Regular 112 Operation Reclamation Permit Application
to the Colorado Division of Reclamation, Mining, and Safety

Jackrabbit Gravel Quarry

July 2025

Applicant:

QB Energy Operating, LLC
143 Diamond Avenue
Parachute, CO 81635

Prepared by:

RIVERCITY CONSULTANTS
215 Pitkin Ave, Unit 201
Grand Junction, CO 81501
Phone: (970) 241-4722
Fax: (970) 241-8841

Job No. 1770-034

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STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

CONSTRUCTION MATERIAL

REGULAR (112) OPERATION

RECLAMATION PERMIT APPLICATION PACKAGE

APPLICABILITY:

This application package is for a construction materials operation which affects 10 acres or more.
If you plan to conduct a construction materials extraction operation which meets these criteria, please follow the instructions provided in this package, in the Rules and Regulations, and in the Colorado Land Reclamation Act for the Extraction of Construction Materials, as required.

RECOMMENDATIONS PRIOR TO FILING:

The Construction Material Rules and Regulations (the Colorado Land Reclamation Act for the Extraction of Construction Materials, Section 34-32.5-101, et seq., C.R.S., and 2 CCR 407-1) and the Colorado Mined Land Reclamation Board (the "Board") regulate the permitting, operational and reclamation requirements for all construction material extraction operations in Colorado. It is your obligation to comply with the Act and Regulations. You are encouraged to obtain and review a copy of the Rules, available for $8.00 from the Division of Reclamation, Mining, and Safety (the "Office"). In order to submit your application properly, it is recommended that you review the Act and:

Rule 1.1	Definitions;
Rule 1.4.1	Application Review and Consideration Process;
Rule 1.4.5	Specific Requirements for Regular 112 Operations;
Rule 1.6	Public Notice Procedures;
Rule 3.1	Reclamation Performance Standards;
Rule 3.3.1	Operating without a Permit - Penalty;
Rule 4	Performance Warranties and Financial Warranties;
Rule 6	Permit Application Exhibit Requirements;
Rule 6.2	General Requirements of Exhibits;
Rule 6.4	Specific Permit Application Exhibit Requirements; and
Rule 6.5	Geotechnical Stability Exhibit.

It is recommended that you contact the agencies listed in the application section titled "Compliance With Other Laws" prior to submitting the application to the Office.

FILING REQUIREMENTS:

In order to apply for a Reclamation Permit for a Regular 112 Operation, please provide:

____ ° One (1) signed and notarized completed **ORIGINAL** and one (1) copy of the completed original Regular 112 Operation Application Form. **ORIGINAL SIGNATURES MUST BE DONE IN BLUE INK.**

____ ° Two (2) copies of Exhibits A-S (required sections described in Rule 6).

____ ° Two (2) copies of Addendum 1 - Notice requirements (described in Rule 1.6.2(1)(b)). A sample of this notice is attached for your use.

____ ° The Geotechnical Stability Exhibit when required by the Division.

____ ° The application fee.

The ninety (90) day period for review of the application and exhibits will **NOT** begin until all required information and fee are submitted. The Office will then review the submitted information for adequacy.

NOTICE REQUIREMENTS:

____ 1. You MUST send a notice, on a form approved by the Board, to the local board of county commissioners. A copy of this "Notice of Filing Application" form is attached for your use.

____ 2. If the mining operation is within the boundaries of a conservation district, send a notice to the board of supervisors of the conservation district, PRIOR to filing the application. A copy of this "Notice of Filing Application" form is attached for your use.

____ 3. You MUST include proof of notice #1 and #2 above with the application at the time the application is submitted to the Office for filing (Rule 1.6.2(1)(g)).

____ 4. PRIOR to filing the application, place for public review a copy of the application, less confidential items, with the clerk or recorder of the county or counties in which the affected land is located.

____ 5. You MUST include an affidavit or receipt demonstrating that the application was filed with the county clerk or recorder at the time the application is submitted to the Office for filing.

____ 6. Any changes or additions made to an application submittal MUST be filed with the county clerk or recorder. You MUST also provide the Office with an affidavit or receipt demonstrating that the change was filed with the county clerk or recorder no later than the close of business on the day the change was filed with the Office (Rule 1.8.1(2)).

____ 7. Within ten (10) days after your application is considered filed, you must publish four times in a newspaper of general circulation, in the locality of the proposed mining operation, the notice described in Rule 1.6.2(1)(d).

____ 8. In addition, after the first publication you must mail or personally serve a copy of the notice described in Rule 1.6.2(1)(d) to all owners of record of surface rights to the affected land and all owners of record of lands that are within 200 feet of the boundary of the affected land (Rule 1.6.2(1)(e)). A copy of a form which includes all required information for the notice is attached for your use.

____ 9. Prior to the Office making a decision (consideration of the application), you MUST submit a copy of the proof of publication from the newspaper and proof of all required notices. Proof of the notices may be by submitting copies of return receipts of a certified mailing or by proof of personal service (Rules 1.4.1(4), 1.4.2(4)(c), 1.6.2(1)(a)(ii), and 1.6.2(1)(g)).

The copy of the application and any changes or additons placed at the office of the county clerk or recorder shall NOT be recorded, but shall be retained there for at least sixty (60) days after a decision on the application by the Office and be available for inspection during this period. At the end of this period, the application may be reclaimed by the applicant or destroyed (Rule 1.6.2(2)).

APPLICATION REVIEW PROCEDURES:

The Office shall approve or deny the application within ninety (90) days of filing unless the date for consideration by the Office is extended pursuant to Rule 1.8. The time for consideration shall not be extended beyond ninety (90) days after the last such change submitted. For complex applications, the review period may be extended an additional sixty (60) days. Please see Rule 1.1(10) for the definition of what constitutes a complex application.

APPLICATION APPROVAL/DENIAL:

If the requirements of the Act and Mineral Rules have been satisfied, the Office will approve the application. The Act also provides for automatic approval if no action is taken by the Office by the end of the review period.

If the Act and Regulation requirements have not been satisfied, the Office will deny the application. If the Office denies the application, you may appeal to the Board for a final determination by submitting a written request for administrative appeal to the Board within 60 days of the decision date (Rule 1.4.7).

PERFORMANCE AND FINANCIAL WARRANTIES:

A performance warranty, and a financial warranty dollar amount determined during the application review process, must be submitted and approved by the Office PRIOR to permit issuance. A financial warranty should NOT be submitted until a decision on the application has been made. If the applicant is a unit of state or county government, then ONLY a performance warranty is required.

Several different types of financial warranties are allowed by the law. Please review Rule 4.0 to determine which type of financial warranty you desire to use. You may obtain the appropriate warranty forms from the Office during the application review period.

Please note that an application approval DOES NOT convey a right to begin operations. You MUST submit, and have approval of your performance and financial warranties, and receive your copy of the signed permit document PRIOR to beginning on-site mining activity.

AUTOMATIC PERMIT APPROVAL:

An automatic approval will occur where the Office fails to notify the applicant/operator that the application has been denied. This decision must be made ninety (90) calendar days from the date the application was determined to have been filed. However, the performance and financial warranties must be submitted and approved by the Office before the permit will be issued even if you receive an automatic approval. NO MINING OPERATIONS SHALL BEGIN UNTIL A PERMIT IS ISSUED (Section 34-32.5-109(1), C.R.S.).

COMPLIANCE WITH OTHER LAWS:

Compliance with the Act and Rules and Regulations of the Mined Land Reclamation Board DOES NOT relieve you of your responsibility to comply with all other applicable state and federal laws. We recommend that you contact the following agencies to determine whether you need to comply with their legal requirements:

- The Colorado State Historical Preservation Office regarding properties of historical significance including the need for an archeological survey, procedures for requesting a file search, and inventory forms to identify structures.
- Colorado Division of Water Resources with regard to water rights;
- Colorado Department of Health, Water Quality Control Division, with regard to the discharge of pollutants into the State waters;
- Colorado Department of Health, Air Pollution Control Division, with regard to the need for a fugitive dust permit;
- U.S. Bureau of Land Management or the U.S. Forest Service if the proposed operation will occur on federal lands;
- U. S. Army Corps of Engineers regarding a dredge and fill (404) permit; and
- The County Planning Department for the county or counties in which your proposed operation is located. Section 34-32.5-109(3), C.R.S, requires a mining operator to be responsible for assuring that the mining operation and the post-mining land use comply with local land use regulations and any master plan for extraction adopted pursuant to Section 34-1-304, C.R.S.

COMPLETION OF MINING:

Upon completion of any phase of reclamation, you should consult Rule 3.1 for reclamation standards and 4.16 for details on how to request a reclamation responsibility release from the Board.

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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

CONSTRUCTION MATERIALS
REGULAR (112) OPERATION
RECLAMATION PERMIT APPLICATION FORM

CHECK ONE: ☐ **There is a File Number Already Assigned to this Operation**

Permit # M -____-____-___ (Please reference the file number currently assigned to this operation)

☑ **New** Application (Rule 1.4.5) ☐ **Amendment** Application (Rule 1.10)

☐ **Conversion** Application (Rule 1.11)

Permit # M -____-____-____ (provide for **Amendments** and **Conversions** of existing permits)

The application for a Construction Materials Regular 112 Operation Reclamation Permit contains three major parts: (1) the application form; (2) Exhibits A-S, Addendum 1, any sections of Exhibit 6.5 (Geotechnical Stability Exhibit; and (3) the application fee. When you submit your application, be sure to include one (1) complete signed and notarized **ORIGINAL** and one (1) copy of the completed application form, two (2) copies of Exhibits A-S, Addendum 1, appropriate sections of 6.5 (Geotechnical Stability Exhibit, and a check for the application fee described under Section (4) below. Exhibits should **NOT** be bound or in a 3-ring binder; maps should be folded to 8 1/2" X 11" or 8 1/2" X 14" size. To expedite processing, please provide the information in the format and order described in this form.

GENERAL OPERATION INFORMATION

Type or print clearly, in the space provided, ALL information requested below.

