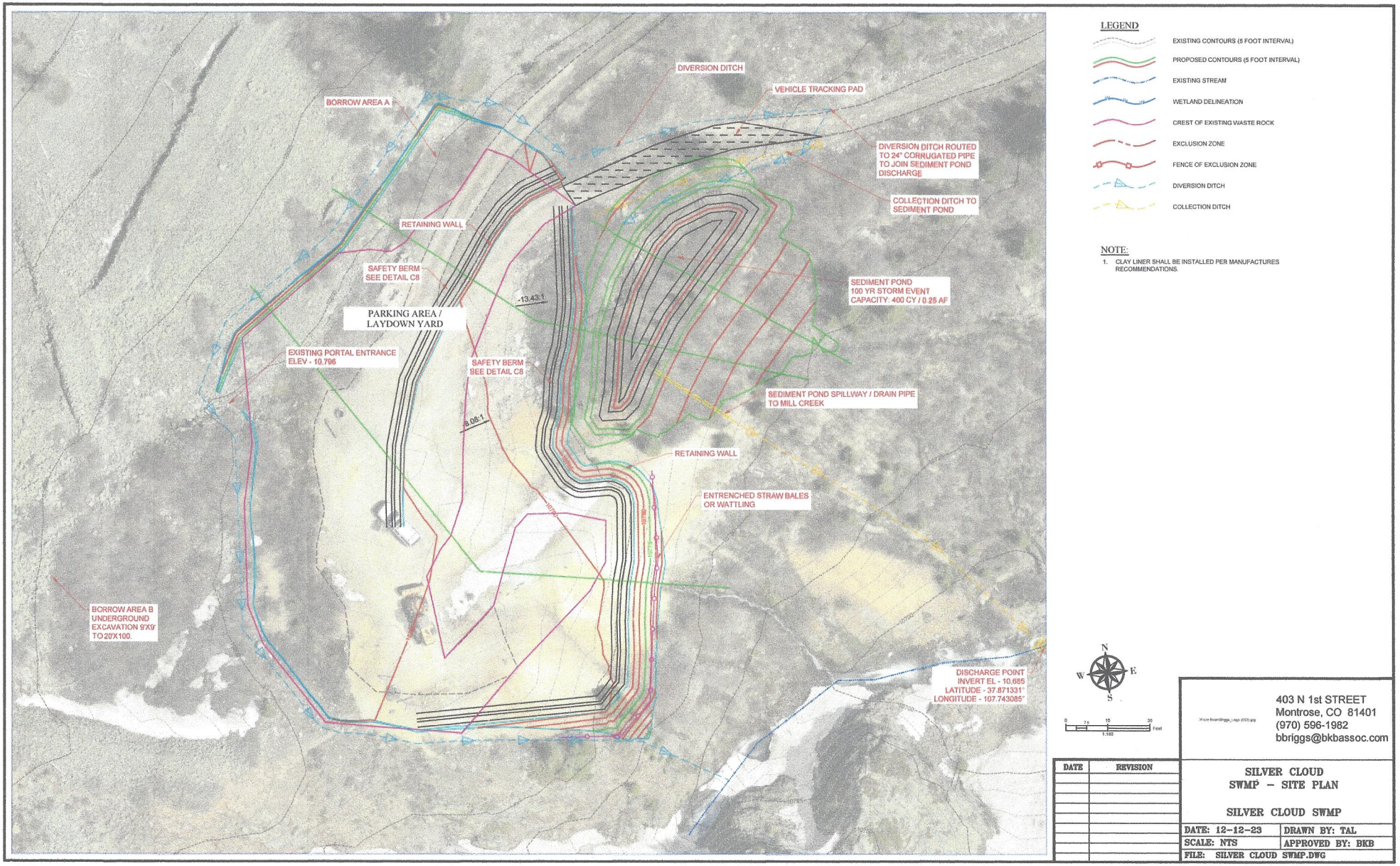
2019 Otter Pond Circle
Montrose, CO 81401
(970) 596-1982
bbriggs@bkbassoc.com

DATE	REVISION

Silver Cloud
Typical Designs

Drawing No.: C3

DATE: 12-08-2022	DRAWN BY: TAL
SCALE: AS SHOWN	APPROVED BY: BKB
FILE: SILVER CLOUD SWMP MAP.DWG	



403 N 1st STREET
Montrose, CO 81401
(970) 596-1982
bbriggs@bkbassoc.com

DATE	REVISION

SILVER CLOUD
SWMP – SITE PLAN

SILVER CLOUD SWMP

DATE: 12-12-23	DRAWN BY: TAL
SCALE: NTS	APPROVED BY: BKB
FILE: SILVER CLOUD SWMP.DWG	

Gmail Lisa Adair <engineermountaininc@gmail.com>

Bonanza Boy Millsite Wetland Delineation and Conceptual Site Plan

1 message

cbarrett17@gmail.com <cbarrett17@gmail.com> Tue, Feb 6, 2024 at 1:12 PM
To: "Feyder, Tucker J CIV USARMY CESPA (USA)" <Tucker.J.Feyder@usace.army.mil>

Hi Tucker, I wanted to update you on the status of our project near Chattanooga, CO.

1. Our Voluntary cleanup of the Silver Crown mine (in coordination with CDPHE) started last fall and is on-track. We've rerouted the adit water so it is no longer passing through the waste rock and have stabilized approximately 30% of the waste rock slopes. This year we plan to complete the cleanup and cap 100% of the waste rock, thereby completing the VCUP. As you'll recall, this work did involve the filling of a very small area (0.04 acres) of non-jurisdictional wetlands, which we coordinated with CDPHE before commencing construction.
2. We have consulted with Mountain studies institute to design a stream restoration project of Mill Creek. See: https://app.box.com/s/wyyg71mdg13s00zq78e3rsa03swndlyt. Should create a great deal of new wetland area, but this is in the very preliminary stages. Still need input from USFS, DOW, you guys, and others. But wanted to get this on your radar early.
3. We have completed the wetland delineation on the Bonanza Boy Mill site: https://app.box.com/s/d1hh3d8ujsuzmjekhet2643fehc4ddl1, as well as our plans to build a garage/employee housing structure with associated parking. You'll note from the plans: https://app.box.com/s/f0ck017bajdy3qlbs6vxmqawwey33u0z that there will be an impact to jurisdictional wetlands.

We're currently working with the County for approval of this overall project, but wanted to get with you early to see what our next steps with USACE should be. I would propose the following:

1. We should quantify the area of wetlands that will be impacted on the Bonanza Boy Millsite and get that information to you. I think it will be pretty small, but we can quantify.
2. Quantify the new wetlands that will be created in the valley floor and see if this could count as an offset to the impacted wetlands on the Bonanza Boy Millsite.
3. Get your input on road construction on Bonanza Boy. I was leaning toward creating a permeable subgrade using open-graded stone and geotextile to allow for water to flow through and underneath the roads, but wanted to get your thoughts on this.
4. Get your input on the campsites we'll be installing as part of the stream restoration projects. If those consist of wooden platforms on stilt foundations, could they be installed in wetland areas, provided that no "filling" of wetlands occurs? We're trying to have the campers be "surrounded" by the willow and wetland complex (existing and newly created) so would love to get your input.

Let me know if a phone call would be good at this stage and what your availability is. We're submitting our plan to the County in the next few days, so hopefully we can talk soon.

Best regards,

Colby Barrett

Gmail Lisa Adair <engineermountaininc@gmail.com>

Fwd: SPA-2023-365. Silver Cloud Cleanup Permit action. NHPA Compliance

1 message

Colby Barrett <cbarrett17@gmail.com> Tue, Aug 8, 2023 at 4:00 PM
To: Lisa Adair <engineermountaininc@gmail.com>, Jeff Kurtz <JKurtz@geosyntec.com>, "bbriggs@bkbassoc.com" <bbriggs@bkbassoc.com>

FYI

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Feyder, Tucker J CIV USARMY CESPA (USA) <Tucker.J.Feyder@usace.army.mil>
Sent: Tuesday, August 8, 2023 3:49:19 PM
To: cbarrett17@gmail.com <cbarrett17@gmail.com>
Subject: RE: SPA-2023-365. Silver Cloud Cleanup Permit action. NHPA Compliance

Hi Colby,

If the mine adit waste water can be rerouted around the waste rock pile without a discharge of fill material occurring in potentially jurisdictional wetlands, then a Department of the Army permit would not be required since the project activities would not involve a discharge of dredged or fill material into waters of the United States.

Since that appears to be the case, I am fine with the project moving forward without a Department of the Army permit (since it does not appear one is required).

Very Respectfully,

Tucker Feyder
Regulatory Project Manager
Southern Colorado Branch
U.S. Army Corps of Engineers
1970 East 3rd Avenue, Suite 109
Durango, Colorado 81301
PH: (970) 259-1604 x 2
Cell: (970) 462-8193

For more information on the Corps Regulatory Program, you can visit our website at:
https://www.spa.usace.army.mil/Missions/Regulatory-Program-and-Permits/

Let us know how we're doing. Please complete the survey at:
https://regulatory.ops.usace.army.mil/customer-service-survey/

From: cbarrett17@gmail.com <cbarrett17@gmail.com>
Sent: Tuesday, August 8, 2023 9:22 AM
To: Feyder, Tucker J CIV USARMY CESPA (USA) <Tucker.J.Feyder@usace.army.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] FW: SPA-2023-365. Silver Cloud Cleanup Permit action. NHPA Compliance

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

33 CFR 330. The proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 02-28-2022

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.
Principal Purpose	Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.
Routine Uses	This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.
Disclosure	Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (*see sample drawings and/or instructions*) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Colby Middle - Last - Barrett	First - Brian Middle - K Last - Briggs
Company - Bonanza Boy LLC	Company - B.K. Briggs & Associates LLC
Company Title - Managing Member	E-mail Address - bbriggs@bkbassoc.com
E-mail Address - cbarrett17@gmail.com	
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- P.O. Box 992	Address- 2019 Otter Pond Circle
City - Montrose State - CO Zip - 81402 Country - USA	City - Montrose State - CO Zip - 81401 Country - USA
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business c. Fax d. Mobile 303-909-6083	a. Residence b. Business c. Fax d. Mobile 970-596-1982

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Brian K. Briggs to act in my behalf as my agent in the processing of this this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

Colby Barrett Digitally signed by Colby Barrett Date: 2023.07.13 17:02:27 -06'00' — 2023-07-13

SIGNATURE OF APPLICANT — DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)

Silver Cloud Voluntary Cleanup Project

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
Mill Creek

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
0650 CR 15, Silverton, Colorado

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)
Latitude °N: 37.87158
Longitude °W: 107.744224

City:
State:
Zip:

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID
San Juan County Parcel Number 47770280040001

Municipality
San Juan County

Section
N/A

Township
N/A

Range
N/A

17. DIRECTIONS TO THE SITE.
0.65 miles from the turnoff of San Juan n County Road 15 off Hwy 550.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE:
NWP 38

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
The Silver Cloud Voluntary Cleanup Action of the Silver Crown Mine dump is currently being approved by the Colorado Department of Public Health and Environment (Hazardous Material & Waste Management Division) and is being granted up to 50% in tax credits. The project proposes the capping of the Silver Crown mine waste dump with an engineered cap to reduce infiltration and metals loading in Mill Creek. The project will also reroute the Silver Crown adit discharge around the mine dump instead of allowing it to flow through the dump. Approximately 0.09 acres of wetlands will be disturbed (dried out) during the project.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
The portal discharge will be rerouted to an area outside the boundaries of the VCUP action. It is expected that the rerouted water will reestablish wetlands downslope of the mine dump as well as in the stormwater pond which will be developed as part of the cleanup.

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)
The purpose is the conduct a reclamation project of an historic mine waste rock pile (dump) which has elevated metals (Pb, Cu, Zn, Ag, Cd). Runoff and water infiltration through the mine waste dump potentially impacts Mill Creek with increased metals loading. This potential metals loading will be mitigated by rerouting the current flow from the Silver Crown adit around the mine waste rock dump instead of currently flowing through the dump. The second is capping the dump to nearly eliminate rainfall and snow melt passing through the dump.

22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by Proposed Nationwide Permit Activity (*see instructions*)

Acres
.09 acres

Linear Feet
N/A

Cubic Yards Dredged or Discharged
N/A

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project on any related activity (*see instructions*)
None

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.
N/A

25. Is Any Portion of the Nationwide Permit Activity Already Complete? ☐ Yes ☒ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

N/A

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

Silver Crown Mine Site.

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

N/A

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☒ No

If "yes", please provide the date your request was submitted to the Corps District:

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

N/A

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that this information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Colby Barrett — Digitally signed by Colby Barrett Date: 2023.07.13 17:03:03 -06'00'	2023-07-13	Brian K. Briggs — Digitally signed by Brian K. Briggs Date: 2023.07.13 16:16:00 -06'00'	2023-07-13
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The Pre-Construction Notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Wetland Delineation

Shelbyville and Mountain Chief Lodes

Silver Cloud, Colorado



By: Western Stream Works

WESTERN STREAM WORKS
970.708.2139
RIDGWAY, COLORADO
Design • Build • Restore

This Wetland Delineation has been conducted in accordance with the 1987 "Corps of Engineers Wetlands Delineation Manual".

Wetland Description

Between June 14 and July 9, 2023, Western Stream Works (WSW) delineated Shelbyville Lode and Mountain Chief Lode, to coincide with the VCUP - ACOE application submittal from Bonanza Boy, LLC. The eastern part of Shelbyville is an area where wetland enhancement and mitigation opportunities exist; this area will be included in future Mill Creek riparian and wetland enhancement project submittals.

Spring snowmelt runoff was active from an above average snow year, with three separate avalanche paths converging over Mill Creek. Certain riparian areas of Mill Creek were still under snow during delineation activities. The cascading waterfalls and snow bridges within report photos are helpful in depicting high altitude spring 2023 conditions.

WSW 1

The collapsed portal adit discharge flows downgradient, forming a pond with wetland areas surrounding on three sides: north, west, and south. The waste pile on the east side is comprised of compacted fill, which is not a wetland (Photo 1). Plot WSW 1A is not a wetland as it lies within this compacted fill material on the waste pile. Plots WSW 1B and WSW 1C are high value wetlands as they serve to filter the water from the Adit discharge. Surface flow from Adit created the wetland area and forms an Intermittent Stream Channel as it flows under the waste pile above Mill Creek.