1. **Applicant/operator or company name (name to be used on permit)**: QB Energy Operating, LLC
   - 1.1 Type of organization (corporation, partnership, etc.): Delaware Limited Liability Company

2. **Operation name (pit, mine or site name)**: Jackrabbit Gravel Quarry

3. **Permitted acreage (new or existing site)**: 17.20 permitted acres
   - 3.1 Change in acreage (+) _____ acres
   - 3.2 Total acreage in Permit area 17.20 acres

4. **Fees**:
   - 4.1 New Application $2,696.00 application fee
   - 4.2 New Quarry Application $3,342.00 quarry application
   - 4.4 Amendment Fee $2,229.00 amendment fee
   - 4.5 Conversion to 112 operation (set by statute) $2,696.00 conversion fee

5. **Primary commoditie(s) to be mined**: Aggregates
   - 5.1 Incidental commoditie(s) to be mined: 1. ____ - ____ lbs/Tons/yr 2. ____ / ____ lbs/Tons/yr
     3. ____ / ____ lbs/Tons/yr 4. ____ / ____ lbs/Tons/yr 5. ____ / ____ lbs/Tons/yr
   - 5.2 Anticipated end use of primary commoditie(s) to be mined: Road Base
   - 5.3 Anticipated end use of incidental commoditie(s) to be mined: Road Base

6. **Name of owner of subsurface rights of affected land**: QB Energy Operating, LLC
If 2 or more owners, "refer to Exhibit O".

7. **Name of owner of surface of affected land**: QB Energy Operating, LLC

8. **Type of mining operation**: ☑ Surface ☐ Underground

9. **Location Information**: The center of the area where the majority of mining will occur:

COUNTY: Garfield County

PRINCIPAL MERIDIAN (check one): ☑ 6th (Colorado) ☐ 10th (New Mexico) ☐ Ute

SECTION (write number): S 17

TOWNSHIP (write number and check direction): T 5 ☐ North ☑ South

RANGE (write number and check direction): R 96 ☐ East ☑ West

QUARTER SECTION (check one): ☐ NE ☐ NW ☑ SE ☐ SW

QUARTER/QUARTER SECTION (check one): ☐ NE ☐ NW ☑ SE ☐ SW

GENERAL DESCRIPTION: (the number of miles and direction from the nearest town and the approximate elevation): _____

The nearest town is Parachute, CO. The site location is approximately 12.9 miles north and west of Parachute and sits at an approximate elevation of 8,390'

10. **Primary Mine Entrance Location** (report in either Latitude/Longitude **OR** UTM):

Latitude/Longitude:

Example: (N) 39° 44′ 12.98″
(W) 104° 59′ 3.87″

Latitude (N): deg 39 min 36 sec 55.28 (2 decimal places)

Longitude (W): deg 106 min _____ sec 58.47 (2 decimal places)

OR

Example: (N) 39.73691°
(W) -104.98449°

Latitude (N) 39.73691 _____ (5 decimal places)

39.73691 -104.98449 _____ (5 decimal places)

Longitude(W)

OR

Example: Zone 13 NAD27 UTM
4398351.2 N

UTM Datum (specify NAD27, NAD83 or WGS 84) Nad 83 Zone 13

Easting _____

Northing _____

11. **Correspondence Information**:

APPLICANT/OPERATOR (name, address, and phone of name to be used on permit)

Contact's Name: Ed Seymour Title: Land Manager
Company Name: QB Energy Operating, LLC
Street/P.O. Box: 143 Diamond Avenue P.O. Box:
City: Parachute
State: Colorado Zip Code: 81635
Telephone Number: (970) - 852-9819
Fax Number: ( ) -

PERMITTING CONTACT (if different from applicant/operator above)

Contact's Name: Dillion Foster Title: Principal
Company Name: River City Consulting
Street/P.O. Box: 215 Pitkin Avenue P.O. Box:
City: Grand Junction
State: Colorado Zip Code: 81501
Telephone Number: (970) - 241-4722
Fax Number: ( ) -

INSPECTION CONTACT

Contact's Name: Ed Seymour Title: Land Manager
Company Name: QB Energy Operating, LLC
Street/P.O. Box: 143 Diamond Avenue P.O. Box:
City: Parachute
State: Colorado Zip Code: 81635
Telephone Number: (970) - 852-9819
Fax Number: ( ) -

CC: STATE OR FEDERAL LANDOWNER (if any)

Agency: N/A
Street:
City:
State: Zip Code:
Telephone Number: ( ) -

CC: STATE OR FEDERAL LANDOWNER (if any)

Agency: N/A
Street:
City:
State: Zip Code:
Telephone Number: ( ) -

12. **Primary future (Post-mining) land use (check one)**:

- [ ] Cropland(CR)
- [x] Rangeland(RL)
- [ ] Residential(RS)
- [ ] Developed Water Resources(WR)
- [ ] Pastureland(PL)
- [ ] Forestry(FR)
- [ ] Recreation(RC)
- [ ] General Agriculture(GA)
- [ ] Wildlife Habitat(WL)
- [ ] Industrial/Commercial(IC)
- [ ] Solid Waste Disposal(WD)

13. **Primary present land use (check one)**:

- [ ] Cropland(CR)
- [ ] Rangeland(RL)
- [ ] Residential(RS)
- [ ] Developed Water Resources(WR)
- [ ] Pastureland(PL)
- [ ] Forestry(FR)
- [ ] Recreation(RC)
- [ ] General Agriculture(GA)
- [ ] Wildlife Habitat(WL)
- [x] Industrial/Commercial(IC)

14. **Method of Mining**: Briefly explain mining method (e.g. truck/shovel): Dozer, excavator, loader, and trucks

15. **On Site Processing**: [x] Crushing/Screening

13.1 Briefly explain mining method (e.g. truck/shovel): Portable crushering and screening

List any designated chemicals or acid-producing materials to be used or stored within permit area: No chemicals to be used

16. **Description of Amendment or Conversion**:

If you are amending or converting an existing operation, provide a brief narrative describing the proposed change(s).

N/A

Maps and Exhibits:

Two (2) complete, unbound application packages must be submitted. One complete application package consists of a signed application form and the set of maps and exhibits referenced below as Exhibits A-S, Addendum 1, and the Geotechnical Stability Exhibit. Each exhibit within the application must be presented as a separate section. Begin each exhibit on a new page. Pages should be numbered consecutively for ease of reference. If separate documents are used as appendices, please reference these by name in the exhibit.

With each of the two (2) signed application forms, you must submit a corresponding set of the maps and exhibits as described in the following references to Rule 6.4, 6.5, and 1.6.2(1)(b):

EXHIBIT A	Legal Description
EXHIBIT B	Index Map
EXHIBIT C	Pre-Mining and Mining Plan Map(s) of Affected Lands
EXHIBIT D	Mining Plan
EXHIBIT E	Reclamation Plan
EXHIBIT F	Reclamation Plan Map
EXHIBIT G	Water Information
EXHIBIT H	Wildlife Information
EXHIBIT I	Soils Information
EXHIBIT J	Vegetation Information
EXHIBIT K	Climate Information
EXHIBIT L	Reclamation Costs
EXHIBIT M	Other Permits and Licenses
EXHIBIT N	Source of Legal Right-To-Enter
EXHIBIT O	Owners of Record of Affected Land (Surface Area) and Owners of Substance to be Mined
EXHIBIT P	Municipalities Within Two Miles
EXHIBIT Q	Proof of Mailing of Notices to County Commissioners and Conservation District
EXHIBIT R	Proof of Filing with County Clerk or Recorder
EXHIBIT S	Permanent Man-Made Structures
Rule 1.6.2(1)(b)	ADDENDUM 1 - Notice Requirements (sample enclosed)
Rule 6.5	Geotechnical Stability Exhibit (any required sections)

The instructions for preparing Exhibits A-S, Addendum 1, and Geotechnical Stability Exhibit are specified under Rule 6.4 and 6.5 and Rule 1.6.2(1)(b) of the Rules and Regulations. If you have any questions on preparing the Exhibits or content of the information required, or would like to schedule a pre-application meeting you may contact the Office at 303-866-3567.

Responsibilities as a Permittee:

Upon application approval and permit issuance, this application becomes a legally binding document. Therefore, there are a number of important requirements which you, as a permittee, should fully understand. These requirements are listed below. Please read and initial each requirement, in the space provided, to acknowledge that you understand your obligations. If you do not understand these obligations then please contact this Office for a full explanation.

ES 1. Your obligation to reclaim the site is not limited to the amount of the financial warranty. You assume legal liability for all reasonable expenses which the Board or the Office may incur to reclaim the affected lands associated with your mining operation in the event your permit is revoked and financial warranty is forfeited;

2. The Board may suspend or revoke this permit, or assess a civil penalty, upon a finding that the permittee violated the terms or conditions of this permit, the Act, the Mineral Rules and Regulations, or that information contained in the application or your permit misrepresent important material facts;

3. If your mining and reclamation operations affect areas beyond the boundaries of an approved permit boundary, substantial civil penalties, to you as permittee can result;

4. Any modification to the approved mining and reclamation plan from those described in your approved application requires you to submit a permit modification and obtain approval from the Board or Office;

5. It is your responsibility to notify the Office of any changes in your address or phone number;

6. Upon permit issuance and prior to beginning on-site mining activity, you must post a sign at the entrance of the mine site, which shall be clearly visible from the access road, with the following information (Rule 3.1.12):

   a. the name of the operator;

   b. a statement that a reclamation permit for the operation has been issued by the Colorado Mined Land Reclamation Board; and,

   c. the permit number.

7. The boundaries of the permit boundary area must be marked by monuments or other markers that are clearly visible and adequate to delineate such boundaries prior to site disturbance.

8. It is a provision of this permit that the operations will be conducted in accordance with the terms and conditions listed in your application, as well as with the provisions of the Act and the Construction Material Rules and Regulations in effect at the time the permit is issued.

9. Annually, on the anniversary date of permit issuance, you must submit an annual fee as specified by Statute, and an annual report which includes a map describing the acreage affected and the acreage reclaimed to date (if there are changes from the previous year), any monitoring required by the Reclamation Plan to be submitted annually on the anniversary date of the permit approval. Annual fees are for the previous year a permit is held. For example, a permit with the anniversary date of July 1, 1995, the annual fee is for the period of July 1, 1994 through June 30, 1995. Failure to submit your annual fee and report by the permit anniversary date may result in a civil penalty, revocation of your permit, and forfeiture of your financial warranty. It is your responsibility, as the permittee, to continue to pay your annual fee to the Office until the Board releases you from your total reclamation responsibility.

10. For joint venture/partnership operators: the signing representative is authorized to sign this document and a power of attorney (provided by the partner(s)) authorizing the signature of the representative is attached to this application.

NOTE TO COMMENTORS/OBJECTORS:

It is likely there will be additions, changes, and deletions to this document prior to final decision by the Office. Therefore, if you have any comments or concerns you must contact the applicant or the Office prior to the decision date so that you will know what changes may have been made to the application document.

The Office is not allowed to consider comments, unless they are written, and received prior to the end of the public comment period. You should contact the applicant for the final date of the public comment period.

If you have questions about the Mined Land Reclamation Board and Office's review and decision or appeals process, you may contact the Office at (303) 866-3567.