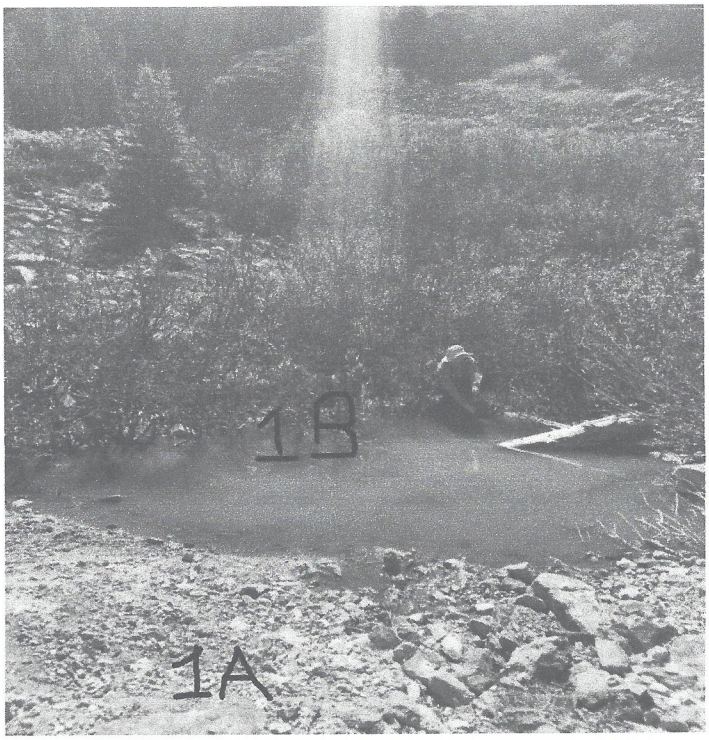
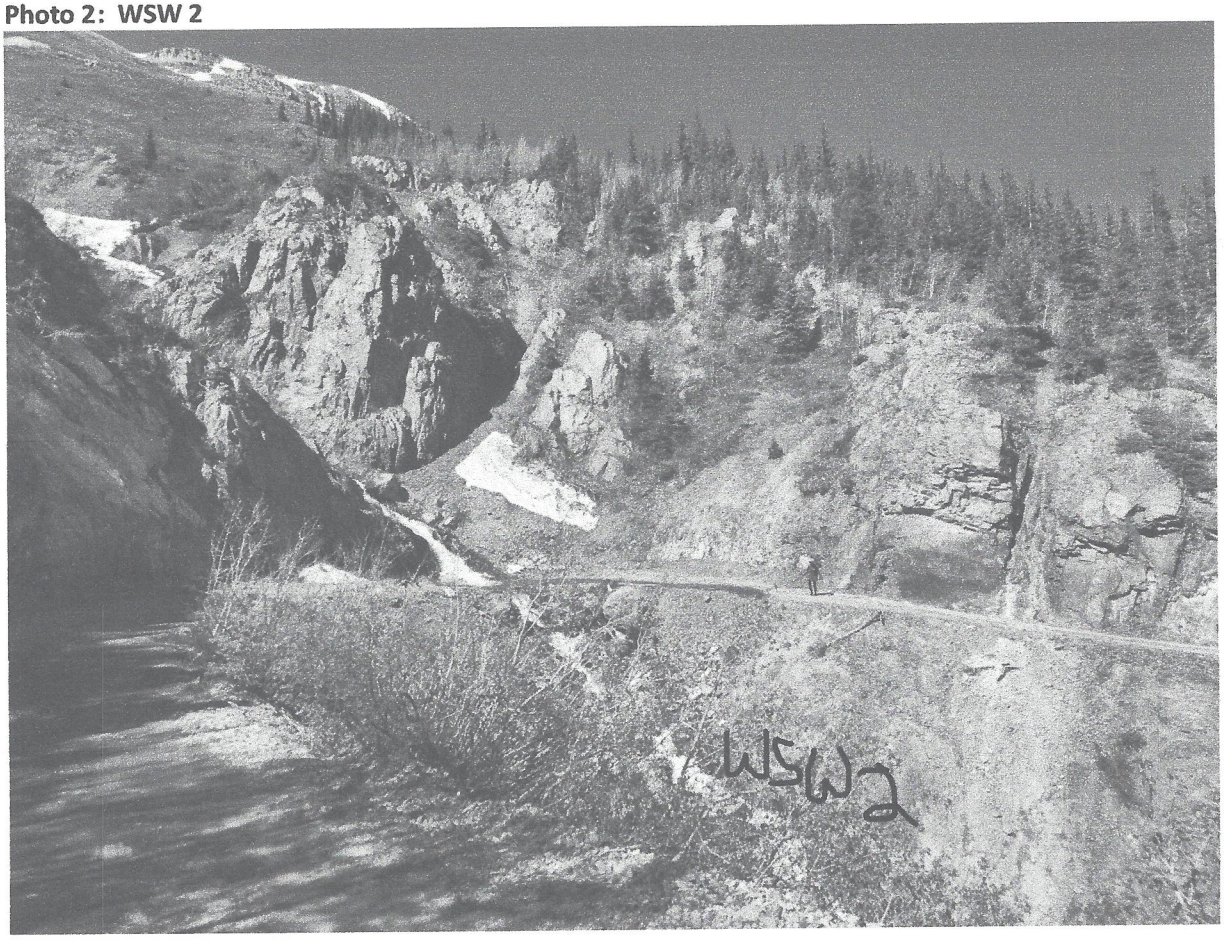


Photo 1: WSW 1A compacted waste pile across from WSW 1B wetland being assessed. Plot area descriptions are drawn in photo.

WSW 2

Plot WSW 2 defines the incised channel above Mill Creek, where a stream channel from the high-country flows in from the north (Photo 2). This channel flows over County Road 821 to Mill Creek. This channel is steeply incised within a scree slope. The channel is single thread with no floodplain areas for riparian wetlands to develop. This area has a few willows but is not a jurisdictional wetland area.

Photo 2: WSW 2



WSW 3

Plot WSW 3A is the steep slope riparian upland above Mill Creek on the north side (Photo 3). The area identified as WSW 3B is a wetland formed by discharge below the waste pile, flowing through steep hillside to Mill Creek (Photo 5). This wetland is formed within the discharge channel on both sides of the waterfall. This area is on a steep cliff over the confluence with Mill Creek. This wetland was too dangerous to flag or survey, and area must be estimated from aerial photos. Viewing the wetland from above, it appears to be approximately 20 feet across, then fans out to approximately 40 feet wide in the middle of the hillside, and finally narrows back to approximately 21 feet across as it enters Mill Creek.

Photo 3: WSW 3A Mill Creek, north side, upland riparian area



Note: Areas of Mill Creek riparian zone, at time of delineation, were covered by avalanche debris from at least three different slides converging from three directions during winter of 2023. Riparian areas covered by compacted snow are identified in black in upper portion of photo.

Photo 4: Mill Creek flowing beneath avalanche debris below WSW 3A



Photo 5: WSW 3B



Mill Creek under 2023 Avalanche Debris, June 2023. Wetland WSW 3B can be seen in upper right of photo, flowing from base of waste pile down steep gradient into Mill Creek. The wetland area is outlined with channel in center.

Wetland Boundaries

WSW wetland boundaries for Shelbyville and Mountain Chief Lodes were determined by fieldwork, determining access and areas where wetland plots would make logical sense to complete a given area within the timeframe of access conditions, weather, and safety.

WSW individual plots were selected to compare and contrast jurisdictional to non-jurisdictional areas within a given study plot. The plots were selected from access and similar geomorphological conditions. The plots were then analyzed, on an individual basis, by a combination of hydrology, soil conditions and vegetation.

Total Project Acreage

Within the ACOE permit process for Voluntary Clean-Up of the area around the waste pile, the total acreage of these two small wetlands will be submitted by Bulson Surveying. This effort will define total project acreage and total area of impact from proposed development. Considered within proposed development submittal, outside this WSW delineation, is the rerouting of year-round surface flow from adit discharge, around the waste pile to the east mitigating any chemical interaction between the surface flow stream water and the waste pile. Once the adit discharge water does not interact with the waste pile, water quality improvements are expected.

This proposed diversion (in separate permit for Voluntary Clean-Up), while beneficial from a water quality standpoint, is probable to de-water the existing wetlands. This dewatering, as a result of diverting surface flow, will potentially and probably de-water both the WSW 1 and WSW3B wetlands. This total acreage, of destroyed or impacted jurisdictional wetland areas, will have to be included in a mitigation ratio acceptable to the ACOE.

Existing Field Conditions

The delineation was completed in early spring 2023, as soon as snow and avalanche debris melted sufficiently to allow access to individual sites. The high snow ablation and sheetflow from spring runoff created challenges and setbacks to field delineations. These included rockslides covering 821 Road and the discharge above WSW 2 washing away the road continually and requiring repairs by hand to allow access with vehicles. Both a truck and a 4-wheeler were utilized to transport required equipment and personnel.

Hydrology

These wetlands exist because of surface water discharge, draining out of the collapsed portal, between the adit and the waste pile. This discharge appears to be perennial, with no interruption of flow to saturate wetlands providing the required hydrology. This is the case for both WSW 1 and WSW 3B which are directly dependent on this adit discharge.

Site Location Map

Section Township and Range: S28 T42N R8E NMPM

Photo 6: Site Location



Directions To The Site

Drive approximately 9 miles north from Silverton on Highway 550, the Million Dollar Highway. Take a left heading west on County Road 821 at the bend in the highway towards Mill Creek valley. Keep on CR 821 approximately 0.2 miles, on a 4wd only road, until the adit discharge and WSW wetland delineation flagging is visible. This site is located at flat turnaround area on the compacted top of the waste pile visible from the highway.

Contact Information for the Applicant

Bonanza Boy, LLC is the owner of the property.

PO Box 992, Montrose, CO 81402

Colby Barrett (303) 909-6083

Plant Communities and Habitat Types

Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Within WSW 1 the wetland plant communities are within a riparian area, formed by the discharge water from the mine adit discharge flowing out from the collapsed working of a historic mine. The deposition and accumulation of saturated soil from the following decades during and since operation ceased created this flat area. This bench adjacent to the waste pile has held water, and over time a vibrant wetland area surrounding a small pond. There may be inflow from water sources from hillside as well. This area is a dense willow shrubland tied into the upland above the slope, with carex and juncus at the flat saturated areas along the stream and pond. Within the wetland delineation plots WSW 1B and WSW 1C the included delineation sheets confirmed the delineation.

Within WSW 3B the discharge from the adit continues to flow through the pile and creates a waterfall to Mill Creek below. The waterfall has supplied saturation long enough, and consistent enough, through the years to form a wetland on either side of the surface water. This steep terrain is algae moss community blending in, based on terrain, to a carex and juncus and then willow community. Within the wetland delineation plot WSW 3B, the included delineation sheets confirmed the delineation.

Soil Descriptions

Specific soil descriptions are included in the WSW wetland determination sheets as primarily a loamy clay.

In my investigation of soils within this delineation effort, I've inserted below an excerpt on dust in the San Juan Mountains, as it is important to formation of wetlands. There was significant dust on the snowpack in upper basins during 2023 fieldwork, and dust and algae on the avalanche debris.

The accretion of aeolian dust in soils of the San Juan Mountains, Colorado, USA
Corey R. Lawrence, Jason C. Neff, G. Lang Farmer "Recent observations suggest a contemporary aeolian dust flux of at least 5–10 g m^{-2} yr^{-1} to high-elevation ecosystems of the San Juan Mountains of southwestern Colorado. To better quantify the influence of dust on San Juan soil geochemistry, we used Sr and Nd isotopic mixing models to estimate the total mass of accreted dust in soils of two alpine basins underlain by bedrocks of different geochemical composition. In order to minimize the potentially confounding effects caused by transient soil pools of Sr and Nd, we implemented a sequential leaching procedure that isolates the residual mineral fraction of soils and their putative parent materials,

including local saprolite and exogenous dust inputs. Using this approach, we calculated masses of accreted dust in soils, which were similar across the two isotopic tracers and differing local geologies. Long-term rates of dust accretion were estimated to be slightly higher than contemporary rates of dust deposition. We conclude that dust inputs comprise from 10% to 40% of the total soil mass in these ecosystems. Our observations suggest that dust inputs have exerted a primary control on soil development in the San Juan Mountains and have likely influenced the physical and chemical characteristics of soils in this region"

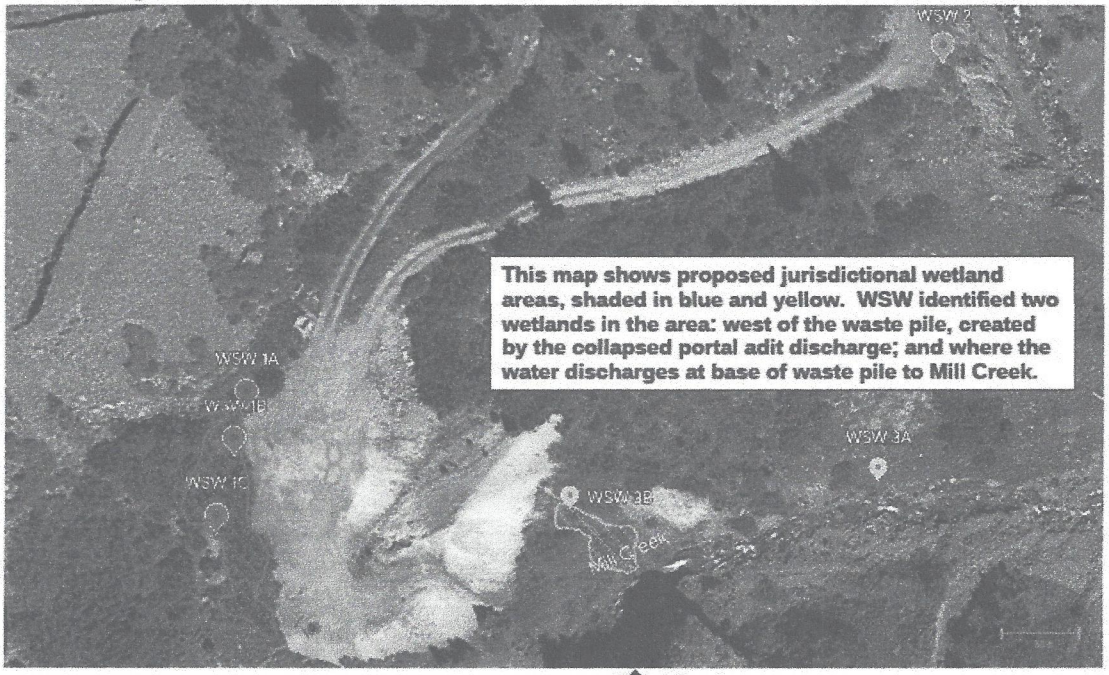
Interstate Commerce Connection

There are no observed or documented examples of an interstate or foreign commerce connection. These are high altitude tributary streams from alpine basins above, discharging into downgradient Mill Creek, within the steep sided Mill Creek drainage basin.

Delineation Maps

The following three aerial maps illustrate various aspects of the delineation. These maps are also included in the appendix in full resolution.

Shelbyville and Mountain Chief Lodes Wetland Delineation



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

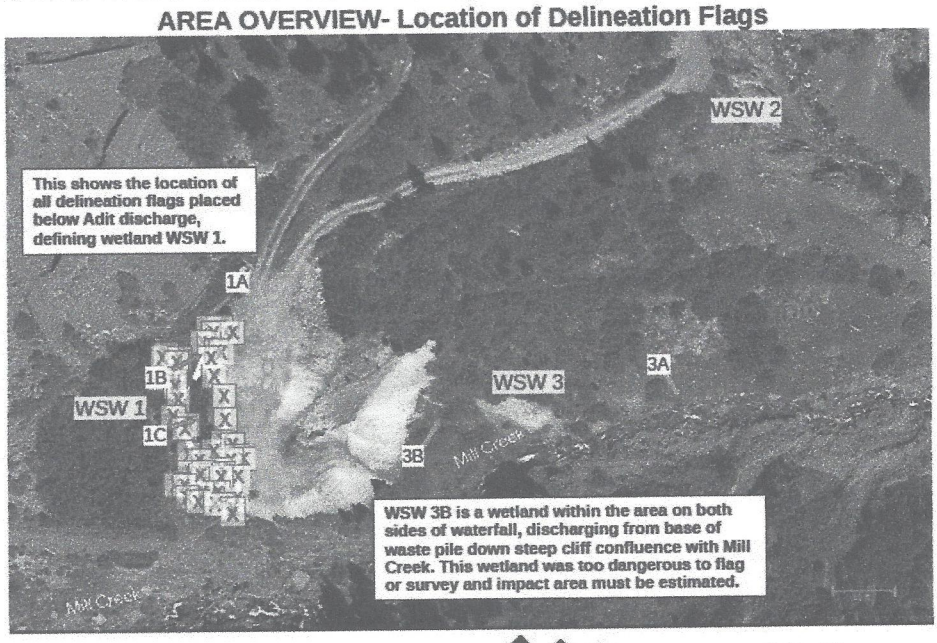
Owner: Bonanza Boy, LLC

WESTERN STREAM WORKS
Design • Build • Restore

Page 1
July 9, 2023
Western Stream Works
PO Box 301 Ridgway, CO 81432
(970) 708-2139

Shelbyville and Mountain Chief Lodes Wetland Delineation

AREA OVERVIEW- Location of Delineation Flags



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

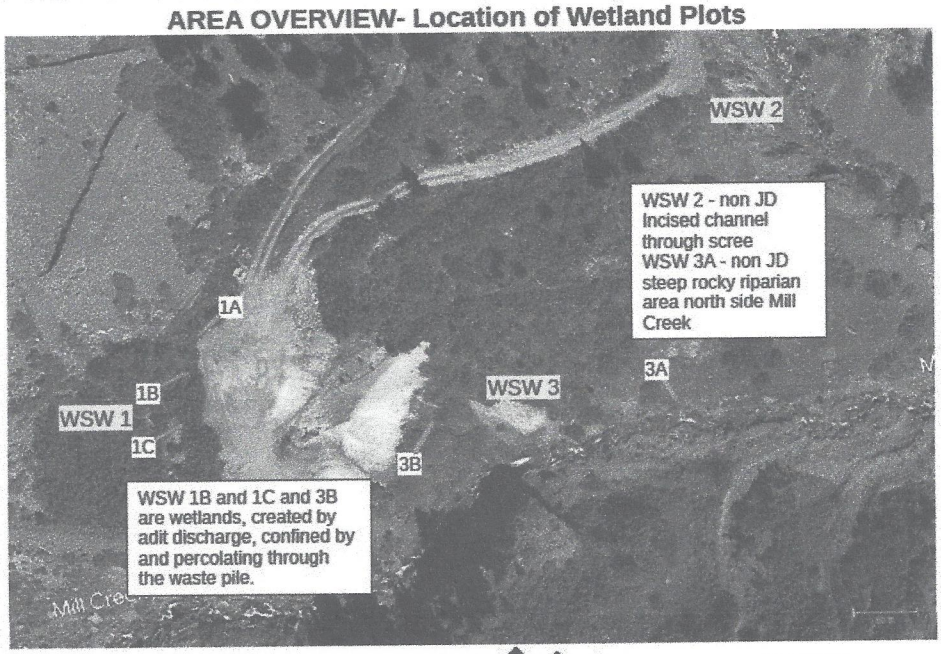
Owner: Bonanza Boy, LLC

WESTERN STREAM WORKS
Design • Build • Restore

Western Stream Works
PO Box 301 Ridgway, CO 81432
(970) 708-2139

Shelbyville and Mountain Chief Lodes Wetland Delineation

AREA OVERVIEW- Location of Wetland Plots



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

Owner: Bonanza Boy, LLC

WESTERN STREAM WORKS
Design • Build • Restore

Western Stream Works
PO Box 301 Ridgway, CO 81432
(970) 708-2139

Data Sheets:

Data sheets for plots WSW1A, WSW1B, WSW1C, WSW2, WSW3A, and WSW3B follow in the appendix. WSW used the fillable data sheets provided by Tucker Feyder, USACOE.

APPENDIX

WSW1A data sheet

WSW1B data sheet

WSW1C data sheet

WSW2 data sheet

WSW3A data sheet

WSW3B data sheet

Aerial map, page 1: Wetland Areas

Aerial map, page 2: Wetland Flagging

Aerial map, page 3: Wetland Plots

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (1A) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): low gradient tailings top Local relief (concave, convex, none): none Slope (%): 1%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87155 Long: -107.74398 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW 1A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Test pit dug in fill area (4 inches of dirt until hitting rocky fill)
Test pit dug after significant rain

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	50	Yes	FACW
2.			
3.			
4.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	

Herb Stratum (Plot size: 10' x 10')			
1. Juncus arcticus	20	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Asclepias incarnata	12	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:
The Dominance Test is >50% has shown that there is presence of hydrophytic vegetation.

SOIL

Sampling Point: WSW 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10 YR 3/2	25					Dry Loar	
1-2	10 YR 3/1	25					Dry Loar	
2-4	2.5 YR 6/8	50					Dry Loar	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ✔ Red Parent Material (TF2)
- ✔ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Rocky Fill Present below 4 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 2

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This area too dry and compacted to be a wetland.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (1B) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): terraced slope Local relief (concave, convex, none): concave Slope (%): 3-7%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87149 Long: -107.74400 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW 1B NWI classification: PSS1/EM1Dhg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Test pit dug after significant rain

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Juncus arcticus	20	Yes	FACW
2. Carex utriculata	15	Yes	OBL
3. Bryum argenteum	13	No	FAC
4. Epilobium ciliatum	10	No	FACW
5. Carex canescens	7	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Dominance Test is >50% has shown that there is presence of hydrophytic vegetation.

SOIL

Sampling Point: WSW 1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	Gley 2 2.5/5F	50					Dry Loar	Loamy Gleyed Matrix
2-4	Gley 1 3 / 10`	50					Dry Loar	Loamy Gleyed Matrix
2-4	2.5 YR 6/8	50					Dry Loar	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
Rocky Fill Present below 4 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 2

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 4

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water was present from Adit discharge during spring flow conditions.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (1C) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1C

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): terraced slope Local relief (concave, convex, none): concave Slope (%): 9%

Subregion (LRR): Southern Rocky Mountains Lat: 37.871453 Long: -107.74402 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW 1C NWI classification: PSS1/EM1Dhg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Test pit dug after significant rain

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	60	Yes	FACW
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Juncus arcticus	15	Yes	FACW
2. Carex utriculata	10	Yes	OBL
3. Epilobium ciliatum	7	No	FACW
4. Bryum argenteum	5	No	FAC
5. Picea pungens	3	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation has shown that there is presence of hydrophytic vegetation.

SOIL

Sampling Point: WSW 1C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	Gley 2 3/BG	33					Dry Loar	Loamy / clayed
2-4	Gley 2 2.5/5E	33					Dry Loar	Loamy / clayed
4-6	Gley 2 3/BG	33					Dry Loar	Loamy / clayed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
Rocky Fill Present below 4 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 6

Water Table Present? Yes ✔ No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The area is saturated year round and is a wetland.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (2) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 2

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): incised channel Local relief (concave, convex, none): incised Slope (%): 30%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8720087 Long: -107.742861 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW 2 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

This plot area is a steep incised ephemeral channel discharging through loose scree.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	50	Yes	FACW
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 10' x 10')			
1. Juncus arcticus	20	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Asclepias incarnata	12	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

For this section there is no significant vegetation to document and the area is too rocky for vegetation to grow.

SOIL

Sampling Point: WSW 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10 YR 3/2	25					Dry Loar	Rock
1-2	10 YR 3/1	25					Dry Loar	
2-4	2.5 YR 6/8	50					Dry Loar	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
The area was too rocky to test area. It was a steep incised channel within a scree slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): uncertain

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This plot area is a steep incised channel, passing over and eroding a road, then discharging over and through loose scree until the confluence of Mill Creek. There has not been sufficient soils or other substrate conducive for a riparian wetland to form. Occasional willows along the bank are not connected through capillary fringe to the channel discharge consistently.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (3A) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 3A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): steep riparian hillslope Local relief (concave, convex, none): steep slope Slope (%): 35%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87142 Long: -107.74288 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW (3A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

High alpine riparian zone

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	40	Yes	FACW
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' x 10')			
1. Carex utriculata	30	Yes	OBL
2. Asclepias incarnata	15	No	OBL
3. Veratrum californicum	7	No	FAC
4. Frasera speciosa	5	No	FAC
5. Pedicularis groenlandica	3	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation has shown that there is presence of hydrophytic vegetation.

SOIL

Sampling Point: WSW 3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 3/1	1000					Dry	Loamy
1-2	10 YR 3/1	25					Dry Loar	
2-4	2.5 YR 6/8	50					Dry Loar	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
Bed rock after 4 inch of test pit

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): 2

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The steep slope within this plot, is on the north side of Mill Creek, and is too is rocky and too incised to develop a riparian wetland terrace.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Shelbyville Lode Site WSW (3B) City/County: San Juan Sampling Date: 06/16/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 3B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S28 T42N R8E NMPM

Landform (hillslope, terrace, etc.): steep riparian slope Local relief (concave, convex, none): waterfall Slope (%): 60%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8715155 Long: -107.744208 Datum: _____

Soil Map Unit Name: Shelbyville Lode Site WSW (3B) NWI classification: PSS1/EM1Dhg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

It is WSW opinion that it is a wetland on both sides of waterfall.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	30	Yes	FACW
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 10' x 10')			
1. Carex utriculata	30	Yes	OBL
2. Juncus arcticus	25	Yes	FACW
3. Bryum argenteum	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation has shown that there is presence of hydrophytic vegetation. This wetland is unique as it was delineated by visual information only. The wetland area is on both sides of a waterfall, created by discharge flow from the Adit, emerging from the waste pile above Mill Creek. This area too dangerous, too wet and steep, to belay and perform test pit or to survey. It is WSW opinion that it is a wetland on both sides of waterfall.

SOIL

Sampling Point: WSW 3B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10 YR 3/2	25					Dry Loar	
1-2	10 YR 3/1	25					Dry Loar	
2-4	2.5 YR 6/8	50					Dry Loar	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
This wetland is unique as it was delineated by visual information only. The wetland area is on both sides of a waterfall, created by discharge flow from the Adit, emerging from the waste pile above Mill Creek. This area too dangerous, too wet and steep, to belay and perform test pit or to survey. It is WSW opinion that it is a wetland on both sides of waterfall.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ✔ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): na

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Saturation visible on Aerial Imagery and visually from a safe monitoring location to east.

Remarks:
This wetland is unique as it was delineated by visual information only. The wetland area inaccessible as it is on both sides of a waterfall, created by discharge flow from the Adit, emerging from the waste pile above Mill Creek. This area too dangerous, too wet and steep, to belay and perform test pit or to survey. It is WSW opinion that it is a wetland on both sides of waterfall. The total area will have to be estimated.

Shelbyville and Mountain Chief Lodes Wetland Delineation



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

Owner: Bonanza Boy, LLC

WESTERN STREAM WORKS
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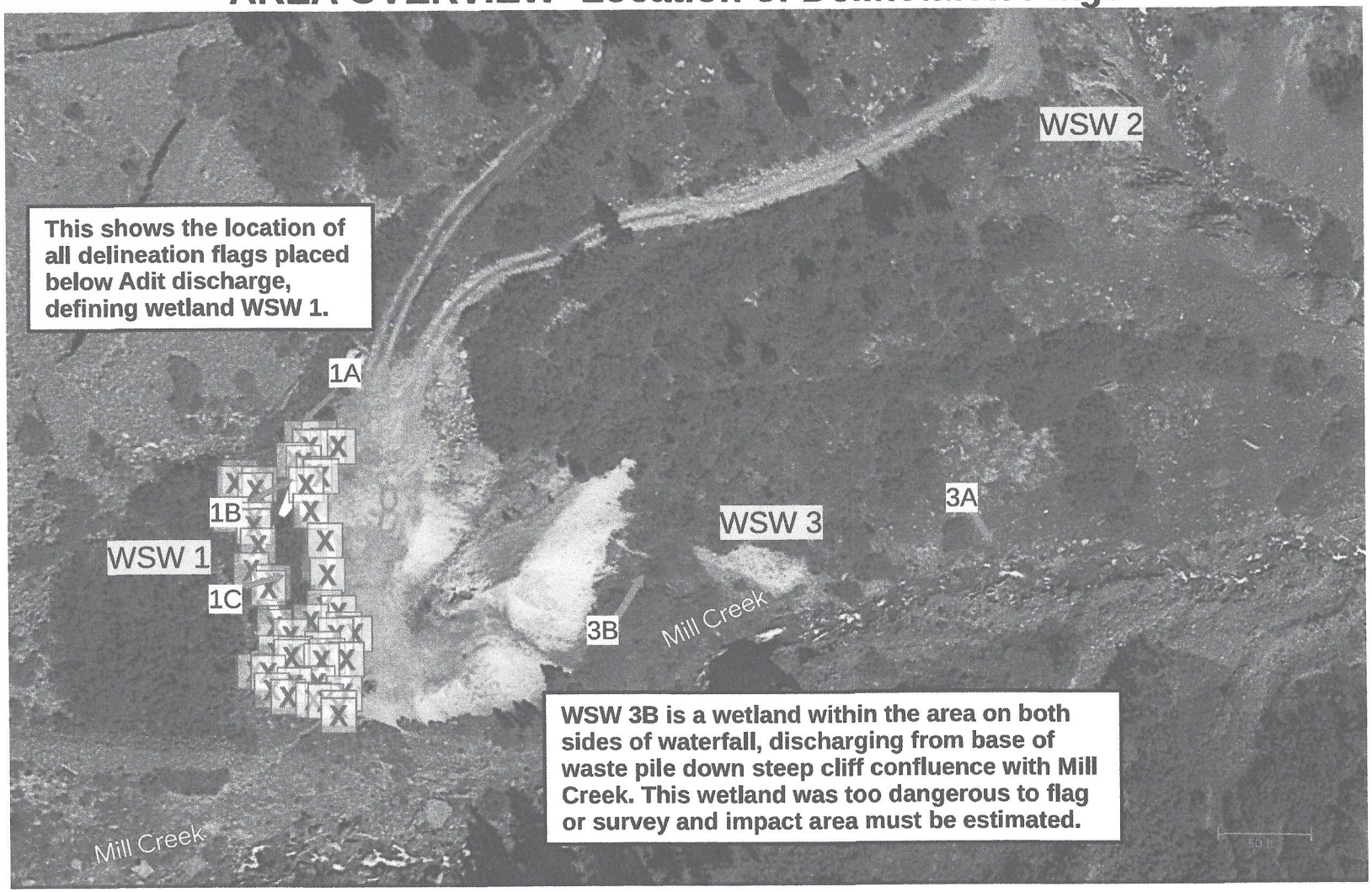
July 9, 2023

Western Stream Works
PO Box 301 Ridgway, CO 81432
(970) 708-2139

Shelbyville and Mountain Chief Lodes Wetland Delineation

AREA OVERVIEW- Location of Delineation Flags



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

Owner: Bonanza Boy, LLC

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Shelbyville and Mountain Chief Lodes Wetland Delineation

AREA OVERVIEW- Location of Wetland Plots



S28 T42N R8E NMPM

Area of Shelbyville and Mountain Chief Lodes

Owner: Bonanza Boy, LLC

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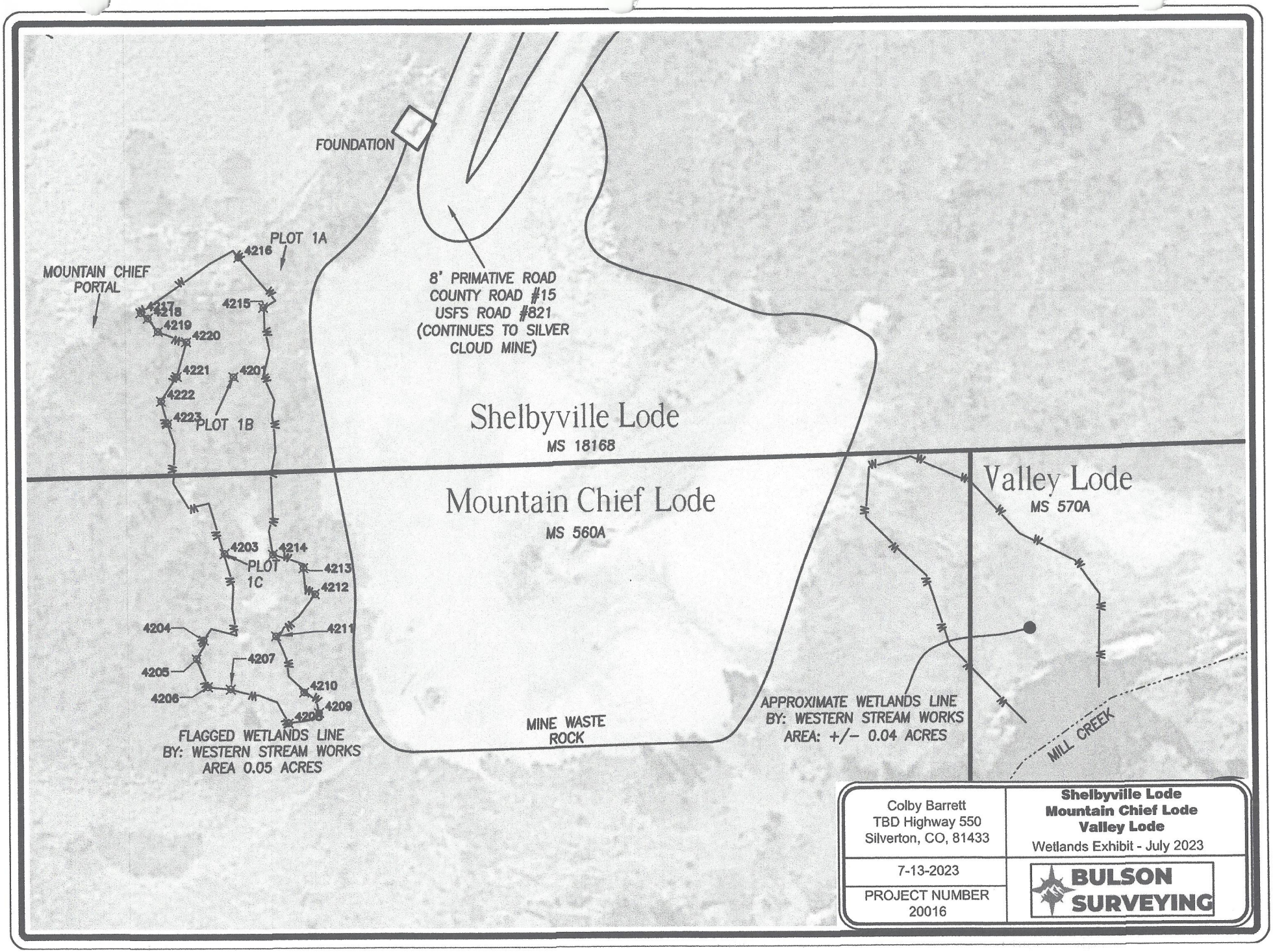

Colby Barrett TBD Highway 550 Silverton, CO, 81433	**Shelbyville Lode** **Mountain Chief Lode** **Valley Lode** Wetlands Exhibit - July 2023
7-13-2023	BULSON SURVEYING
PROJECT NUMBER 20016	

Wetland Delineation

Bonanza Boy Mill Site

Silver Cloud, Colorado



By: Western Stream Works

WESTERN STREAM WORKS
970.708.2139
RIDGWAY, COLORADO
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This Wetland Delineation has been conducted in accordance with the 1987 "Corps of Engineers Wetlands Delineation Manual".