Certification:

As an authorized representative of the applicant, I hereby certify that the operation described has met the minimum requirements of the following terms and conditions:

1. To the best of my knowledge, all significant, valuable and permanent man-made structure(s) in existence at the time this application is filed, and located within 200 feet of the proposed affected area have been identified in this application (Section 34-32.5-115(4)(e), C.R.S.).

2. No mining operation will be located on lands where such operations are prohibited by law (Section 34-32.5-115(4)(f), C.R.S.;

3. As the applicant/operator, I do not have any extraction/exploration operations in the State of Colorado currently in violation of the provisions of the Colorado Land Reclamation Act for the Extraction of Construction Materials (Section 34-32.5-120, C.R.S.) as determined through a Board finding.

4. I understand that statements in the application are being made under penalty of perjury and that false statements made herein are punishable as a Class 1 misdemeanor pursuant to Section 18-8-503, C.R.S.

This form has been approved by the Mined Land Reclamation Board pursuant to section 34-32.5-112,C.R.S., of the Colorado Land Reclamation Act for the Extraction of Construction Materials. Any alteration or modification of this form shall result in voiding any permit issued on the altered or modified form and subject the operator to cease and desist orders and civil penalties for operating without a permit pursuant to section 34-32.5-123, C.R.S.

Signed and dated this 5th day of June, 2025.

QB Energy Operating, LLC
Applicant/Operator or Company Name

If Corporation Attest (Seal)

Signed: _____

Title: Ed Seymour, Land Manager

Signed: _____
Corporate Secretary or Equivalent
Town/City/County Clerk

State of Colorado)
) ss.
County of Garfield)

The foregoing instrument was acknowledged before me this 5th day of June, 2025, by Ed Seymour as Land Manager of QB Energy Operating, LLC

MAKAYLA M. GRANT
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20174035954
MY COMMISSION EXPIRES 08/11/2026

Makayla M. Grant
Notary Public

My Commission expires: 08/11/2026

SIGNATURES MUST BE IN BLUE INK

You must post sufficient Notices at the location of the proposed mine site to clearly identify the site as the location of a

Exhibit A
Legal Description

The site is located in unincorporated Garfield County, Colorado approximately 6 miles north-west of the Town of Parachute and 14 miles north-east of the Town of De Beque.

The property is described as:

A parcel of land as described at Reception number 870936 as Exhibit A therein.

26,442 Acres more or less.

The affected areas are located at:

Southeast quarter of Section 17 and the southwest quarter of Section 16, Township 5 South, Range 96 West of the 6th Principal Meridian, County of Garfield, State of Colorado.

The existing and proposed main entrance to the mine site is located at:

Latitude – (39.614935°) & Longitude – (-108.182085°)

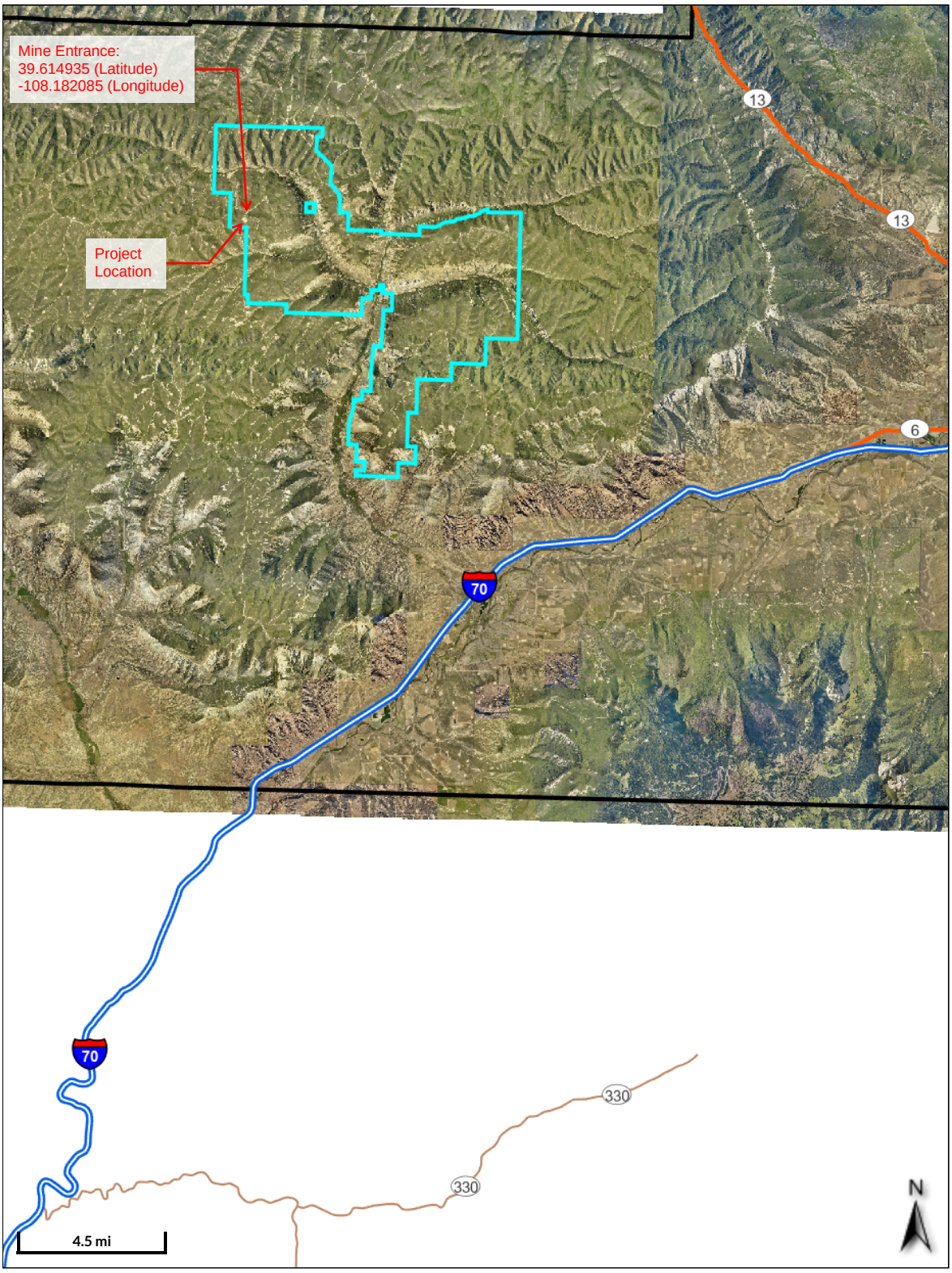
The street address of the property is:

NA, Garfield County, Colorado.

Parcel number: 213527300015

Exhibit A-1 Location Map

qPublic.net™ Garfield County, CO



Legend

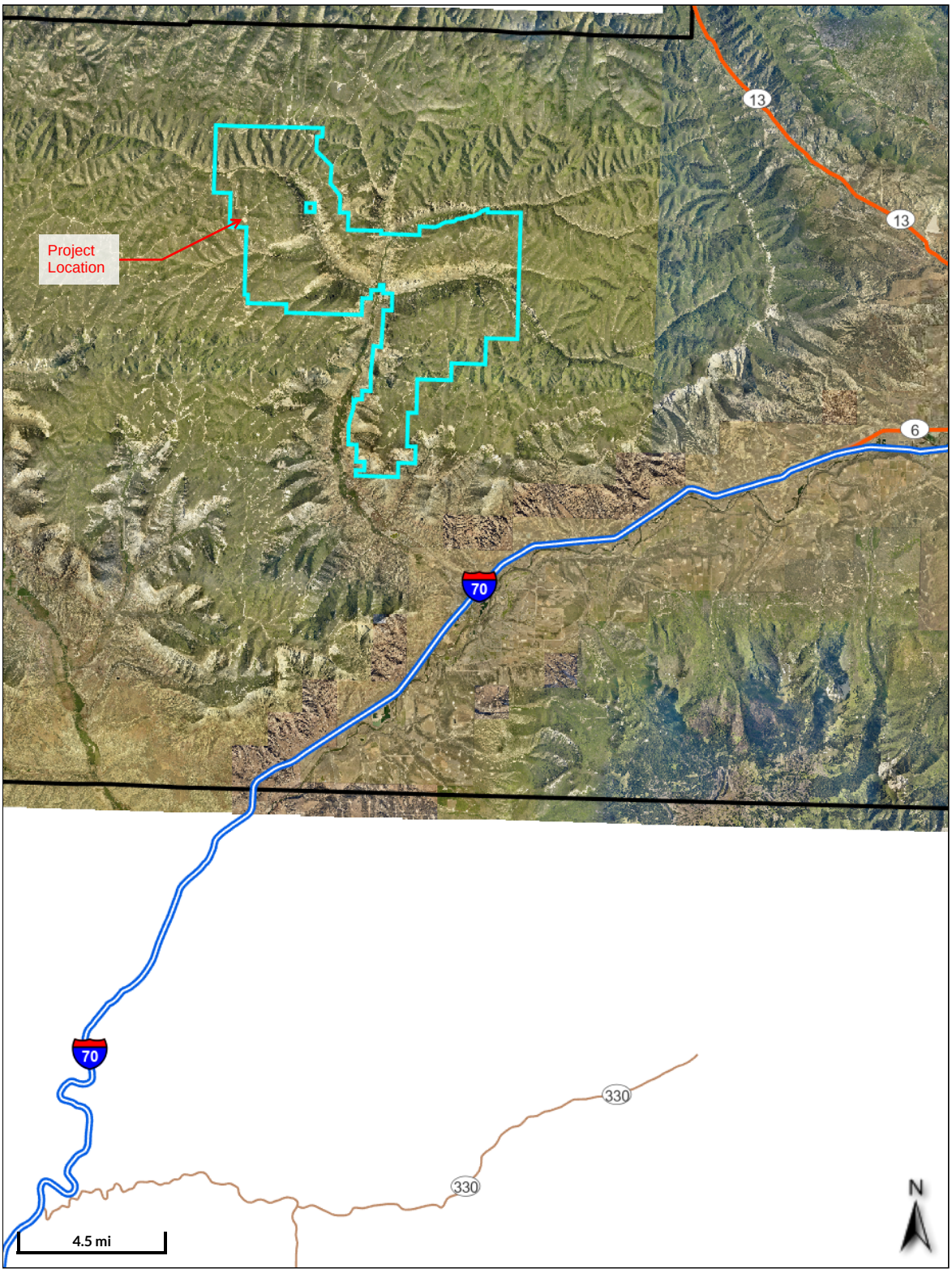
Highways

- Limited Access
- Highway
- Major Road
- Local Road
- Minor Road
- Other Road
- Ramp
- Ferry
- Pedestrian Way