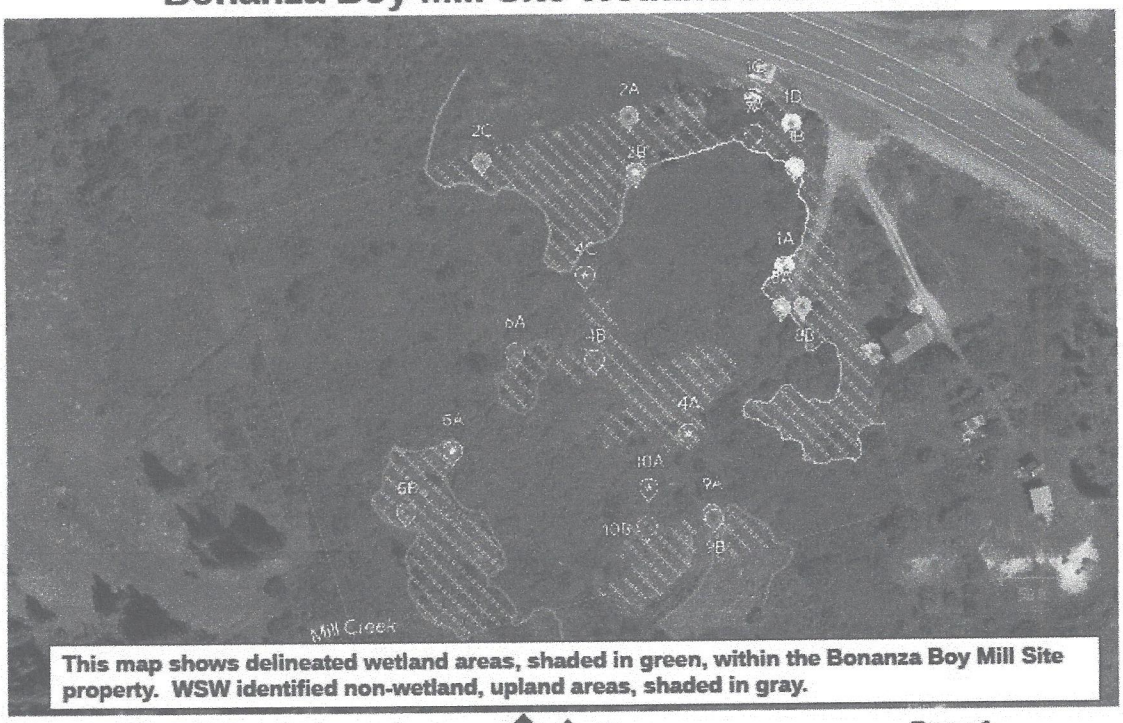
Wetland Description

Western Stream Works delineated Bonanza Boy Mill Site property between June 14 and July 9, 2023. Spring snowmelt runoff was active from an above average snow year. Glacial topography is characterized by sway and swale characteristics. Bonanza Boy is a combination of low lying, surface water fed wetland terraces, man-made historic fill areas, and glacial till uplands.

For this delineation, due to the glacial topography, WSW plots are primarily labeled where wetlands do not exist, except for WSW 7 which is a small wetland created by the discharge from a CDOT culvert within the larger WSW 1 and WSW 2 non wetland areas. (See aerial map 1 below and in Appendix)

Aerial Map 1: Overview of Wetland Delineation for Bonanza Boy Mill Site.

Bonanza Boy Mill Site Wetland Delineation



This map shows delineated wetland areas, shaded in green, within the Bonanza Boy Mill Site property. WSW identified non-wetland, upland areas, shaded in gray.

S27 T42N R8E NMPM
Bonanza Boy Mill Site
Owner: Bonanza Boy, LLC

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WSW 1

Plot WSW 1 is located at the access road: west of Artists Cabin is an area where the compacted fill of the access road transitions into a wetland area to west. (See aerial map 2 below)

WSW 1 moves north along access road before transitioning west



WSW 2

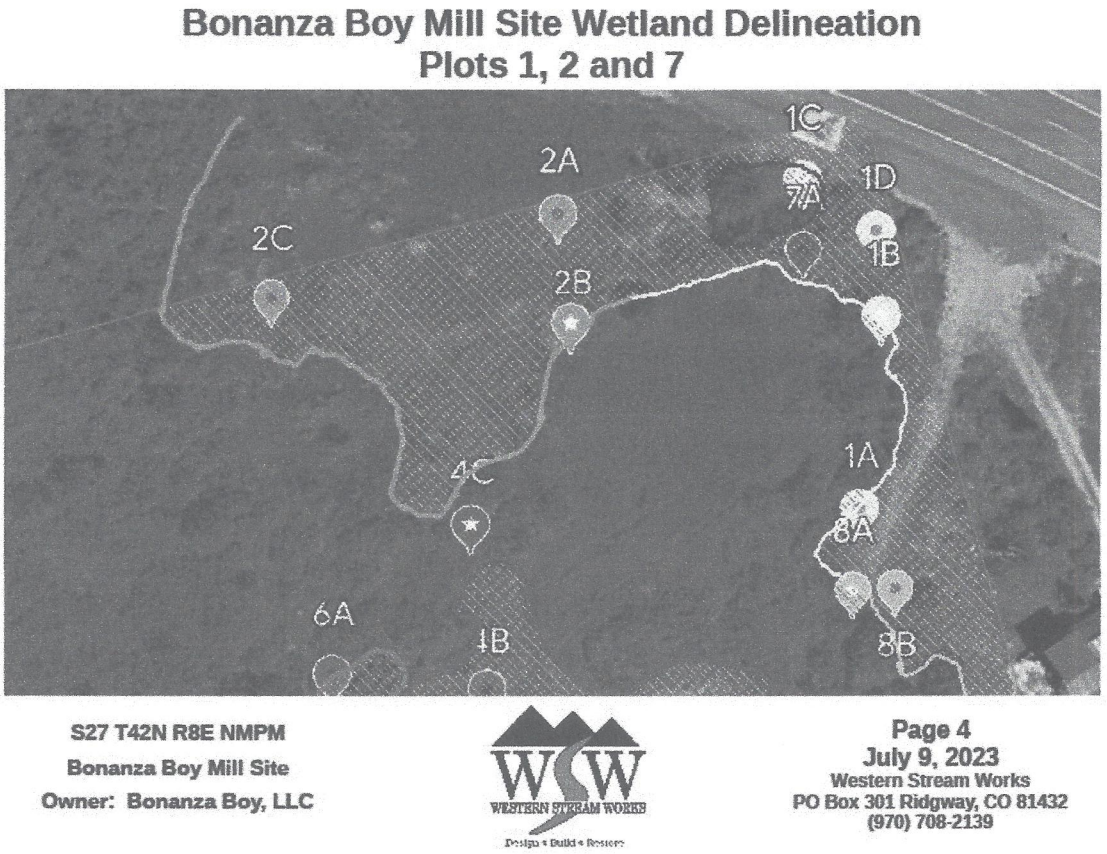
Plot WSW 2 is dominated by an upland terrace, located at the northernmost part of the property near Hwy 550. The eastern most section of WSW 2 is a historic fill area, transitioning further west to a large upland swale mid property. WSW 2 is a combination of natural upland swale and man induced fill, with some rock in situ.

There is a CDOT culvert that drains into WSW 2 from the area north of the other side of Highway 550. This runoff discharge feeds an E channel through the eastern part of the property into Plot WSW 1. As it courses through WSW 2, there are wetlands on either side, which is an additional plot, WSW 7. WSW 7 is a wetland area surrounded by WSW 2, which is not a wetland. (See aerial map 2 below)

WSW 2 in upper half of photo characterized by upland swale



Aerial Map 2: Plots 1, 2 and 7



WSW 3

Plot WSW 3 was determined to be outside of Bonanza Boy Mill Site property. The wetland area was delineated before the property corners were surveyed. This area changes dramatically from the dry areas within the Bonanza Boy property, which is further east. WSW 3 contains perched water tables and groundwater fed terraces, conducive of a potential wetland fen. Information from CDOT Roadside Fen Survey concur that an area of WSW 3 is a fen.

An important note about Wetland Fens:
Wetland fens are known to exist near the Bonanza Boy Mill Site property. WSW crew searched for saturated, perched, groundwater supported areas, remaining in situ for eons, across the area of the Bonanza Boy Mill Site property. While delineating WSW 3, WSW did identify a likely fen. With assistance from Gay Austin, WSW revisited the central and eastern areas of the property and did not definitively locate a fen. Upon further investigation, WSW reviewed the Colorado Wetland Inventory and the CDOT Roadside Fen Survey and noted a fen to the west of the Bonanza Boy Mill Site Property, in the San Juan National Forest, which extends into the northwest corner of the Bonanza Boy property (see photo below and aerial map in the appendix). The Colorado Wetland Inventory also shows a dense area of fens south of Mill Creek, which runs south of the Bonanza Boy Mill Site property.

If any additional information is valuable to further consider fen delineation in the NW corner of property, a surveyed property corner is required. It is prudent to include in this wetland delineation a few sources regarding Wetland Fens (see Citation List), so that during any proposed activity to develop this property, these documents may be referred to.

Once the property corners were available to WSW, we ceased investigation of WSW3, and no further information or photos of WSW 3 are provided in this report, as it is outside the property boundaries of Bonanza Boy Mill Site.

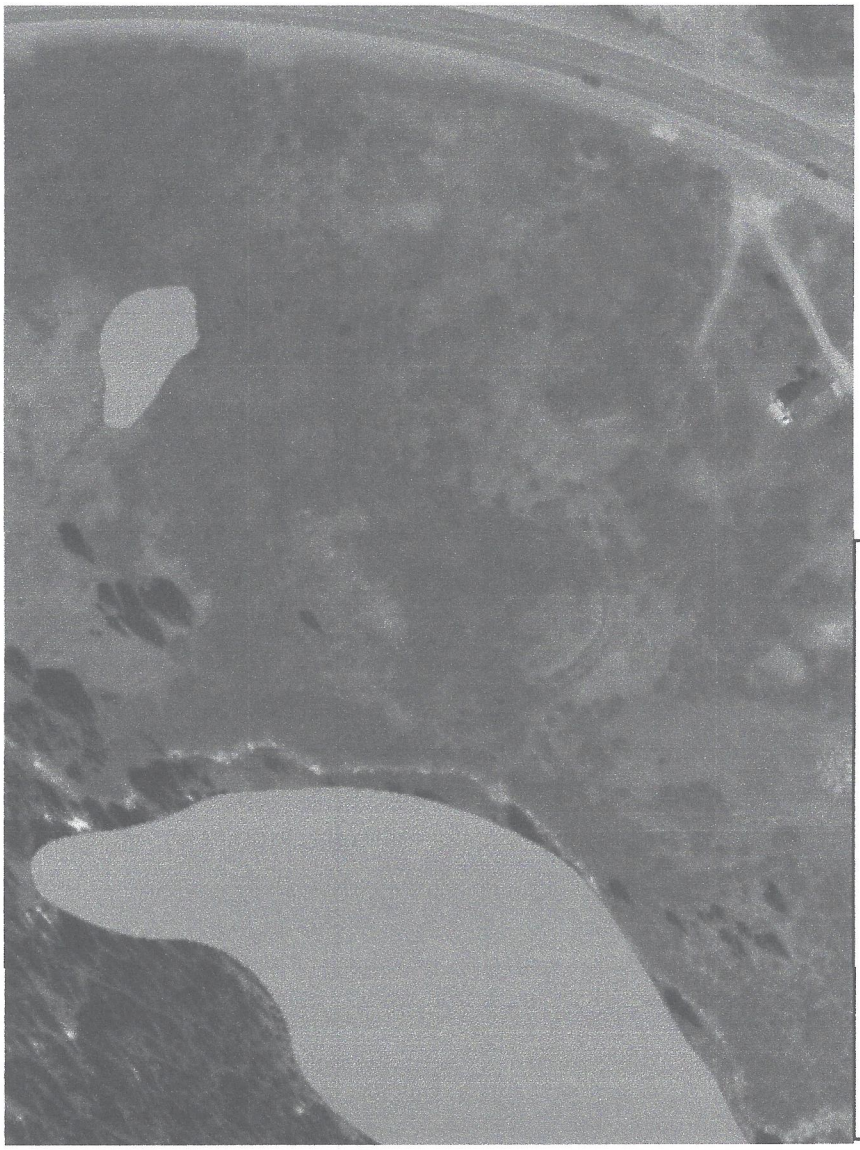


Photo from "wetland mapper" of the Colorado Wetland Inventory, at the Colorado Wetland Information Center website. Small fen area is west of property, extending into northwest corner of property. Large fens exist south of the property, extending south of Mill Creek. These fens were identified by CDOT Roadside Fen Survey.

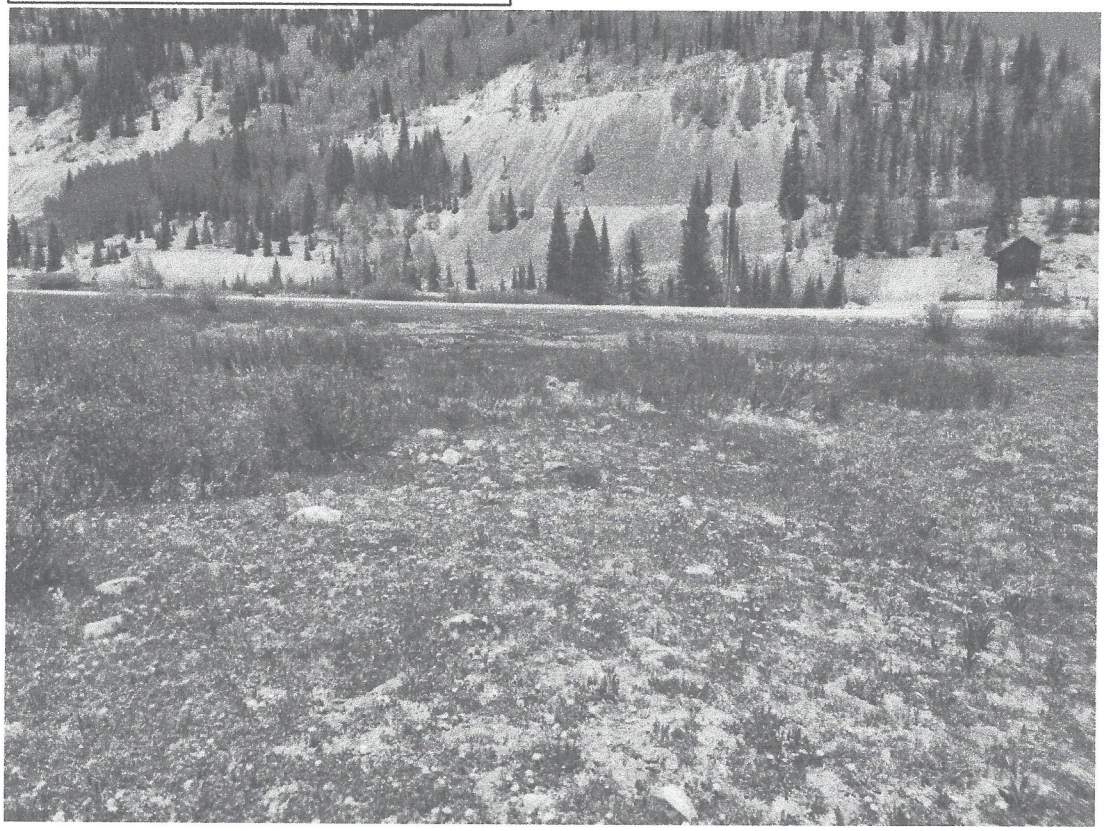
WSW 4

Plot WSW 4 is an upland area near the middle of Bonanza Boy Mill Site property. Glacial topography is characterized by sway and swale characteristics. The high ground of WSW 4 is glacial till uplands. (See aerial map 3 below)

In the photograph below, three separate gradient benches can be seen:

-WSW 4 is in the foreground, probable glacial till deposition both higher and dry.
-WSW 2 is a lower swale meadow to the north, at the top of the photo.
-Between WSW 4 and WSW 2, surface flows into an ephemeral channel surrounded by shrub wetland, eastward into the low-lying wetland meadow to the right of photo.

WSW 4 is the lower half of this photo



Glacial Kame terraces of deposition surround the property, and glacial till is predominant within it. On the west side of plot WSW 4 there is a man induced wetland area, from a well flowing laterally west down from the highest point seen in the photograph below. A potential drumlin can be seen to the west.

Well on west side of plot WSW 4

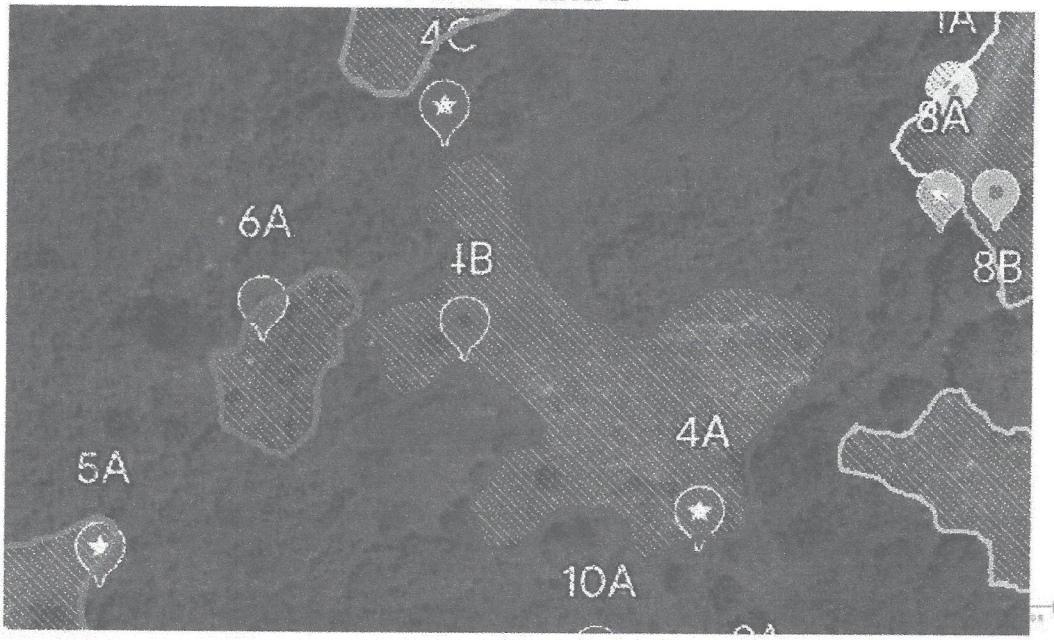


WSW 4 looking east towards Artist Cabin



Aerial Map 3: Plots 4 and 6

Bonanza Boy Mill Site Wetland Delineation
Plots 4 and 6



S27 T42N R8E NMPM
Bonanza Boy Mill Site
Owner: Bonanza Boy, LLC

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WSW 5

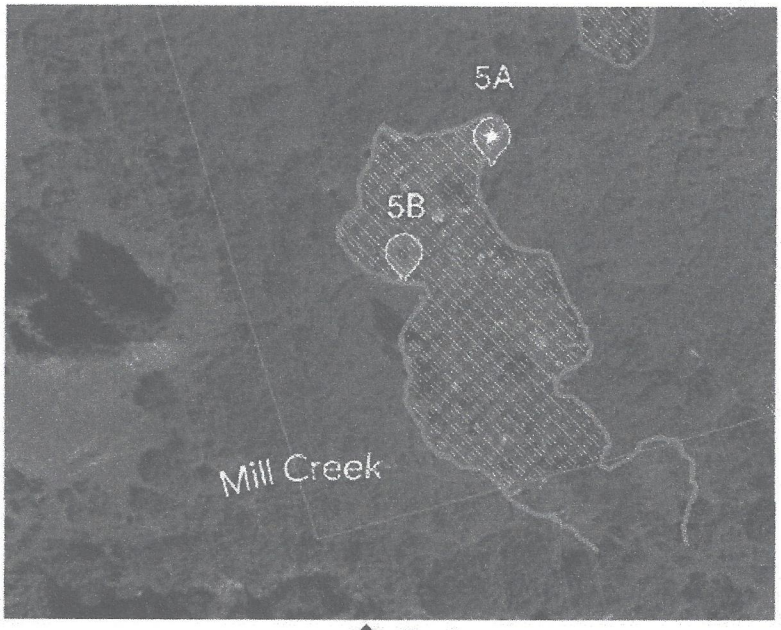
Plot WSW 5 is characterized by a perched terrace of glacial deposition of large boulders. The wetland delineation flagging surrounds this obviously high, dry, naturally filled area. WSW 5C is by the old road to Mill Creek, carved into side of deposition pile: post surveying it was found to exist outside the property boundary and no data sheet is included in this report. (See aerial map 4 below)

WSW 5 glacial deposition by historic road to Mill Creek



Aerial Map 4: Plot 5

Bonanza Boy Mill Site Wetland Delineation
Plot 5



S27 T42N R8E NMPM
Bonanza Boy Mill Site
Owner: Bonanza Boy, LLC

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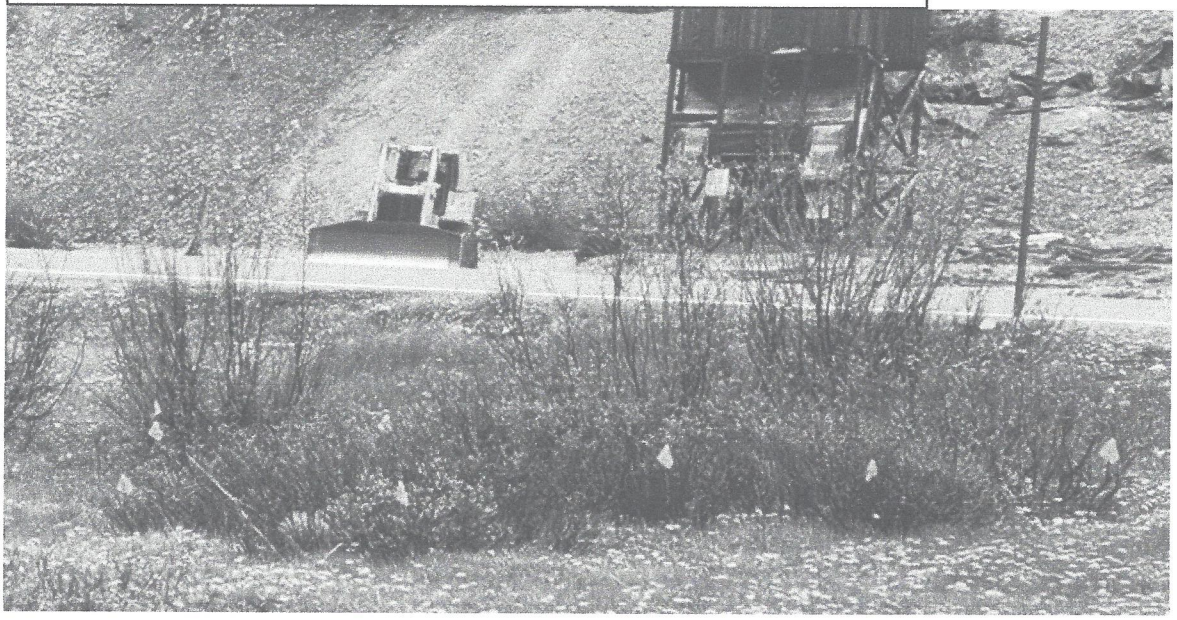
WSW 6

Plot WSW 6 is a very small upland hill between larger plots WSW 4 and WSW 5. It is simply a dry area surrounded by lower, wetter conditions. (See aerial map 3 above)

WSW 7

Plot WSW 7 was a delineation revisit into the WSW 1 and WSW 2 plot areas to consider access from Highway 550. It is comprised of a wetland area following the CDOT culvert discharge. This culvert drains spring runoff originating from the area to the north of the highway. This surface water discharge connects to the wetlands on the west side of plot WSW 1. (See aerial map 2 above)

WSW 7 is a small area of wetlands surrounded by much larger plot WSW 2



WSW 8

Plot WSW 8 is a continuation of plot WSW 1 to south and east towards the Artist's cabin. (See aerial map 5 below). The area to the west of the WSW 8 flag line is comprised of wetland continuing over the historic two track road. WSW 8 defines a well saturated wetland area of willows, rush and sedge, along a well saturated drainage from the north. It is saturated from this same eastern drainage, originating in the CDOT culvert and continually fed from surface water inundation from further west, that provides hydrology to wetlands within plots WSW 7 and WSW 1.

WSW 8: East side of Bonanza Boy Mill Site property near Artists Cabin



The surface flow drainage within WSW 8 widens at the historic road and follows old ruts from vehicles. This saturated channel originates in the CDOT culvert to north in plot WSW 7 and is fed from surface flow from the west.

Historic road on western side of plot WSW 8



Aerial Map 5: Plots 1 and 8

Bonanza Boy Mill Site Wetland Delineation
Plots 1 and 8



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Bonanza Boy Mill Site
Owner: Bonanza Boy, LLC

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WSW 9

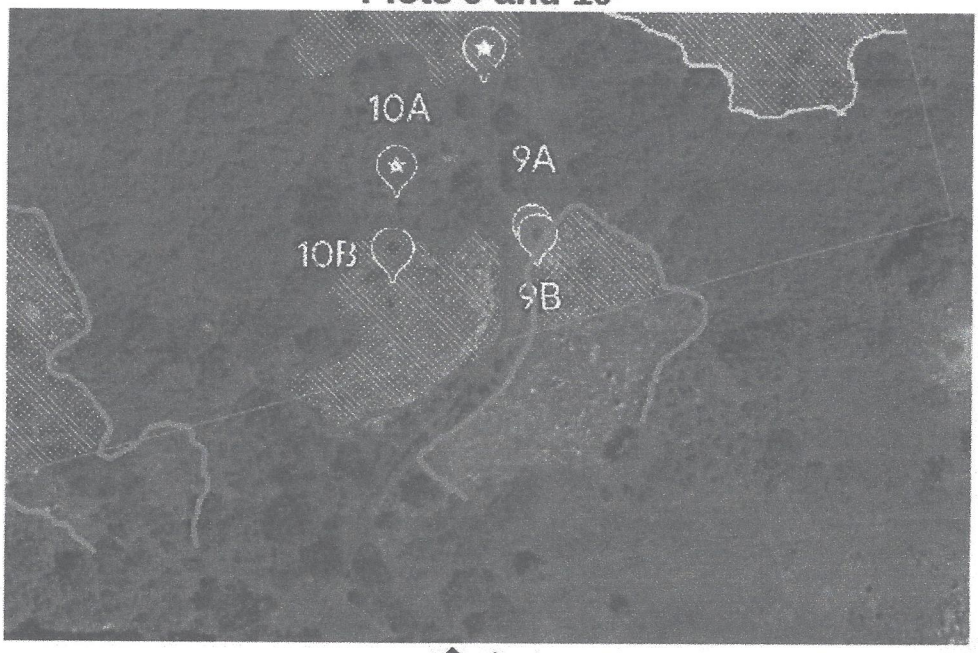
Plot WSW 9 is characterized by a dry upland area of glacial deposition surrounded by lower gradient saturated wetlands. It is somewhat of a deposition hummack ridge with a gradient that slopes down into a wetland. It is a dry area with the historic two track road to the northwest of plot WSW 9, from which it heads south past WSW 8. (See aerial map 6 below)

The middle of photo below shows the higher, dry ridge within WSW 9



Aerial Map 6: Plots 9 and 10

Bonanza Boy Mill Site Wetland Delineation
Plots 9 and 10



S27 T42N R8E NMPM
Bonanza Boy Mill Site
Owner: Bonanza Boy, LLC

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WSW 10

Plot WSW 10 is a continuation of WSW 9 further west, on the other side of the historic two track road. There is a man induced wetland area between WSW 9 and WSW 10 along historic road from water draining through the old ruts, for an extended time, and creating a narrow wetland between the plots. WSW 10 is characterized by an upland glacial fill area above the historic road. (See aerial map 6 above)

WSW 10: Large boulder within glacial deposition upland



Wetland Boundaries

WSW wetland boundaries for Bonanza Boy were determined by significant fieldwork, determining access and areas where wetland plots would make logical sense, to complete a given area within the varying topography and geomorphology. Additional plots were added once property boundaries were identified. The identification of natural glacial deposition and man-made historic fill was continual and helped form individual plot areas. Upland terraces within a surrounding wetland area became clearly identifiable.

WSW individual plots were selected to compare and contrast jurisdictional to non-jurisdictional areas within a given study plot. The plots were selected from access and similar geomorphological conditions. The plots were then analyzed, on an individual basis, by a combination of hydrology, soil conditions and vegetation.

Total Project Acreage

Within the ACOE Permit process, the total acreage of this project will be submitted by Bulson Surveying. This effort will define total project acreage and total area of impact from proposed development. Development considered within proposed future USACOE submittals should overlay the surveyed flags within this WSW delineation boundary. This total acreage, of destroyed or impacted jurisdictional wetland areas, will have to be included in a mitigation ratio acceptable to the ACOE.

Existing Field Conditions

The delineation was completed in spring conditions 2023, as soon as snow melted sufficiently to allow access to individual sites. High snow ablation and sheetflow from spring runoff created saturated conditions during field delineations. Saturated spring conditions further helped clarify deposition areas that are clearly not wetlands within Bonanza Boy Mill Site.

Hydrology

Wetlands exist within Bonanza Boy Mill Site property because of surface water discharge, draining from west to east from a saturated area of significant perched hydrologic provinces to the west. The many surface drainages, from west of the property, flow throughout and between areas of deposition within Bonanza Boy property. The CDOT culvert at Highway 550 drains the area north of the highway and discharges flow into the eastern side of the Bonanza Boy property also.

Apart from the area of WSW 3, we did not identify hydrologic conditions required by fens. As we delineated the other areas of Bonanza Boy, we did not find certain evidence of groundwater-fed, organic layers or peat-like accumulating areas.

In any future development, the existing surface water drainages should not be negatively impacted, or it may dewater the existing saturated conditions of low-lying wetlands.

Site Location Map

Section Township and Range S27 T42N R8W NMPM



Directions To The Site

Drive approximately 7.4 miles north from Silverton, Colorado on Highway 550, the Million Dollar Highway. It is approximately a 12-minute drive from Silverton. After a long, straight section of highway, as the highway veers west, look for a cabin on left side (south) with a good access road.

Contact Information for the Applicant

Bonanza Boy, LLC is the owner of the property.

PO Box 992, Montrose, CO 81402

Colby Barrett (303) 909-6083

Plant Communities and Habitat Types

Wetlands are areas that are inundated or saturated by surface or ground water at an annual frequency and of sufficient duration to provide sufficient hydrology, hydrophytic vegetation adapted for life in saturated soil conditions and soils created in anerobic conditions. Within WSW 1-WSW 10, the wetland plant communities are all within saturated areas, formed by surface water discharge from significant and continual inflow induced from the north and continually fed from further west. This area is dominated by salix monticola, with more saturated areas near the channel supporting carex, juncus and other hydrophytic vegetation. The conditions within this area are most closely described as a shrub swamp type of wetland. Shrub swamps are similar to forested swamps except that shrubby vegetation such as salix predominates. Forested and shrub swamps are often found adjacent to one another. The soil is often waterlogged for much of the year and covered at times by as much as a few feet of water because this type of swamp is found along slow-moving streams and in floodplains. Shrub swamps are often transitional between wet meadows and fens.

Soil Descriptions

Shrub swamps typically occur on organic soils, such as muck and shallow peat soils.

C. Trettin, in Encyclopedia of Ecology, 2008:

"Swamp soils cover the full range of texture classes and degrees of organic matter accumulation (**Figure 3**). The wet mineral soils are characteristic of riverine and depressional settings. The histic mineral soils have a moderately thick accumulation of surface organic matter (<40 cm) reflecting prolonged periods of saturation and little scouring action if located in a floodplain, hence they may be found in any of the four hydrologic settings. The histosols or peat soils have a thick layer (>40 cm) of organic matter accumulation, representing the long periods of saturation on an annual basis. These soils typically occur in depressional settings and are not common in floodplains due to the periodic scouring that occurs during flood events.