County Boundary Line

qPublic.net™ Garfield County, CO

Exhibit B - Index Map



Legend

Highways

- Limited Access
- Highway
- Major Road
- Local Road
- Minor Road
- Other Road
- Ramp
- Ferry
- Pedestrian Way

County Boundary Line

Exhibit C
Pre-Mining/Mining Plan and Maps of Affected Land

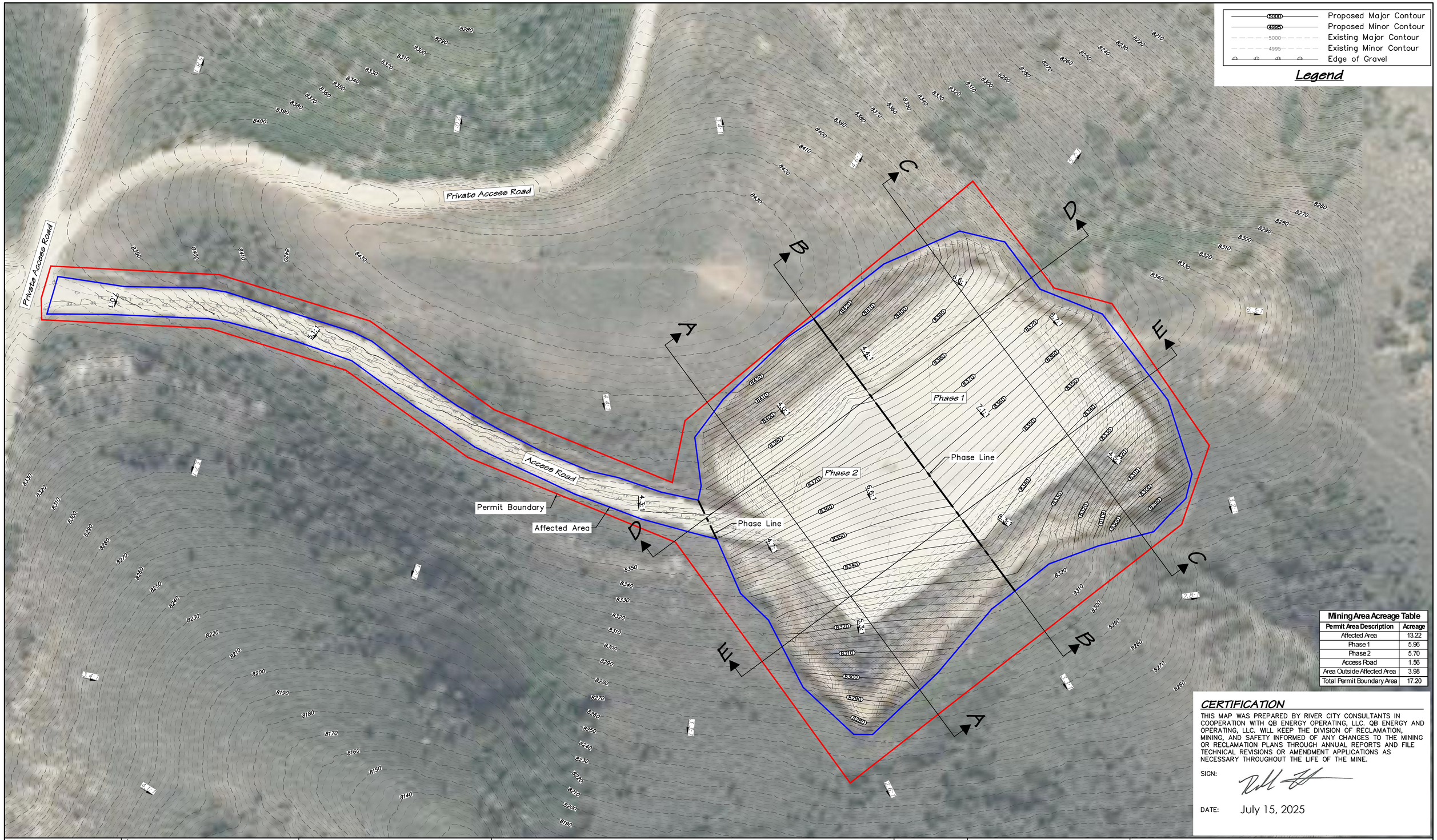
Exhibit C-1 shows the pre-mine and mining conditions of the site with combined recent topographic mapping and boundary survey.

Exhibit C-2 shows the cross sections of the site, with original, mining, and post reclamation elevations of the mining area.

Exhibit C-3 shows a location map with the permit area and surrounding parcel boundary lines.

Exhibit C-4 shows the permit area with existing conditions and elevations. There are no existing structures.

Exhibit C-5 is a Vegetation Map of the site.



Mining Area Acreage Table	
Permit Area Description	Acreage
Affected Area	13.22
Phase 1	5.96
Phase 2	5.70
Access Road	1.56
Area Outside Affected Area	3.98
Total Permit Boundary Area	17.20

CERTIFICATION

THIS MAP WAS PREPARED BY RIVER CITY CONSULTANTS IN COOPERATION WITH QB ENERGY OPERATING, LLC. QB ENERGY AND OPERATING, LLC. WILL KEEP THE DIVISION OF RECLAMATION, MINING, AND SAFETY INFORMED OF ANY CHANGES TO THE MINING OR RECLAMATION PLANS THROUGH ANNUAL REPORTS AND FILE TECHNICAL REVISIONS OR AMENDMENT APPLICATIONS AS NECESSARY THROUGHOUT THE LIFE OF THE MINE.

SIGN:

DATE: July 15, 2025

UNCC Utility Notification Center of Colorado 800.922.1987 www.uncc.org — 811 Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

Project Benchmark
TBD

NORTHING: –
EASTING: –
ELEVATION: –
DATUM SOURCE: MCLCS Zone "GVA" (NAVD 88)

SCALE (FEET)
0 80 160
HORIZONTAL
VERTICAL: N/A
CONTOUR INTERVAL: 1 FT

PROJECT PHASE: Issued for Construction DATE ISSUED: 15.Jul.2025

NO.	DATE	REVISION	BY

S:\PROJECTS\1770 Coerus Oil & Gas\034 P17 Rock Quarry Permit\Design\DWG\03-Model\1770-034 Model.dwg [1 of 2] 7/15/2025 2:27:51 PM

RIVER CITY CONSULTANTS
215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501
Phone: 970.241.4722
www.rccwest.com
Fax: 970.241.8841

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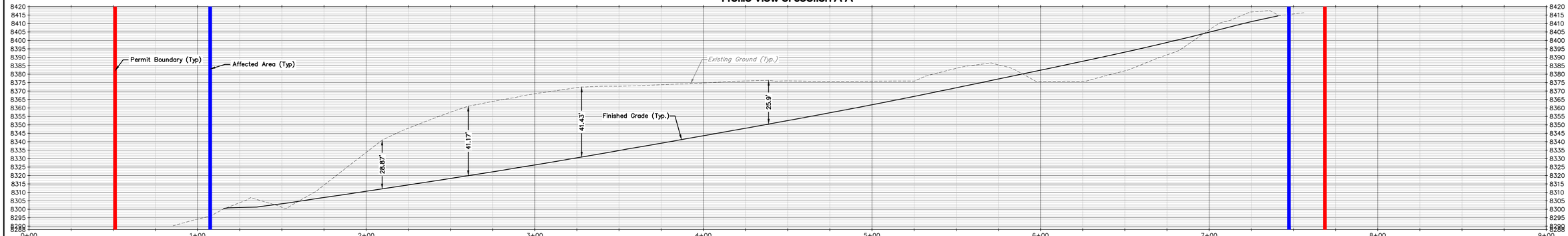
QB Energy and Operating LLC

Jackrabbit Gravel Quarry

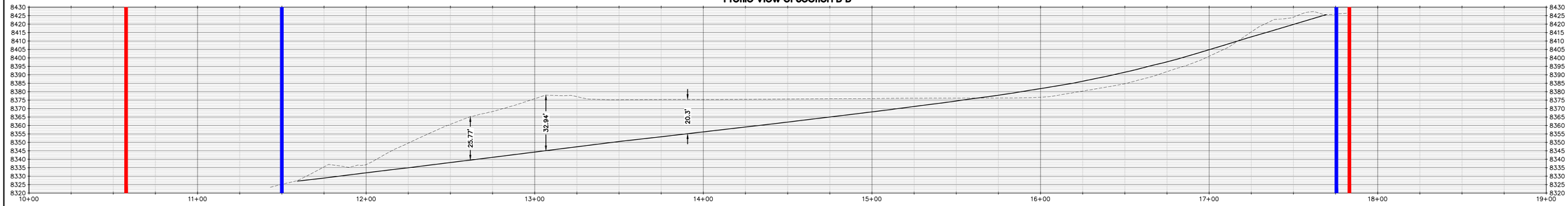
Exhibit C – Pre Mining & Mining Plan
Mining Plan & Cross-Sections

C1

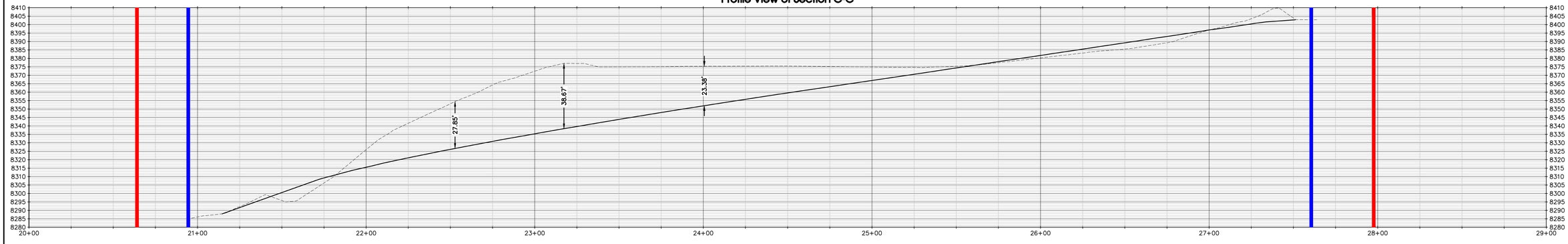
Profile View of Section A-A



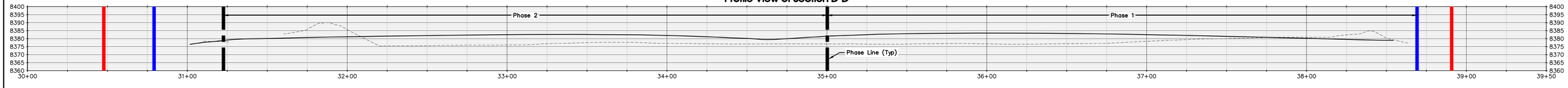
Profile View of Section B-B



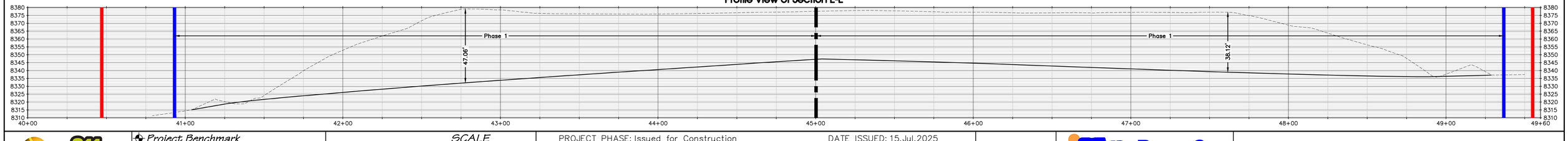
Profile View of Section C-C



Profile View of Section D-D



Profile View of Section E-E



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Project Benchmark
TBD

NORTHING: –
EASTING: –
ELEVATION: –
DATUM SOURCE: MCLCS Zone "GVA" (NAVD 88)