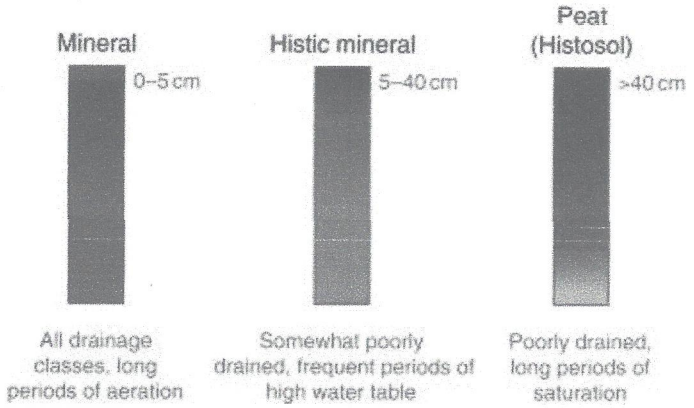


Figure 3"

Interstate Commerce Connection

There are no observed or documented examples of an interstate or foreign commerce connection. This is a relatively flat area by historic Chattanooga to the south. There is the northern area of property that comes close to Highway 550, the Million Dollar Highway.

Citations

https://csurams.maps.arcgis.com/apps/webappviewer/index.html?id=a8e43760cb934a5084e89e46922580cc

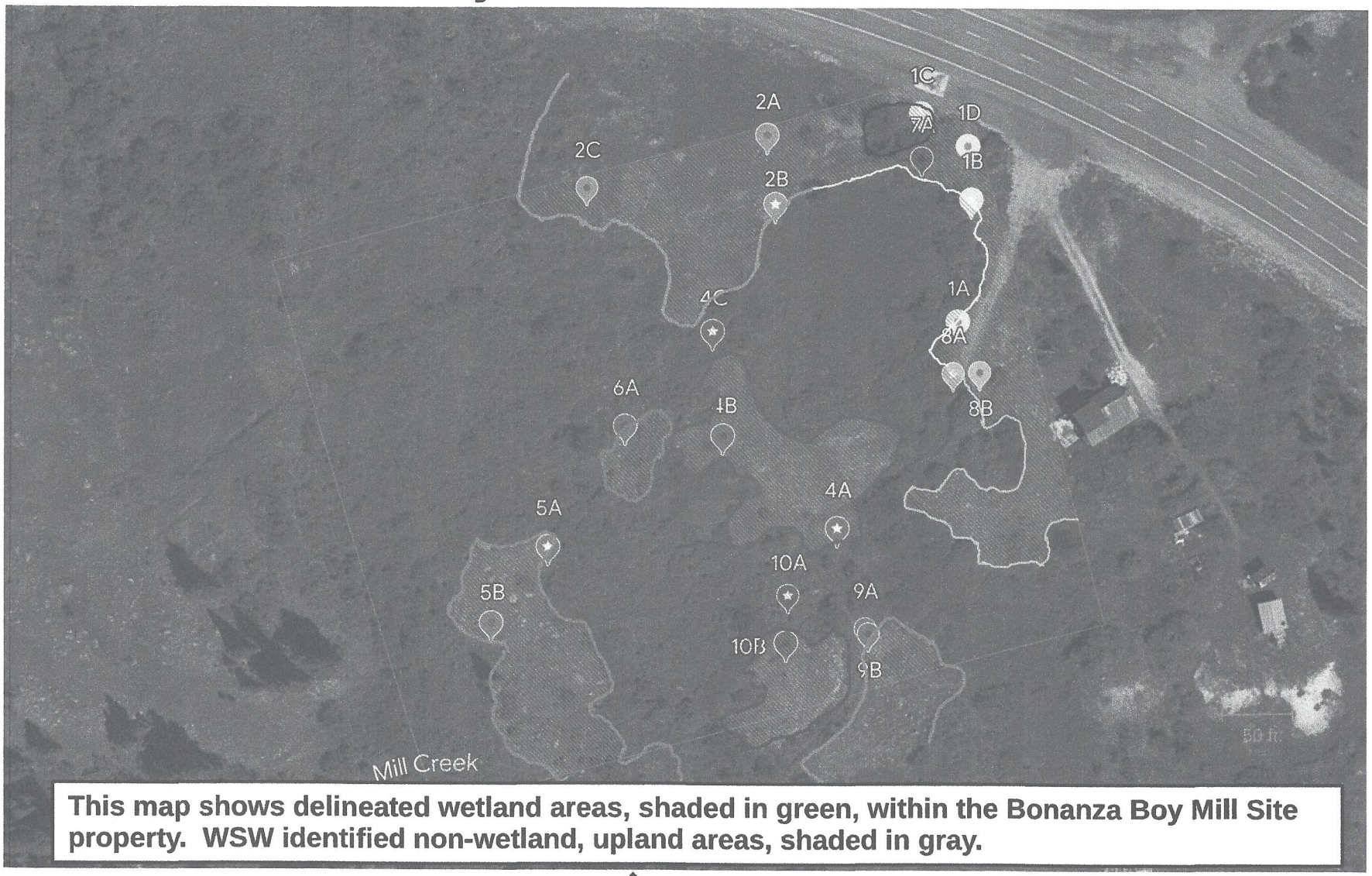
Colorado Department of Transportation Roadside Fen Inventory pdf, figure 10 on page 19, located at the link: https://cnhp.colostate.edu/cwic/wetlandtypes/fen-mapping/

Chimner, R.A., Lemly, J. M., Cooper, D. J. (2010). Mountain Fen Distribution, Types and Restoration Priorities, San Juan Mountains, Colorado, USA. *Wetlands, 30,* 763-771.

Mountain Studies Institute. (2016). *Wetlands of the San Juan Mountain Region*. https://www.mountainstudies.org/waterandsnowwork/wetlandssanjuan

Delineation Maps

Bonanza Boy Mill Site Wetland Delineation



This map shows delineated wetland areas, shaded in green, within the Bonanza Boy Mill Site property. WSW identified non-wetland, upland areas, shaded in gray.

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Bonanza Boy Mill Site

Owner: Bonanza Boy, LLC

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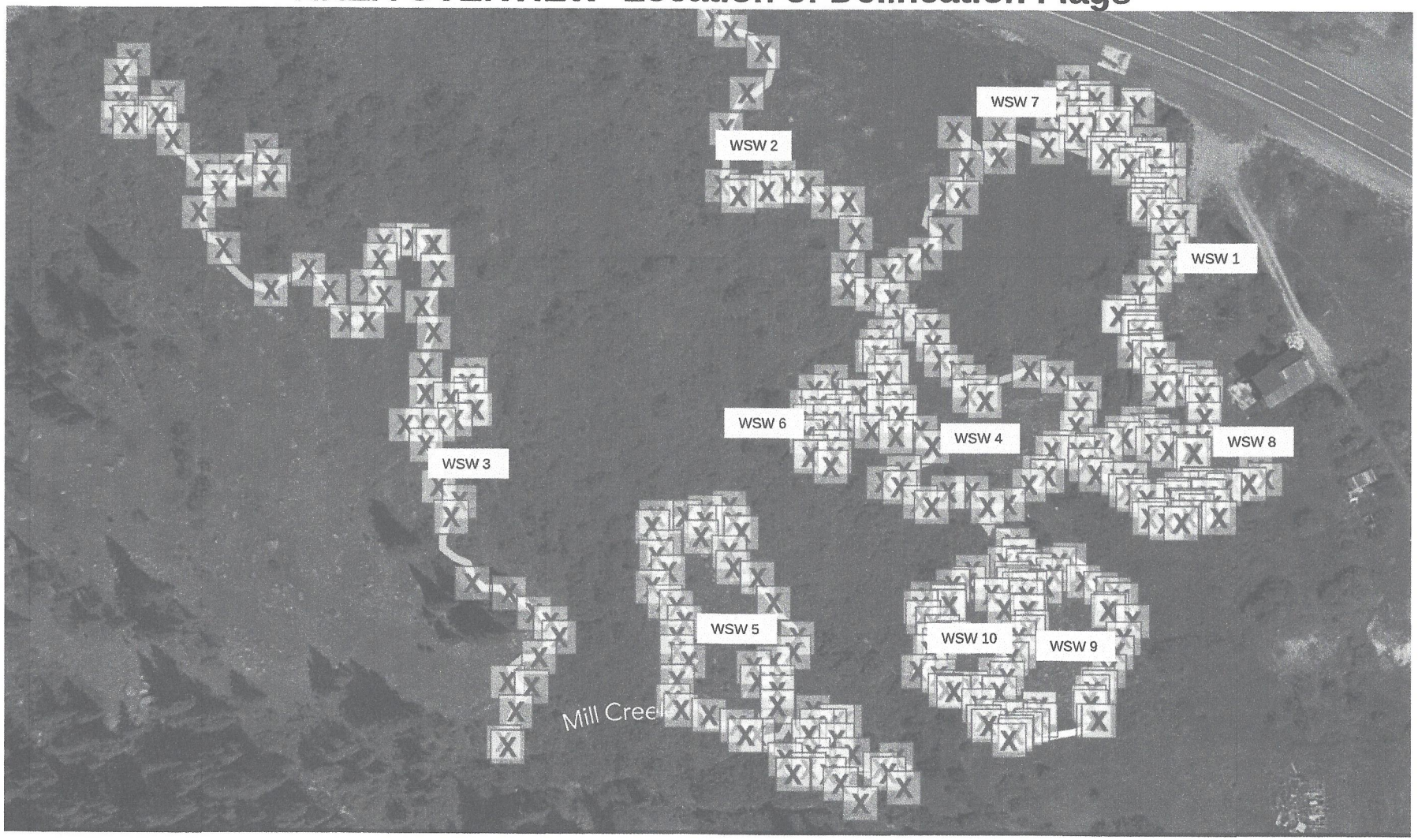
Bonanza Boy Mill Site Wetland Delineation

AREA OVERVIEW- Location of Delineation Flags



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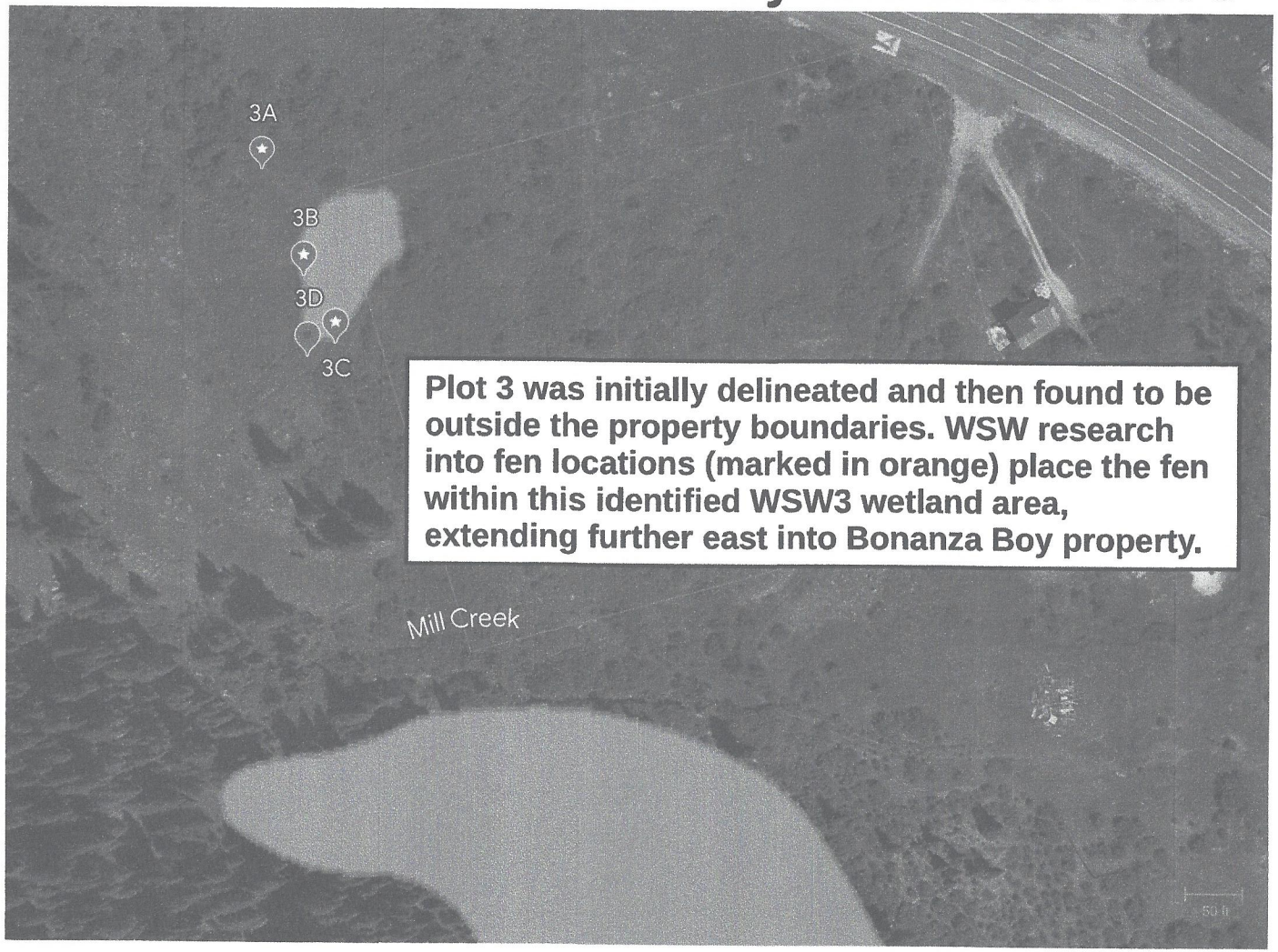
Bonanza Boy Mill Site Wetland Delineation
CDOT Roadside Fen Survey and WSW Plot 3



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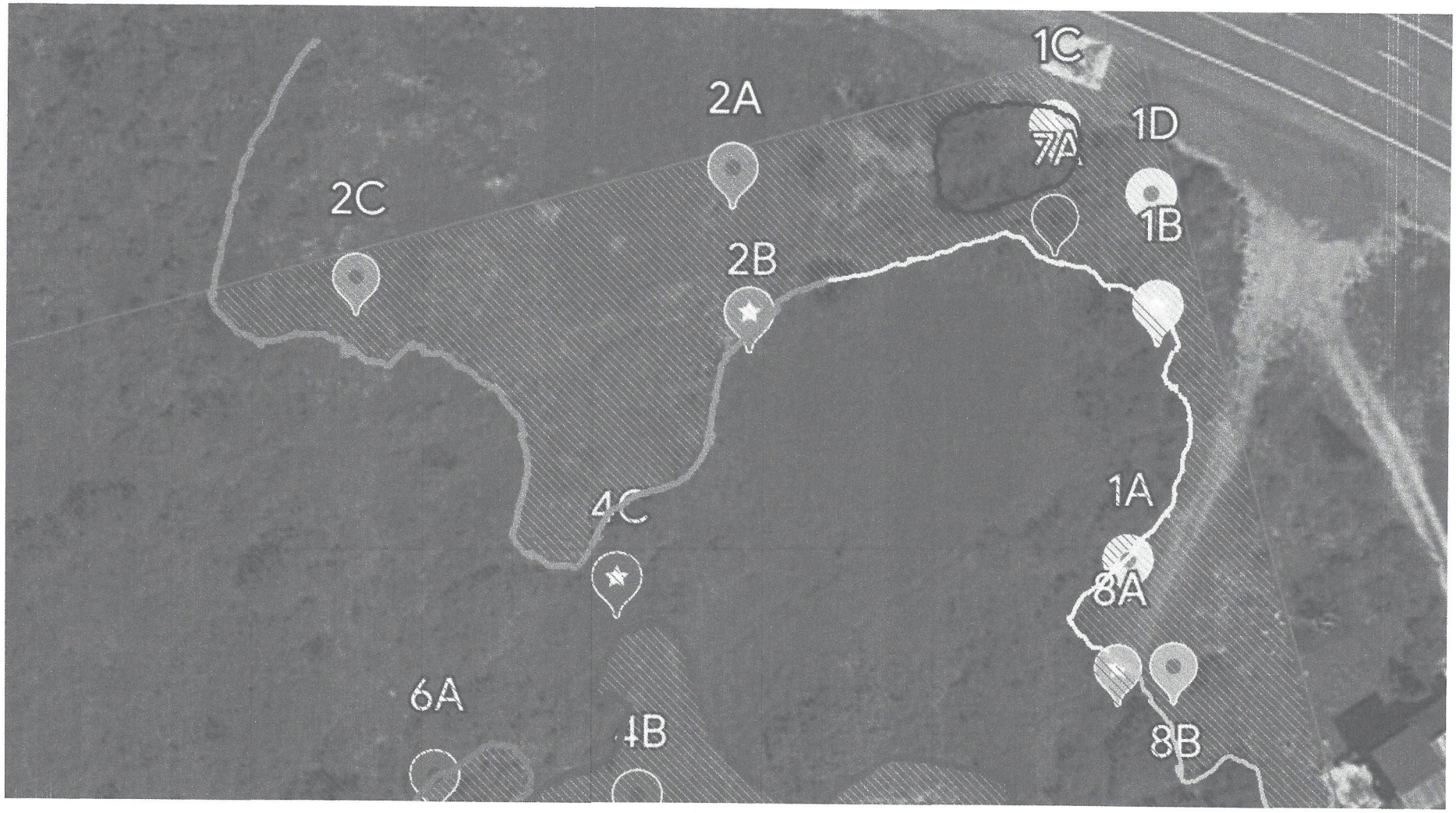
Bonanza Boy Mill Site Wetland Delineation
Plots 1, 2 and 7