SCALE (FEET)
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HORIZONTAL
VERTICAL: 1" = 30'
CONTOUR INTERVAL: FT

PROJECT PHASE: Issued for Construction
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Jackrabbit Gravel Quarry

Exhibit C – Pre Mining & Mining Plan
Cross-Sections

C2

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Jackrabbit Gravel Quarry

Exhibit C – Pre Mining & Mining Plan
Location Map

C3

Mining Area Acreage Table	
Permit Area Description	Acreage
Affected Area	13.22
Phase 1	5.96
Phase 2	5.70
Access Road	1.56
Area Outside Affected Area	3.98
Total Permit Boundary Area	17.20

Mine Permit Boundary

Private Access Road

Private Access Road

Access Road

Phase Line (Typ)

Phase 1

Phase 2

Affected Area

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ELEVATION: –
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HORIZONTAL

VERTICAL: N/A

CONTOUR INTERVAL: 1 FT

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Jackrabbit Gravel Quarry

Exhibit C – Pre Mining & Mining Plan
Existing Conditions

C4

Vegetation & Topography

All species are present between elevations 8,400 ft and 8,275 ft.

Grass/Grasslike: ★
Slender Wheatgrass
Western Wheatgrass
Nodding Brome
Indian Ricegrass
Mountain Brome
Arizona Fescue
Thurber's Fescue

Forbs: ●
Arrowleaf Balsamroot
White Sagebrush
Yellow Salsify
Hoary Cress
Yellow Alyssum

Shrubs: ▲
Gambel Oak
Black Sagebrush
Wood's Rose

** Location of vegetation is approximate and estimated according to the frequency they are found on site.

LEGEND

- Existing Major Contour
- Existing Minor Contour
- Mine Permit Boundary
- Affected Area

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Project Benchmark
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EASTING: –
ELEVATION: –
DATUM SOURCE: MCLCS Zone "GVA" (NAVD 88)

SCALE (FEET)
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HORIZONTAL
VERTICAL: N/A
CONTOUR INTERVAL: 1 FT

PROJECT PHASE: Issued for Construction DATE ISSUED: 15.Jul.2025

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Jackrabbit Gravel Quarry

Exhibit C – Pre Mining & Mining Plan
Vegetation Map

C5

Exhibit D
Mining Plan

1. General Mining Plan

The Jackrabbit Gravel Quarry was constructed in the spring of 2019 along with improvements to the access road. This was originally permitted and constructed as an oil and gas well pad through Colorado Energy and Carbon Management Commission. All drilling permits were abandoned in 2023. Given the location of the pad and the amount of material that was processed from the existing embankment, it is in the best interest to utilize this material for road maintenance and future pad construction in the adjacent areas. Therefore, this pad will be mined in two phases anticipated over the next 20 years for the purposes described above.

Primary access to the site is off an existing oil and gas operations road and along the improved access road that was completed as part of the pad construction. The road is separate from phase 1 and 2 but will ultimately be reclaimed once mining operations are completed. This can be seen in Exhibit C – Pre Mining & Mining Plan Map (Sheet C1).

During previous construction operations, 6,860 cubic yards of topsoil was stripped from the well pad disturbance and stockpiled around the perimeter. The topsoil stockpiles were seeded with perennial grasses in 2019 and again in 2021 for long-term stabilization. These stockpiles will not be disturbed during mining operations and will be maintained for use during final reclamation.

The estimated material to be salvaged from the site is approximately 196,789.36 cubic yards of material. Approximately 75,000 cubic yards of fractured sandstone is within the existing pad. The sandstone will be processed into structural surface material using screens and a crusher to supply material for road maintenance and future construction of pads. The remaining material is finer material that can be repurposed and used immediately for the same purposes. The material that will be utilized on this site is apart of the Uinta Formation, which is a terrestrial stratum. This is a very deep deposit stratum which is continuous immediately beneath the material to be mined.

This site is proposed to be completed in two separate phases of similar size. Since this project is to last approximately 20 years, this will allow for completion and final reclamation sooner for half the site. It also allows for no impact to existing ground or vegetation adjacent to the already affected areas.

Phase 1, located on the south and southeast of the permit area consisting of 5.96 acres. This phase will produce 89,106.85 cubic yards of material to be extracted throughout the during of mining operations. This is the larger of two phases meaning there will be no more than 5.96 acres under operations at any given time. The phase line between 1 & 2 will consist of a 1V:1H slope prior to switching operations to phase 2. Once phase one is complete, the operator will complete all reclamation efforts following the guidelines outlined in Exhibit E.

Phase 2, located on the north and northwest side of the permit area, is the remaining portion of the existing pad at 5.70 acres. Phase 2 will produce 107,682.51 cubic yards resulting in a combined 196,789.36 cubic yards of material to be extracted from the mine.

being mined. There will be times throughout the mining phase that the staging area may move. A Gladiator TP320SR Crusher will be used onsite, which is a mobile crusher that can be pulled onsite when needed throughout the duration of the mining operation. The screen will be utilized for material that can be used immediately without the need for a crusher. Excavator and loader will be the primary use of moving material in each phase from extraction to either loading trucks or the crusher and screening material. A dozer may be utilized to help move material or loosen existing compacted materials. A motor grader will be used for maintaining the access road and finish grading of each phase during the mining operations and preparing for reclamation activities. Since the pad has already been constructed and the material to be extracted has already been loosened and worked, there will be no use of explosives to extract material.

The post-mined land use is rangeland. QB owns and operates a guiding business for taking hunters each year as well as allowing livestock to roam rangeland in the summer months. The property will remain as agricultural, wildlife, and oil and gas operations since QB has permitted oil and gas operations commencing on the property. The specific area to be mined will not be developed as oil and gas operations and will only continue with future land use of agricultural/wildlife.

Table C-1

Permit Area Description	Acreage
1. Phase 1	5.96
2. Phase 2	5.70
3. Access Road	1.56
4. Area Outside Affected Area	3.98
Total Permit Area	**17.20**

1. Mining Timetables

The following timetables are a best estimate of sequence of operations for the life of the mine and the two phases associated. An estimated quantity is approximately 8,000-11,000 cubic yards of material will be mined and utilized each year. Due to mother nature and possible unexpected events that could happen and require material for rebuilding roads or maintenance in general, it could require more to be mined in those certain years. Also, given the use of this material is for road maintenance and development projects in the oil gas operations (i.e. building other oil and gas pads), this could increase the need for more material as well. Ultimately, this would shorten the life of the mine but would increase the activities to be completed such as reclamation.

The following mining timetable is based on a reasonable projection of average production rates.

Phase	Mining/Time	Reclamation Time
1	Begin 2024 – 2034 (10 years)	Ongoing
2	Begin 2034 – 2044 (10 years)	Ongoing

The expected life of this operation is approximately 20 years, depending on year-to-year conditions.

Table D-2

Task	Description	Time Needed (months)	
1	Bring in all equipment	0.5	
2	Mining Phase 1	118	
3	Reclamation Phase 1	1	
4	Mining Phase 2	118	
5	Remove all mining equipment	.5	
6	Reclamation Phase 2	1	
7	Reclamation Access Road	1	
		240	**Months**
		20	**Years**

2. Intended Use of Mined Material

The intended use of material from this mining operation will be for road maintenance and supplying oil and gas operational development. Development will include building pads and/or other reclamation activities required for projects in the adjacent vicinity that QB deems economical and reasonable for use. Since development projects and road maintenance is a year-round obligation, material may be stockpiled as a reserve when needed. This stockpile will be located onsite and within the current phase of mining.

3. Topsoil and Overburden Handling

As mentioned above, the topsoil that was stripped as part of the original pad permit and stockpiled on the perimeter of the site, will be protected in place during the mining operation and used for reclamation purposes when mining is completed for each phase. The placement of topsoil will commence once mining operation is completed, and the existing ground is finished graded as shown in the mining plan. This will need to be completed to blend the proposed contours of the disturbance to the existing contours surrounding the site.

This mine is unique, given there will be no overburden, and all material mined from this site will be used for its designated purpose. Meaning, there will be no striping or stockpiling of unwanted or material to be used later as all material to be mined until finish grade will either be used as-is or be processed through screens and a crusher.

4. Schedule of Operations

The mine will be active year-round but will likely not see much activity for long periods throughout the year. It is largely dependent on the operator's project list. Year-to-year maintenance will certainly occur but may only require a few months' worth of work and material processing to complete what projects they have. All wildlife activity will be taken into consideration as well as hunting season.

5. Water Information, Rights, and Augmentation

Stormwater in existing conditions follow existing berms and into stormwater collection basins (SCB's) prior to discharging into the historical path. Given the circumstances of this project, the berms and sediment control measures will remain until reclamation activities occur for each phase. Therefore, the stormwater will remain as-is during all mining operations and once reclamation commences and seeding is completed, runoff will then follow the historical drainage pathway prior to the pad being constructed.

All water issues such as availability of water for this operation, consumption rates, dust control, etc. are presented in Exhibit G – Water Information.

Exhibit E
Reclamation Plan

The site will be reclaimed to rangeland. Exhibit F Reclamation Plan Map shows the permit area with final site grading.

General Information

Given the unique situation of this site, the entirety of phase 1, 2, and access road is currently not reclaimed because the pad was built with the intention of being developed. Although the access road and pad are not vegetated, the edge of the access road, stormwater berms, and topsoil stockpiles have been seeded and revegetated.

When the pad was built, all topsoil was striped and stockpiled on the perimeter of the pad. Following the conclusion of mining operations, any hard edges on the cut slopes and take-areas will be rounded, available spoil material will be spread to blend the landform with the surrounding area and the topsoil will be redistributed across the surface to pre-disturbance depths, which is approximately 1-4 inches. Seeding will be completed per the methods outlined below.

There is no plan to construct any structures as part of this mining operation and there are no existing structures onsite. All equipment that will be used during mining will be portable equipment and will likely be moved on and offsite as needed. Therefore, as part of reclamation, all equipment will be moved from phase to phase and eventually completely removed from the site once mining is completed.

No explosives will be used during mining and reclamation activities.

Reclamation Sequence and Schedule

As discussed in the Exhibit D Mining Plan, mining will be progressed through phases across the site, working from the south to the north towards the access point. This will allow for reclamation to be completed without the need for future disturbance. There will be a temporary 1V:1H slope between phase 1 and 2 that will eventually be graded to the finish grade shown in the final reclamation plan map. The finished grading will be completed by a motor grader and tractor with a rome disc. This will prevent any compaction and maintain loose soil for a greater chance of seeding success. The edge of the affected area will connect to existing grades with no additional disturbance to existing conditions.

The timetable for reclamation activities is included in Table E-1.

Table E-1

Task	Description	Time Needed (months)	
1	Begin phase 1 reclamation (Grading)	0.5	
2	Decompaction (Rome Disc & Tractor)	0.25	
3	Drill Seeding Phase 1	0.25	
4	Begin Phase 2 & Access Road Reclamation	0.75	
5	Decompaction (Rome Disc & Tractor)	0.25	
6	Drill Seeding Phase 2 and Access Road	0.25	
7	Release Areas (Dependent on Success)	N/A	
		2.25	**Months**
		0.19	**Years**

Seeding

Seeding operations will be scheduled to occur in early April or October. The method of seeding for this site is drill seeding given the ability to get equipment onsite with the final grades not being steeper than 3H:1V. The seed mix used for this site reclamation should consist of the following.

Species	**PLS Rate/Acre (Drilled)**
Grasses	
Indian ricegrass (Native)	2
Mountain Brome (Native)	2
Bluebunch Wheatgrass (Native)	1
Western Wheatgrass (Native)	1
Meadow Brome	1
Crested Wheatgrass	1
Perineal Ryegrass	1
Forbs	
Western Yarrow (Native)	1
Lewis Blue Flax (Native)	1
Sulphur Buckwheat (Native)	1
Small Burnett	4
Cicer Milkvetch (Legume)	4
Alfalfa, Ladak or Ranger (Legume)	2
Sainfoin	2
Hary Vetch	3
Shrubs	
Antelope bitter-brush	1

Haul Roads and Access

It is planned that the current access to the pad will be utilized as the main access and haul route out of the mine for the duration of the mining operation.

Post-Reclamation Site Drainage

After mining and reclamation, the drainage of the entire site will remain consistent with the existing conditions prior to the pad being constructed. There will be no concentrated flow across the site and will remain as sheet flow which is consistent with the existing topography surrounding the site.

Weed Control

Measures will be employed for control of any noxious weed species. A Weed Control Plan will be utilized as follows:

1) One to four times per growing season, a weed survey will be conducted of the permit area.

2) If any patches or plants are identified, they will be sprayed by backpack sprayer using chemicals. An outline of the chemicals can be seen below.

3) After reclamation, weed surveys and spraying will continue until the perennial cover and production of the site have met DRMS requirements and bond release has been obtained.

QB utilizes both pre-emergent and post-emergent chemical treatments for the control of non-listed and noxious weed species. Chemical means of weed control are the most commonly utilized weed management technique. The frequency of this treatment method is mostly attributed to the financial feasibility, speed and relative consistency in results associated with herbicide applications. In general, most QB sites are inventoried, monitored and sprayed a minimum of 1-4 times per year, based upon the accessibility and known infestation status of the site. With every visit, commercial pesticide applicators monitor previous treatments for effectiveness, inventory for new or surviving plants, and treat the site. Documentation of this event is recorded into QB' data management system (ACTS) as reported on contractor invoices and daily pesticide application records (PARs).

For all chemical treatments within reclamation areas, care is taken to prevent degradation of desirable plant communities. Only spot-specific herbicide treatments are deployed, with both non-selective and selective herbicides, to treat weed species within areas where desirable broadleaf forbs and shrubs are present or have been seeded. Spot treatments using a backpack sprayer are often necessary to ensure accuracy of chemical application and prevent potential unintended impacts from overspray and vehicle travel. For early-stage reclamation areas (within growing season one and two), chemical treatments are only deployed when weed species are present that cannot be adequately treated via mechanical methods (perennial/biennial weeds, low rowing/prostrate weeds). Backpack spot treatments are used in early-stage reclamation areas to prevent damage to desirable vegetation in the germination and early establishment phases, where all plants are susceptive to chemical treatment.

Broadcast methods with selective herbicides may be used in pasturelands with established grass communities where weeds are interspersed throughout the treatment area. Any chemical treatment within actively grazed pasturelands is coordinated with the surface owner or tenant rancher. Deployed chemicals are based upon grazing restrictions and product labels.

The first site visit and herbicide application is done in the early spring of the approaching growing season or in the fall of the previous year. Non-selective, residual herbicide is applied on compacted working surfaces around equipment, at a minimum, as a safety precaution on active sites. This treatment type also prevents the prevalence and spread of annual weed infestations that are commonly observed on fresh and frequently disturbed sites. During this treatment, pesticide applicators inspect the location and surrounding areas for newly emerging weeds, or rosette “flushes” for sites treated in the fall.

The second site visit and treatment is done in spring to early summer. This post-emergent treatment is intended to target early perennials (hoary cress, Canada thistle, etc.), biennial rosettes, and annual “obnoxious weeds” such as Russian thistle and kochia. Again, pesticide applicators will inventory the area for later maturing plant species such as Russian knapweed.

During the third site visit, herbicide efficacy is monitored, and a mid-late summer inventory is conducted with intentions to spray late-bolting biennials and budding perennials; furthermore, mechanical removal of flowers and seed heads on biennial species (most commonly musk thistle) may also be done around this time

Lastly, on many sites, a late-summer to fall herbicide treatment may be applied on creeping perennials such as Canada thistle and Russian knapweed in order to best capture the opportunity to kill root systems through the use of translocated herbicides. Following this step, the non-selective, pre-emergent treatments described above will be used where applicable, and the cycle will start again. This treatment plan is highly site-dependent; thus variations inevitably occur based upon individual site characteristics (i.e. time since seeding, elevation, soils, topography, moisture, etc.) and upon the various label requirements and recommended target growth stages of the herbicides being used.

The plan does not contemplate total weed removal on the property. Past experience shows that some initial weed cover in the first year following addition of new topsoil is beneficial to reclamation efforts in any dry range site. Weeds tend to provide shade for new grasses, are a means of holding snow on the seedbed longer, and protect it from wind and water erosion until the planted species have taken hold.

Monitoring Reclamation Success

Monitoring the reclamation on an ongoing basis will help ensure successful reclamation. The operator will frequently travel in the surrounding area of the site which will allow for monitoring. If minor changes or modifications are needed to the seeding and reclamation plan based on the monitoring, revision plans will be submitted to DRMS.

Reclamation Performance Standards

The applicant shall refer to rule 3.1 of the mineral rules and regulations for the extraction of construction materials regarding reclamation and post mining use. Throughout the entirety of the reclamation plan as well as the mining plan, these rules are incorporated. These rules shall be referred to prior to a request for release once reclamation activities are completed.

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DATUM SOURCE: MCLCS Zone "GVA" (NAVD 88)

SCALE (FEET)
0 80 160
HORIZONTAL
VERTICAL: N/A
CONTOUR INTERVAL: 1 FT

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QB Energy and Operating LLC

Jackrabbit Gravel Quarry

Exhibit F – Reclamation Plan Map

F1

Exhibit G
Water Information

The pre-mine site consists of an existing flat pad, access road, and slopes along the edges consisting of approximately 3:1. The existing surrounding landscape consists of rolling rangeland hills, which the final grade blends to mimic/match to existing topography. The operation is not expected to directly affect groundwater systems. No known aquifers exist within the permit area and groundwater pumping or dewatering is not anticipated.

1. Surface Water General Discussion

   The pre-mine site consists of an existing flat pad, access road, and slopes along the edges consisting of 3:1. Surface runoff currently drains to the outer edges where existing berms are constructed to collect runoff and direct to stormwater collection basins prior to discharging to historical drainage paths. Any drainage from offsite, will be redirected around the existing pad with the use of existing berms constructed as part of the original pad development. The perimeter of the pad consists of berms and topsoil stockpiles that have since been seeded and revegetated, which creates stable conditions for rerouting concentrated flows.

2. Hydrology and Sediment Control for Mining

   No major streams or intermittent streams intersect the disturbed areas. As the permit area is uplands hills above groundwater, no groundwater pumping or dewatering will be required. Sediment control for the permit area is provided by a berm that has been constructed at the lower edge of the mining area, preventing soil transport and promoting sedimentation prior to discharge.

3. Groundwater

   No known aquifers exist within the permit area. Groundwater pumping will not be needed for mining of this property.

4. Water Consumption for the Operation and Water Rights Issues

   As the operation will not expose groundwater, evaporative losses will be negligible.

   Water will be imported and dispersed through operations for the use of dust control. No water will be stored onsite, only hauled in with a water truck. This water will be hauled in from West Fork Parachute Creek, which the operator has water rights in place. The water rights are outlined in Case Number 2010CW175.

Exhibit H
Wildlife Information

The permit area is an existing pad surrounded by rangeland. The Colorado River is approximately 14 miles to the south of the Jackrabbit Gravel Quarry site.

Exhibit H-1: River City Consultants Inc. performed an Environmental Evaluation of the property.
Exhibit H-2: Colorado Parks and Wildlife reviewed the application and supplied a Wildlife Evaluation letter with recommendations for the project.

Jackrabbit Gravel Quarry
Environmental Assessment Report

SESE Sec 17 TS5 R96W

Lat. 39.611066 Long. -108.183965

Garfield County, Colorado

March 5, 2025

Prepared for:
QB Energy Operating, LLC
143 Diamond Avenue
Parachute, CO 81635

Prepared By:

RIVERCITY CONSULTANTS
215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

Introduction

QB Energy requested that River City Consultants, Inc. conduct an environmental habitat assessment and evaluation for their proposed project that consists of permitting an existing pad, which was constructed in 2019, through DRMS.

The project site is located in Garfield County, Colorado, at the latitude and longitude location of: Lat 39.611066 Long -108.183965.