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Bonanza Boy Mill Site

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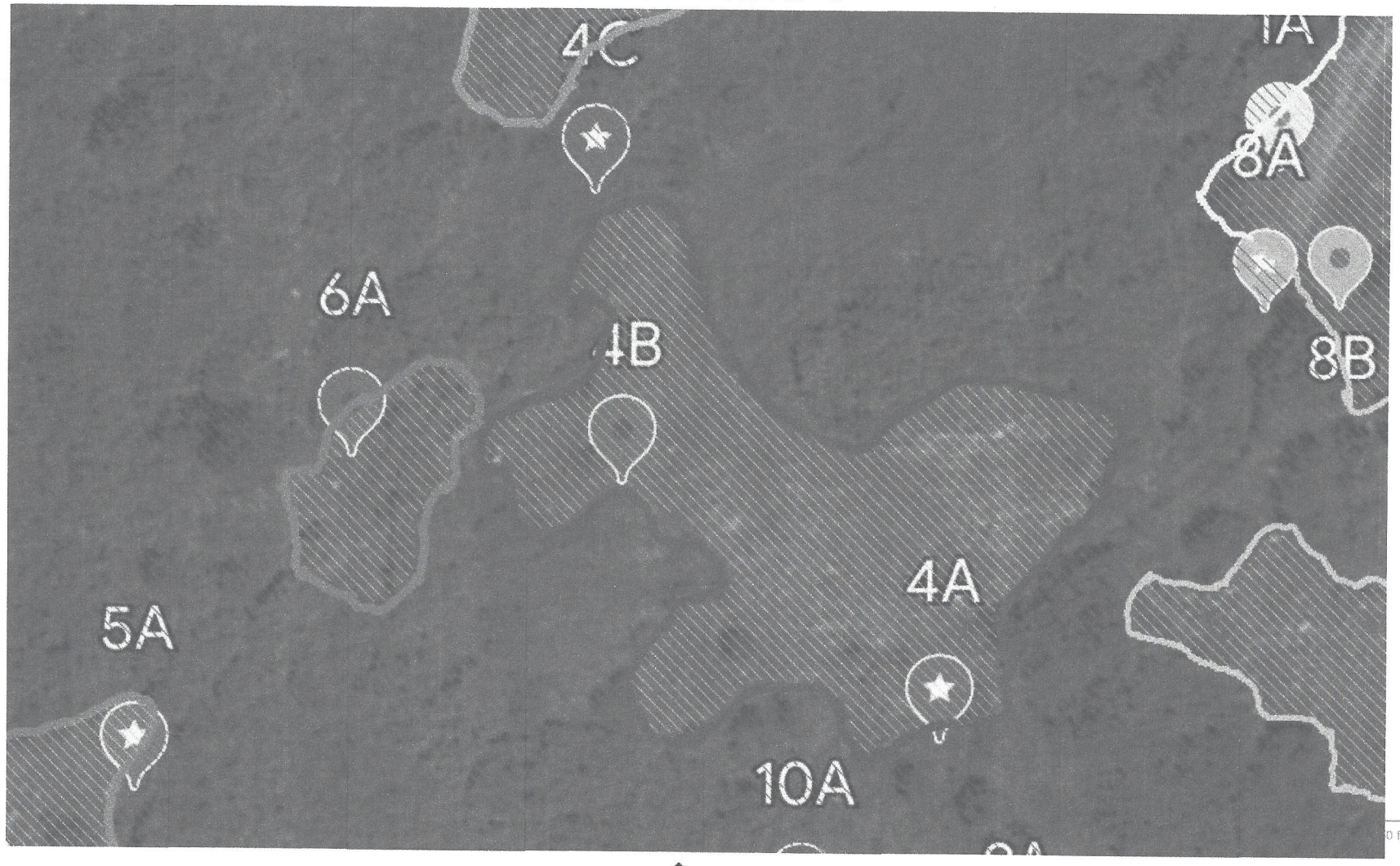
Bonanza Boy Mill Site Wetland Delineation
Plots 4 and 6



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Bonanza Boy Mill Site

Owner: Bonanza Boy, LLC

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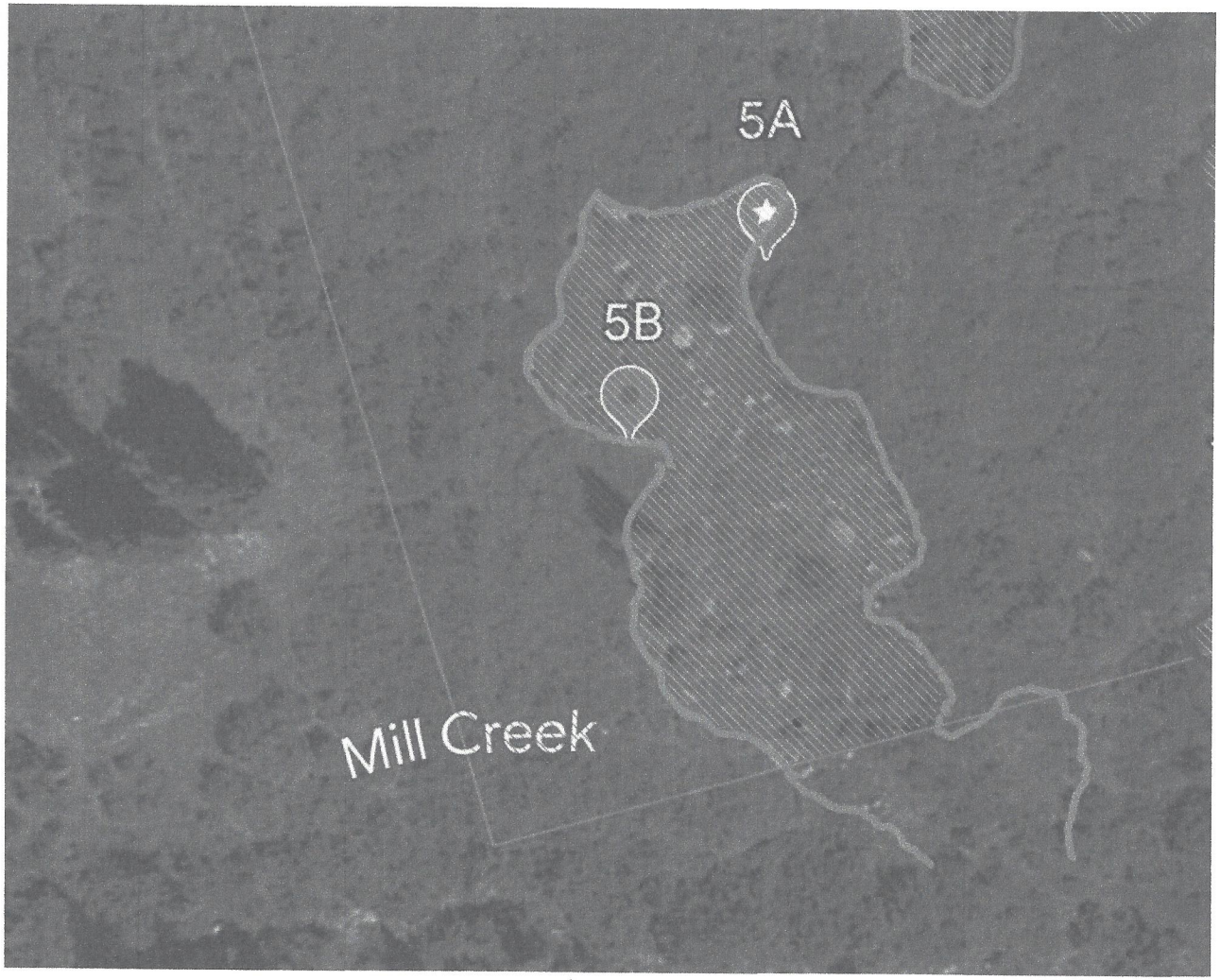
Bonanza Boy Mill Site Wetland Delineation
Plot 5



S27 T42N R8E NMPM

Bonanza Boy Mill Site

Owner: Bonanza Boy, LLC

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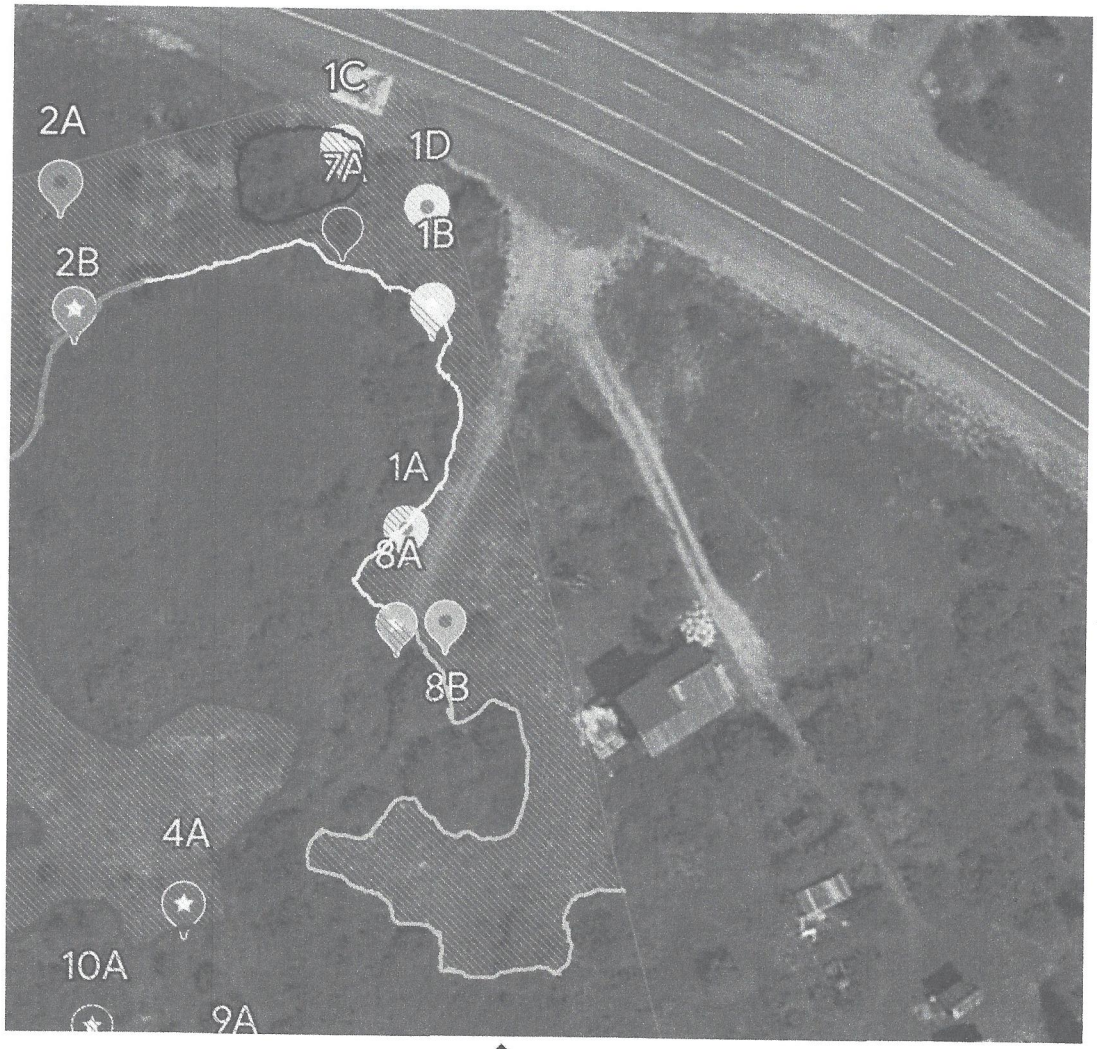
Bonanza Boy Mill Site Wetland Delineation
Plots 1 and 8



S27 T42N R8E NMPM

Bonanza Boy Mill Site

Owner: Bonanza Boy, LLC

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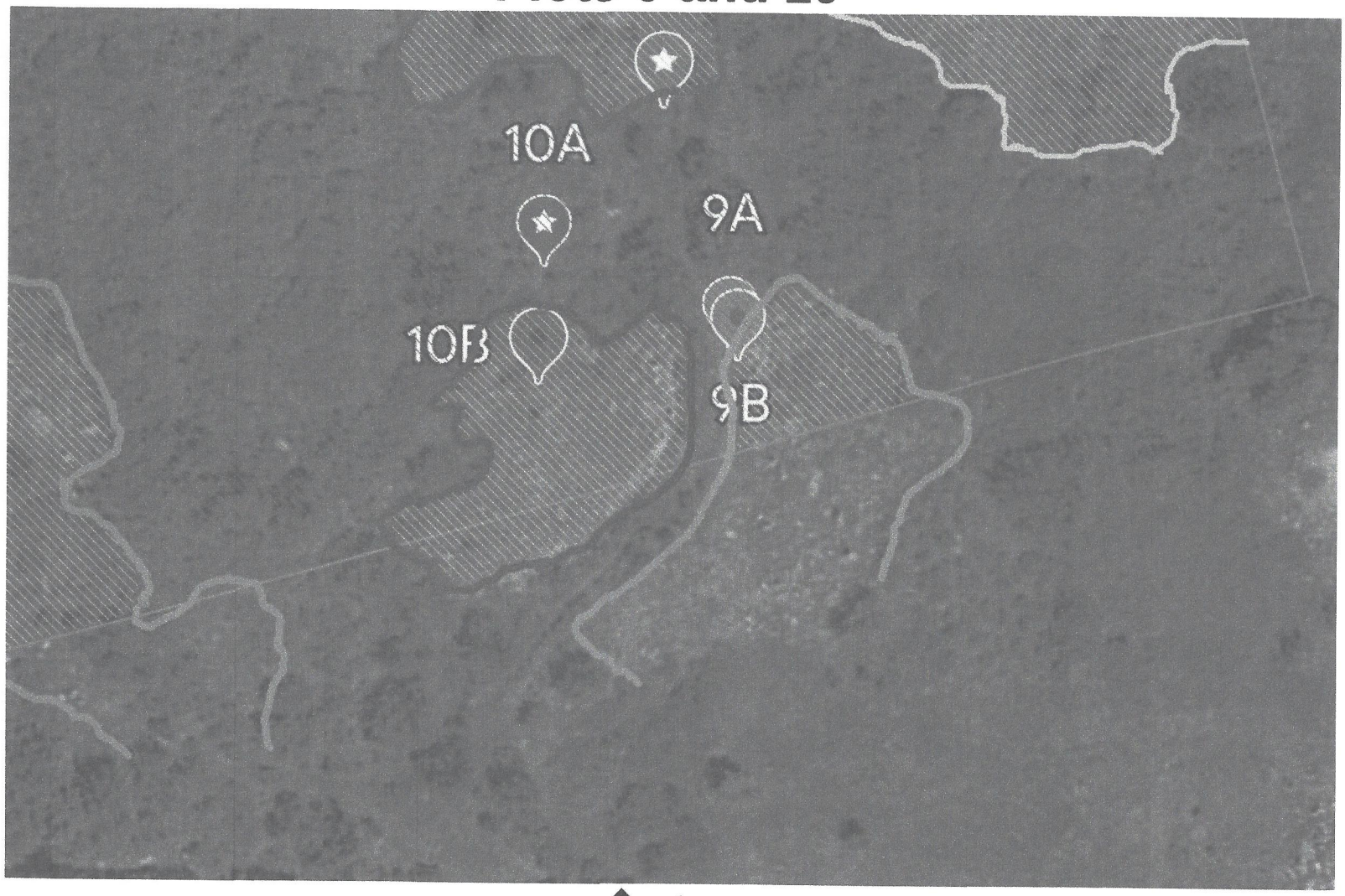
Bonanza Boy Mill Site Wetland Delineation
Plots 9 and 10



S27 T42N R8E NMPM

Bonanza Boy Mill Site

Owner: Bonanza Boy, LLC

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Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW 1A City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): compacted fill area access Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87489 Long: -107.7265 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction. The pit was dug on a fill area (4 inches of dirt until rocky fill).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ✓ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral soil material	No indication of saturation and dry
2-4	10 YR 3/16	50					mineral soil material	No indication of saturation and dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
Depth of test pit was 4 inches until hit rocky fill. There was no indication of hydric soil present at test pit 1A.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of hydrology present at test pit 1A.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (1B) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87512 Long: -107.72647 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PEM1Bs

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction. The pit was dug on a fill area (8 inches of dirt until rocky fill).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	50	Yes	FACW
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	45	Yes	OBL
2. Asclepias incarnata	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation was used to indicate the presence of Hydrophytic Vegetation.