The pad was constructed along with improvements to the access road in the spring of 2019. After the pad was constructed, the company decided that development operations would be moved elsewhere which resulted in no installation of infrastructure on the pad. Since this pad is in a central location and has a large amount of material that was processed from the existing embankment, it is the company's best interest to utilize this material for road maintenance and future pad constructions in adjacent areas.

The project will be mined in two phases over the next 20 years. The proposed mining area does not include any topsoil as it was previously stripped and placed along outer areas of the original pad and has been seeded and re-vegetated. The estimated material to be mined from the site includes approximately 196,789.36 cubic yards. Approximately 75,000 cubic yards of fractured sandstone are within the existing pad. Sandstone will be processed into structural surface material for road maintenance and future pad construction. The resto f the material is finer material that can be repurposed and used for the same purposes. Phase 1 is located on the south and southeast side of the permit area and consists of 5.96 acres. Phase 2 is located on the north and northwest side of the permit area and consists of 5.70 acres. The access road is separate from phases 1 & 2 but will ultimately be reclaimed once mining operations are completed.

River City Consultants conducted a site visit on May 28th, 2024. The entire project area was observed. The purpose of the evaluation was to identify and document areas of suitable habitat for federally listed threatened, endangered, and candidate wildlife species, and potential impacts from the proposed development.

Site Description

The project site is located on the north side of the Colorado River, approximately 13.16 miles from Interstate 70 and Parachute, see Appendix A for a Location Map. The project site is relatively flat, slightly sloping from northeast to southwest at elevations from 8,427 – 8,280 feet above sea level. The project site is vacant of any structures, vehicles, or storage of any materials.

Soils

The project site consists of two soil types; Parachute-Irigul complex (47%) and Parachute-Irigul-Rhone association (53%). According to the NRCS Soil Survey data Parachute-Irigul is classified as Hydrologic Group C, and Parachute-Irigul-Rhone association is classified as Hydrologic Group D. Hydrologic groups are based on estimates of runoff potential. Hydrologic Group C and D soils have

a slow infiltration rate when thoroughly wet and have a slow rate of water transmission. The Whole K factor for the site is 0.20. The K factor indicates the susceptibility of soil to sheet and rill erosion by water. K values range from 0.02 to 0.69, and other factors being equal, the higher the K factor value, the more susceptible the soil is to sheet and rill erosion by water. NRCS Soil information for the site is provided in Appendix B.

Table 1: Soil Types within the Project Area

Map Unit Symbol	Soil Series	Soil Unit Description
55	Parachute-Irigul complex, 5 to 30 percent slopes	The Parachute series consists of moderately deep, well drained soils formed in material derived from sandstone or basalt. Parachute soils are on upland ridges and mountainsides. Slopes range from 3 to 75 percent.
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	The Parachute series consists of moderately deep, well drained soils formed in material derived from sandstone or basalt. Parachute soils are on upland ridges and mountainsides. Slopes range from 3 to 75 percent.

Vegetation

The project site is an existing pad with access road, so there is currently no vegetation on site. The perimeter of the road and pad consist of several species of grasses, forbs, and shrubs. ranges from a height of approximately 3 feet tall and below. The tallest species found on site are Gambel Oak, Woods' Rose, and Black Sagebrush. The understory species range from approximately 2 feet and below. Most of the site is covered with Slender and Western Wheatgrass, along with other scattered forbs, grasses and bushes cover the entire perimeter of the site. There was no wetland species observed on site. See Appendix C for Site Visit Photos.

Table 2: Common Plant Species Occurring within the Project Area

Common Name	Scientific Name	Abundance*
Grasses		
Slender Wheatgrass	*Elymus trachycaulus*	***High
Western Wheatgrass	*Pascopyrum smithii*	***High
Nodding Brome	*Bromus anomalus*	**Moderate
Indian Ricegrass	*Achnatherum hymenoides*	*Low
Mountain Brome	*Bromus marginatus*	**Moderate

Forbs		
Arizona Fescue	*Festuca arizonica*	*Low
Thurber's Fescue	*Festuca thurberi*	*Low
Arrowleaf Balsamroot	*Balsamorhiza sagittata*	**Moderate
White Sagebrush	*Artemisia ludoviciana ssp. candicans*	*Low
Yellow Salsify	*Tragopogon dubius*	*Low
Hoary Cress	*Lepidium draba*	**Moderate
Yellow Alyssum	*Alyssum simplex*	**Moderate
Shrubs		
Gambel Oak	*Quercus gambelii*	*Low
Black Sagebrush	*Artemisia nova*	**Moderate
Woods' rose	*Rosa woodsii*	*Low
*Abundance: * = Infrequent; only a small number of individuals noted within project area. ** = Moderate Frequency; occurrence scattered throughout project area. *** = High Frequency; with uniform distribution across project area.		

Current and Historical Land Use

The project site is within Garfield County and is vacant land, with the existing pad and access road. In reviewing past aerial photography from Google Earth Pro (Appendix D), it appears that the site has been vacant of any disturbance between the years of 1985 and 2019 before the pad was constructed. In the 1990's there began to be roads constructed around the project area, and in the early 2000's other pads are being constructed. No changes were noticed from the 2019 photos to present day aerial photos.

The land has historically been and currently is considered rangeland and wildlife habitat and will remain so post-mining. QB Energy owns and operates a guiding business for taking hunters on tours, as well as allowing livestock to roam rangeland in the summer months. The specific area to be mined will not be developed into an oil and gas operation and will only continue with the future land use of agricultural/wildlife after the reclamation of the site is complete.

Wildlife Resources

The USFWS Endangered Species Act-listed animal species for the proposed project site were reviewed and are listed below in Table 3. Some of these species may occur in the project area, though none of which were identified during the site visit. The purpose of the environmental evaluation at the proposed project site was to analyze the habitat suitability for each of the species that may potentially occur in the project area and rationalize the findings.

Table 3: Federally Listed Threatened, Endangered, and Candidate Species in Mesa County, Colorado and their Status in the Project Area

Common Name	*Scientific Name*	Status	Habitat Association	Potential Habitat in Project Area
Mammals				
Gray Wolf	*Canis lupus*	Endangered	Can be found in a wide range of habitats including temperate forests, mountains, tundra, taiga, and grasslands.	May occur in project area since species is known to be present in northern Colorado.
Birds				
Mexican Spotted Owl	*Strix occidentalize lucida*	Threatened	Typically found in old-growth mature forests with complex components such as aged stands, high canopy cover with multi-storied levels and high tree density.	The project area where activity will occur is in existing condition and is vacant. The surrounding landscape may be habitable for this species, but none were seen or known to be living in this area.
Fish				
Bonytail	*Gila elegans*	Endangered	Designated "Critical Habitat" exists downstream below the Black Rocks in the Colorado River.	No habitat suitable for this species is located within or adjacent to the project area.
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered	Designated "Critical Habitat" exists downstream in the Colorado River.	No habitat suitable for this species is located within or adjacent to the project area.

Humpback Chub	*Gila cypha*	Threatened	Designated "Critical Habitat" exists downstream below the Black Rocks in the Colorado River.	No habitat suitable for this species is located within or adjacent to the project area.
Razorback Sucker	*Xyrauchen texanus*	Endangered	Designated "Critical Habitat" exists downstream in the Colorado River.	No habitat suitable for this species is located within or adjacent to the project area.
Insects				
Monarch Butterfly	*Danaus plexippus*	Candidate	Monarchs occur in rangelands, farms, riparian areas, deserts, prairies, meadows, and roadsides typically where milkweed plants are available. Monarchs rely on milkweed to lay their eggs and feed the larvae upon hatching. Monarchs occur throughout the western U.S. including Colorado.	No habitat suitable for this species is located within or adjacent to the project area. No milkweed plants were noticed during site visit to project area.
Silverspot	*Speyeria nokomis nokomis*	Threatened	Typically occurs in wet meadows supported by springs, seeps, streams, or irrigated pastures that contain the bog violet host plant for eggs and larvae along with other herbaceous vegetation for cover and food sources. Colony known to occur in Unaweep Canyon.	The project site is not suitable habitat for this species.

Suckley's Cuckoo Bumble Bee	*Bombus suckleyi*	Candidate	Occurs in a wide range of habitats. No specific Critical Habitat is known.	Unknown if species occurs in project area.
Flowering Plants				
Ute ladies'-tresses	*Spiranthes diluvialis*	Threatened	No Critical Habitat is known for this species, but is known or believed to occur in Colorado	Uknown if species occurs in project area. Species was not seen during site visit.

Table 4: Migratory Birds – USFWS Birds of Conservation Concern

Common Name	*Scientific Name*	Status
Bald Eagle	*Haliaeetus leucocephalus*	Non-BCC Vulnerable
Golden Eagle	*Aquila chrysaetos*	Non-BCC Vulnerable

USFWS Birds of Conservation Concern Status:

Non-BCC Vulnerable = This is not a Bird of Conservation Concern (BCC) in this area but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

BCC Rangewide (CON) = This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

BCC – BCR = This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.

Discussion

The project site does not appear to be a desirable or suitable habitat for most of the listed species in Table 3 above.

Monarch butterflies may be seen near the project site, but the habitat does not support the primary vegetation required for Monarch butterflies to survive. There was no milkweed plants noticed during the site visit within the permit area, or adjacent to it. There was no riparian habitat noticed near the permit area that would support this species.

All four fish species that are listed as either endangered or threatened are known to live in the Colorado River downstream of this project area. According to USFWS the project area does not overlap the critical habitat for any of the fish species. There is no direct contact with water sources near the permit area that could have any impact on these species, as the Colorado River is approximately 14 miles from the site.

There is a potential for Bald Eagles and Golden Eagles to frequent the area but are not likely to nest or breed near the permit area. They could potentially hunt for small rodents near the project site. Bald Eagles nest in large Cottonwood trees along the Colorado River, and hunt a variety of fish, small mammals, and other birds in moderately dense woodland and riparian habitats. The project site contains no Cottonwood trees on or adjacent to for Bald Eagles to nest in. No nests were seen within a quarter of a mile to the project area during the site visits. Since this area does not contain suitable vegetation for nesting or breeding, impacts to migratory birds or eagles would be negligible.

Other wildlife species that may be present in the area include Mule Deer and Elk who live in a variety of habitats, but mostly need scattered areas with moderate tree cover, as well as grasslands and open spaces to roam. This area is suitable habitat for these mammals, so consideration should be taken into account for all activities to remain within the permitted area not to disturb adjacent vegetation.