SOIL

Sampling Point: WSW 1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5YR 3/6	37.5					Loamy	Saturated soil
3-6	10YR 3/1	37.5					Loamy	Saturated soil
6-8	Gley1 2.5/N	25					Loamy/Clay	Loamy Gleyed Matrix (F2)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 8 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
The pit was dug on a fill area (8 inches of dirt until rocky fill). Although disturbed, there were indications of long exposure to water at 6-8 inch depths (Loamy Gleyed Matrix (F2)).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✔ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0-8 inches

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The pit was dug on a fill area (8 inches of dirt until rocky fill). Although disturbed, saturation was present throughout soil (0-8 inches).

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (1C) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1C

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): Below culvert Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): Southern Rocky Mountains Lat: 37.875346 Long: -107.7265985 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PEM1Bs

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Area disturbed from historic fill and proximity to highway and CDOT culvert.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	50	Yes	FACW
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Carex utriculata	30	Yes	OBL
2. Asclepias incarnata	10	No	OBL
3. Caltha leptosepala	7	No	OBL
4. Nothocalais cuspidata	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation was used to indicate the presence of Hydrophytic Vegetation.

SOIL

Sampling Point: WSW 1C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10R 3/3	44.4					Loamy	Saturated soil
8-16	10R 2.5/1	44.4					Loamy	Saturated soil
16-18	Gley2 3/10BG	11.1					Loamy/Clay	Loamy Gleyed Matrix (F2)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✓ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Although disturbed, there were indications of long exposure to soil from water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0-18 inches

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Although disturbed, there were clear indications of sufficient saturation.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (1D) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 1D

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): rocky fill area Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87522 Long: -107.72648 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Normal Circumstances were not present because environment had been disturbed from former construction. 1D was also notably very close to the highway.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	50	Yes	FACW
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Nothocalais cuspidata	20	Yes	FACU
2. Carex utriculata	15	Yes	OBL
3. Juncus arcticus	10	No	FACW
4. Mertensia ciliata	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hyrdology.

SOIL

Sampling Point: WSW 1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10 YR 4/16	50					mineral soil material	No indication of saturation and dry
3-6	10 YR 3/16	50					mineral soil material	No indication of saturation and dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Historic Rocky Fill

Depth (inches): 6 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:

Depth of text pit was 6 inches until the historic rocky fill was hit. There was no indication of hydric soil present at test pit 1D.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There was no indication of hydrology present at test pit 1D.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (2A) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 2A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): flat compacted Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87524 Long: -107.72696 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	85	Yes	OBL
2. Asclepias incarnata	15	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hyrdology.

SOIL

Sampling Point: WSW 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5YR 2.5/2	44.4					mineral soil material	Dried yellow decaying grass 0-8 inches in soil
8-12	2.5YR 3/1	22.2					mineral soil material	No indication of saturation and dry
12-18	2.5YR 3/2	33.3					mineral soil material	No indication of saturation and dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:
There was no indication of hydric soil present at test pit 2A. There was no indication of saturation throughout test pit (0-18 inches). Soil was dry, crumbly, and had dried yellow decaying grass 0-8 inches in soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of hydrology present at test pit 2A. The soil was very dry and crumbly.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (2B) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 2B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87511 Long: -107.72694 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	30	Yes	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	60	Yes	OBL
2. Juncus arcticus	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	10YR 2/1	77.78					Loamy	Saturated soil
14-16	Gley 1 4/10Y	11.11					Loamy/Clay	Loamy Gleyed Matrix (F2)
16-17	Gley 1 6/10Y	5.55					Loamy/Clay	Loamy Gleyed Matrix (F2)
17-18	Gley 1 7/10Y	5.55					Sandy	Sandy Gleyed Matrix (S4)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ✓ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✓ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:
Indications of Loamy Gleyed Matric (F2) at 14-17 inches of soil. Indications of Sandy Gleyed Matrix (S4) at 17-18 inches of soil. The soil had been completely saturated throughout (0-18 inches).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0-18 inches

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was multiple primary and secondary indicators for test pit 2B.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (2C) City/County: San Juan Sampling Date: June 15, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 2C

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): flat fill area Local relief (concave, convex, none): none Slope (%): 2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8751396 Long: -107.7273903 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	30	Yes	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	50	Yes	OBL
2. Veratrum californicum	20	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 2C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	10R 2.5/1	77.78					Loamy	Saturated
14-16	Gley2 2.5/5PB	11.11					Loamy/Clay	Loamy Gleyed Matrix (F2)
16-17	Gley1 3/N	5.55					Loamy/Clay	Loamy Gleyed Matrix (F2)
17-18	Gley1 3/10Y	5.55					Loamy/Clay	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No _____

Remarks:
From 14-18 inches there was Loamy Gleyed Matrix (F2) and 0-18 inches the soil was completey saturated. Although the soil was saturated throughout the test pit, it should be noted the test pit was dug after significant rain fall. When reviewed the next week there was no surface water and the soil appeared dry on top layer.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 0-18 inches

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Although the soil was saturated throughout the test pit, it should be noted the test pit was dug after significant rain fall. When reviewed the next week there was no surface water and the soil appeared dry on top layer. There were signs of Reduced Iron (C4) 14-18 inches in the soil, but besides this there were no other indicators of hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (4A) City/County: San Juan Sampling Date: June 16, 2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 4A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terraced bench Local relief (concave, convex, none): slight convex Slope (%): 2-3%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87472 Long: -107.72692 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former construction.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	70	Yes	FACW
2.			
3.			
4.			
	70 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	20	Yes	OBL
2. Asclepias incarnata	5	No	OBL
3. Mertensia ciliata	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-15	10R 3/2	83.33					Loamy	
15-18	Gley2 5/10B	16.67					Loamy/Clay	Loamy Gleyed Matrix (F2)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
From 15-18 inches there is indications of Loamy Gleyed Matrix (F2).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ✔ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✔ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0-18 inches

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was multiple primary and secondary indicators for test pit 4A.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (4B) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 4B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): glacial mound Local relief (concave, convex, none): convex Slope (%): 3-5%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87468 Long: -107.72709 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Bed rock below 3.5 inches of top soil

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	22	Yes	FACW
2. Nothocalais cuspidata	20	Yes	FAC
3. Epilobium ciliatum	16	Yes	FACW
4. Mertensia ciliata	15	No	OBL
5. Asclepias incarnata	14	No	OBL
6. Caltha leptosepala	13	No	OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Dominance Test is >50% shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 4B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
3.5	10 YR 4/3	50					Dry	organic material
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
Bed rock after 3.5 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Glacial deposition, elevated gradient surrounding area.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (4C) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 4C

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slightly concave Slope (%): 2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87487 Long: -107.72709 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former cc

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	40	Yes	FACW
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	50	Yes	OBL
2. Juncus arcticus	10	No	FACW
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 4C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/6	33					mineral s	loamy/ saturated
6-12	10YR2/1	33					mineral s	clayed
12-18	Gley 1 7/ 5GY	33						clayed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
Depth of text pit was 4 inches until hit rocky fill. There was no indication of hydric soil present at test pit 1A.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0-12

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Just off elevated area, there are thriving wetland communities.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (5A) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 5A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): glacial mounded area Local relief (concave, convex, none): convex Slope (%): 3-7%

Subregion (LRR): Southern Rocky Mountains Lat: 37.87444 Long: -107.72758 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former cc

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	55	Yes	FACW
2.			
3.			
4.			
	55 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	40	Yes	OBL
2. Carex aquatilis	5	No	OBL
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	33					mineral s	loamy
6-12	Gley 1 5 /10Y	33					mineral s	loamy/ saturated
12-18	Gley 2 7/5BG &5/10 B	33						sandy/ clayed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ✔ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
Depth of text pit was 4 inches until hit rocky fill. There was no indication of hydric soil present at test pit 1A.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Glacial deposition, elevated gradient surrounding area. WSW 5A on border and within wetland.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (5B) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 5B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slight convex Slope (%): 2-3%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8743 Long: -107.72764 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former cc

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	80	Yes	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex utriculata	12	Yes	OBL
2. Asclepias incarnata	8	No	OBL
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW 5B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	Gley 1 5/ 10Y	33					mineral s	dry
6-12	Gley 1 5/ 10Y	33					mineral s	dry
12-18	Gley 1 5/ 10Y	33						clayed at bottom of probe

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ____ No ✔

Remarks:
Dry area within natural fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Glacial deposition, elevated gradient surrounding area. WSW 5B on border and not within wetland.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (6A) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 6A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): small deposition area Local relief (concave, convex, none): convex Slope (%): 2-5%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8748241 Long: -107.7272648 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Normal Circumstances were not present because the environment had been disturbed from former cc

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Mertensia ciliata	30	Yes	OBL
3. Nothocalais cuspidata	20	No	FAC
4. Androsace septentrionalis	7	No	FAC
5. Carex aquatilis	3	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hdrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 6A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 5/2	33					mineral s	loamy/ crumbly
6-12	10YR 4/2	33					mineral s	loamy/ crumbly
12-18	10YR 3/1	33						loamy/ crumbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
Soil is dry

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No Saturation Visible on Aerial Imagery

Remarks:
Slightly raised small area of deposition.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (7A) City/County: San Juan Sampling Date: 06/22/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 7A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): fill compacted Local relief (concave, convex, none): none Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8752 Long: -107.72659 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

1 inch of soil until rocky fill

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	93	Yes	FACW
2. Mertensia ciliata	7	No	OBL
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

The Rapid Test for Hydrophytic Vegetation shows indications of hydrophytic vegetation present.

SOIL

Sampling Point: WSW 7A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	2.5 Y 2.5/1	100					Dry	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
1 inch of soil until rocky fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology present. Specifically wanted to identify area outside of wetlands.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (8A) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 8A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terraced slope Local relief (concave, convex, none): slight convex Slope (%): 2-4%

Subregion (LRR): Southern Rocky Mountains Lat: 37.874341 Long: -107.7264766 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6Cx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

This healthy wetland is an extension of WSW 1 to south and east.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	80	yes	FACW
2.			
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Carex utriculata	9%	Yes	FACW
2. Juncus arcticus	6%	Yes	FAC
3. Bryum argenteum	5%	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Similar to WSW 1 vegetation.

SOIL

Sampling Point: WSW 8A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral s	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✔ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
This saturated area has been a wetland for a very long time.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This wetland area is an extension of WSW 1 and is healthy within the saturated area. As soon as step out of wetland, there's dry fill from many different eras of development.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (8B) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 8B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): terraced slope Local relief (concave, convex, none): none Slope (%): 3-5%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8748138 Long: -107.7264737 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

Downgrade towards Artist's Cabin - dry fill, not a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW 8B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral	No indication of saturation
2-4	10 YR 3/16	50					mineral	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
In fill area, compacted. Dry at 4 inches, unable to dig deeper through compacted fill area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of hydrology present at test pit 1A.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (9A) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 9A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): ruts in road Local relief (concave, convex, none): concave in ruts Slope (%): 1-2%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8743241 Long: -107.7266904 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PEM1Bx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Man induced wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. carex utriculata	43	Yes	FACW
2. juncus arcticus	29	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Wet enough within ruts to be saturated and support hydrophytic vegetation.

SOIL

Sampling Point: WSW 9A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral s	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ✔ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
Wet saturated soil matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 1"

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
This man induced wetland was caused by the historic road between WSW 9 and WSW 10. The ruts in the road caused water to flow on the western part of the road.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (9B) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 9B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): historic road Local relief (concave, convex, none): none Slope (%): 1%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8743071 Long: -107.7267083 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____ No ✔	
Wetland Hydrology Present?	Yes _____ No ✔	

Remarks:

Top of road graded through glacial deposition to access Mill Creek

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix monticola	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW 9B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral s	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
Depth of text pit was 4 inches until hit rocky fill. There was no indication of hydric soil present at test pit 1A.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Not a wetland, top of road graded through glacial deposition to access Mill Creek.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (10A) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 10A

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 3-7%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8743743 Long: -107.7269099 Datum: _____

Soil Map Unit Name: CO672 NWI classification: PSS6B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

The plot area around WSW 10 is glacial deposition upland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. salix monticola	90%	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW10A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral s	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✔ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes ✔ No ___

Remarks:
Saturated loam down to 14"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 12-18"

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Even in drier upland areas, plenty of saturation at 12-18".

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Bonanza Boy Mill Site WSW (10B) City/County: San Juan Sampling Date: 06/30/2023

Applicant/Owner: Bonanza Boy PO Box 992, Montrose, CO 81402 State: CO Sampling Point: WSW 10B

Investigator(s): Bill Coughlin and WSW staff Section, Township, Range: S27 T42N R8W NMPM

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 3-7%

Subregion (LRR): Southern Rocky Mountains Lat: 37.8743025 Long: -107.7269566 Datum: _____

Soil Map Unit Name: CO672 NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

The plot area around WSW 10 is glacial deposition upland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Spruce tree	35	Yes	FACW
2.			
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus arcticus	40	Yes	FACW
2. Bryum argenteum	18	Yes	FAC
3. Viola adunca	5	No	UPL
4. Carex utriculata	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Although there is hydrophytic vegetation present there are no indications of hydric soil and hydrology.

SOIL

Sampling Point: WSW10E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/16	50					mineral s	No indication of saturation
2-4	10 YR 3/16	50					mineral s	No indication of saturation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky Fill

Depth (inches): 4 inches

Hydric Soil Present? Yes _____ No ✔

Remarks:
Depth of text pit was 4 inches until hit rocky fill. There was no indication of hydric soil present at test pit 1A.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Upland glacial fill area above historic road. 10B is the inner area of glacial deposition with significantly large boulders.

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

June 1, 2022

Brian Briggs
B.K. Briggs & Associates
2019 Otter Pond Circle
Montrose, CO 81401

RE: Need for State Reclamation Permit, B. K. Briggs & Associates, File No. M-2022-027

Dear Mr. Briggs:
On May 25, 2022 the Division of Reclamation, Mining and Safety (Division) received your correspondence responding the Division's inquiry, RE: "Is It Mining". The Division has assigned file number M-2022-027 to this project. Please display the file number on any correspondence regarding this specific project.

The information you provided indicates you will be conducting underground excavation for a resort, no extraction of mineralized material is proposed. Construction material produced from the underground excavation will be processed and used on site for structural fill and road base. No extracted material is proposed to leave the site. The project proposes to excavate approximately 1,200 cubic yards of material. The excavation activity will be conducted underground with a 2 cubic yard LHD and an underground haul truck. Surface equipment used will be a 1 cubic yard excavator, 2 cubic yard FEL, a diesel compressor and a diesel generator.

Based on the information contained in the correspondence it is the Division's opinion that no reclamation permit will be required from this agency at this time. However, other local, state, or federal permits may be required and it is recommended that you contact those agencies for further clarifications if you have questions. Please be advised that this opinion is being offered based on the information provided in your response. **Any significant deviation from the described activity, including removal for sale or trade of any excavated materials from its natural state could result in a review and possible reversal of this opinion.**

Please consider the following: if the Division receives different information or a written complaint regarding the proposed activities it is required by law to further investigate. If the investigation shows a possible violation of the Construction Materials Act and Rules an enforcement action would be initiated which could include civil penalties, a cease and desist order and obtaining a permit for the activities.

If you have any questions please contact me at (303) 866-3567 extension 8186

Sincerely,

Travis Marshall
Senior Environmental Protection Specialist