The Greater Sage-Grouse (*Centrocercus urophasianus*) is another species known in Colorado that may be present near the permit area. Sage-Grouse live in open shrublands that primarily contain Sagebrush. Sagebrush is a requirement for the critical habitat that Sage-Grouse need to survive. They consume Sagebrush leaves and nest near the bases of the shrub. Breeding and nesting season occurs typically in this area between Mid-March to Late-May. The permit area is an existing pad; therefore, all vegetation and topsoil have already been removed from the site. There is, however, scattered Sagebrush adjacent to the permit area, which could potentially be considered suitable habitat for this species to live, breed, and nest in. No Greater Sage-Grouse were seen during the site visit on or adjacent to the project site, but this cannot fully eliminate the presence of this species in the area.

Impacts and Mitigation

Critical habitat for the endangered and threatened fish species occurs downstream from this project area in the Colorado River. No direct impacts to the Colorado River fish species would occur as a result of the project area. This project site is approximately 14 miles away from the Colorado River, so the amount of disturbance and sedimentation directly leaving the site and entering the river is negligible.

Impacts on the Monarch butterflies are expected to be negligible since no milkweed plants or other flowering forbs were found on site during the site visits for this project area. Due to the distance from suitable habitat for this species, mining activity at this location should have no adverse impacts on Monarch butterflies.

Development at this site should have no adverse impacts on migratory birds, Bald Eagles, or Golden Eagles, since the project area does not contain suitable or desirable habitat for these species. There are no native trees present at the project site for nesting or breeding, and the vegetation that is present lacks density and diversity to be considered suitable habitat for these species.

References

CPW. 2024a. Colorado Parks and Wildlife, Species of Concern available online at:

https://cpw.state.co.us/threatened-and-endangered-wildlife

CPW. 2024b. CPW All Species Activity Mapping Data, available online at:

http://www.arcgis.com/home/item.html?id=190573c5aba643a0bc058e6f7f0510b7

CPW. 2025. Colorado Parks and Wildlife, Greater Sage-Grouse, About this Species, available online at:

https://cpw.state.co.us/species/greater-sage-grouse

Greater Sage-Grouse Conservation Plan, Parachute-Piceance-Roan, April 29, 200. Available online at:

https://cpw.widencollective.com/assets/share/asset/urmnpyfkx0

USFWS. 2024. U.S. Fish and Wildlife Service, Information for Planning and Consultation, available online at:

https://ipac.ecosphere.fws.gov/project/HHCXZQPVT5B33EC4IEORBSAKJ4/resources

Rapid Avian Information Locator, available online at:

https://data.pointblue.org/apps/rail/

USFWS. 2024. U.S. Fish and Wildlife Service, Migratory Birds, available online at:

https://www.fws.gov/program/migratory-birds/species

USFWS. 2024. U.S. Fish and Wildlife Service, Environmental Conservation Online System, Bald Eagle, available online at:

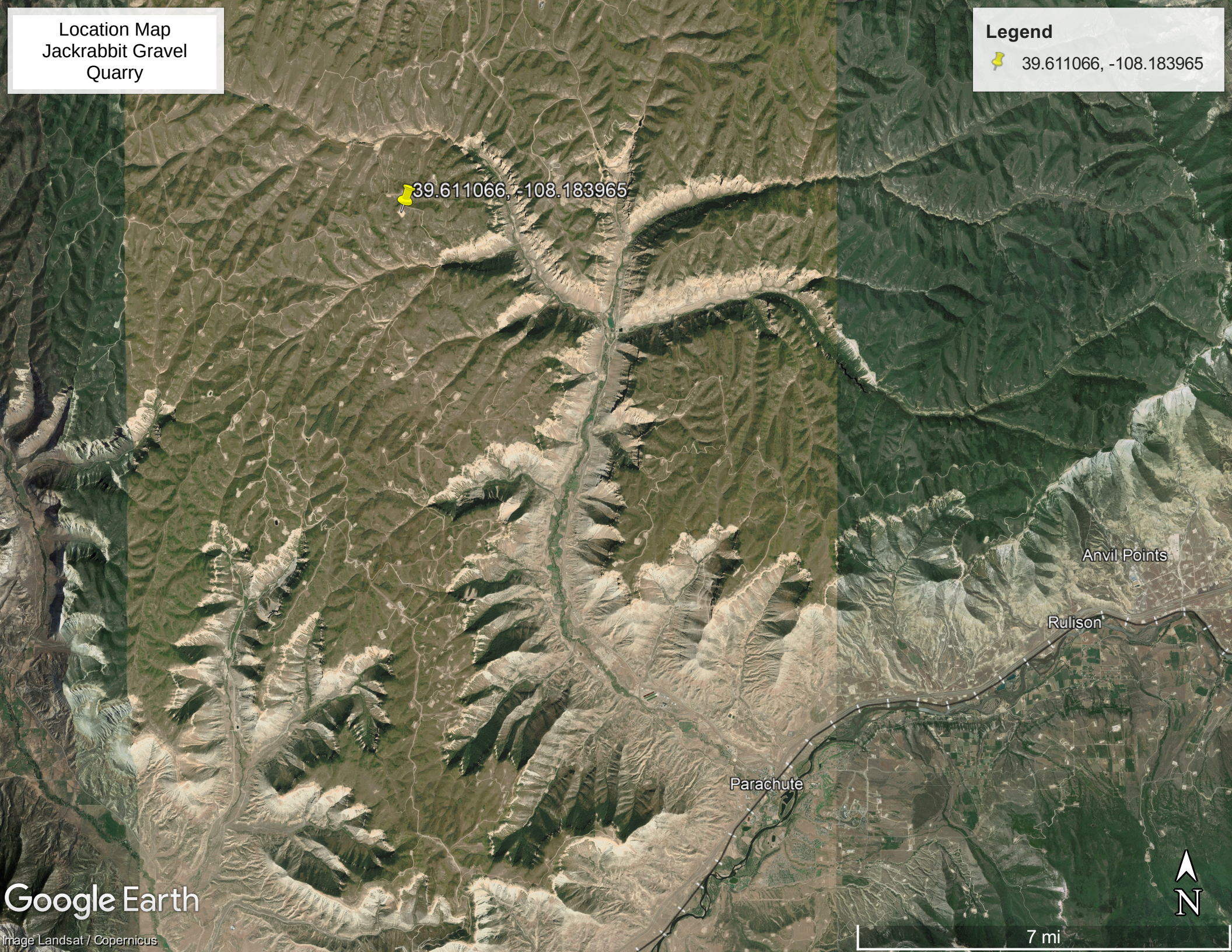
https://ecos.fws.gov/ecp/species/1626

NRCS. 2024. Natural Resources Conservation Service Web Soil Survey, available online at:

https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Appendix A

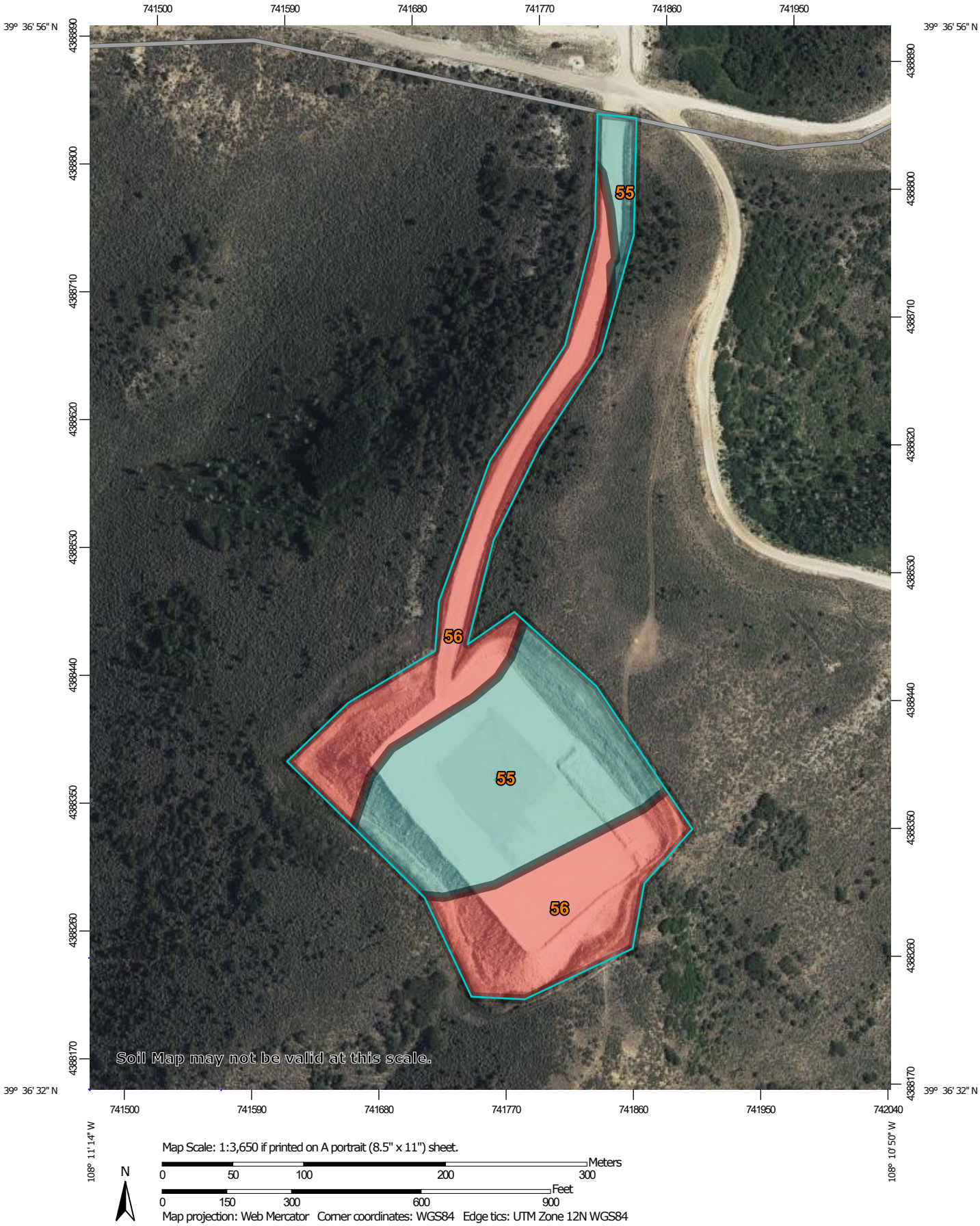
Location Map


Location Map
Jackrabbit Gravel
Quarry
Legend
39.611066, -108.183965
39.611066, -108.183965
Anvil Points
Rulison
Parachute
Google Earth
Image Landsat / Copernicus
N
7 mi

Appendix B

NRCS Soils Information

Hydrologic Soil Group—Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
(P17)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 17, Sep 6, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 24, 2020—Jul 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
55	Parachute-Irigul complex, 5 to 30 percent slopes	C	6.3	47.0%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	D	7.2	53.0%
Totals for Area of Interest			**13.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

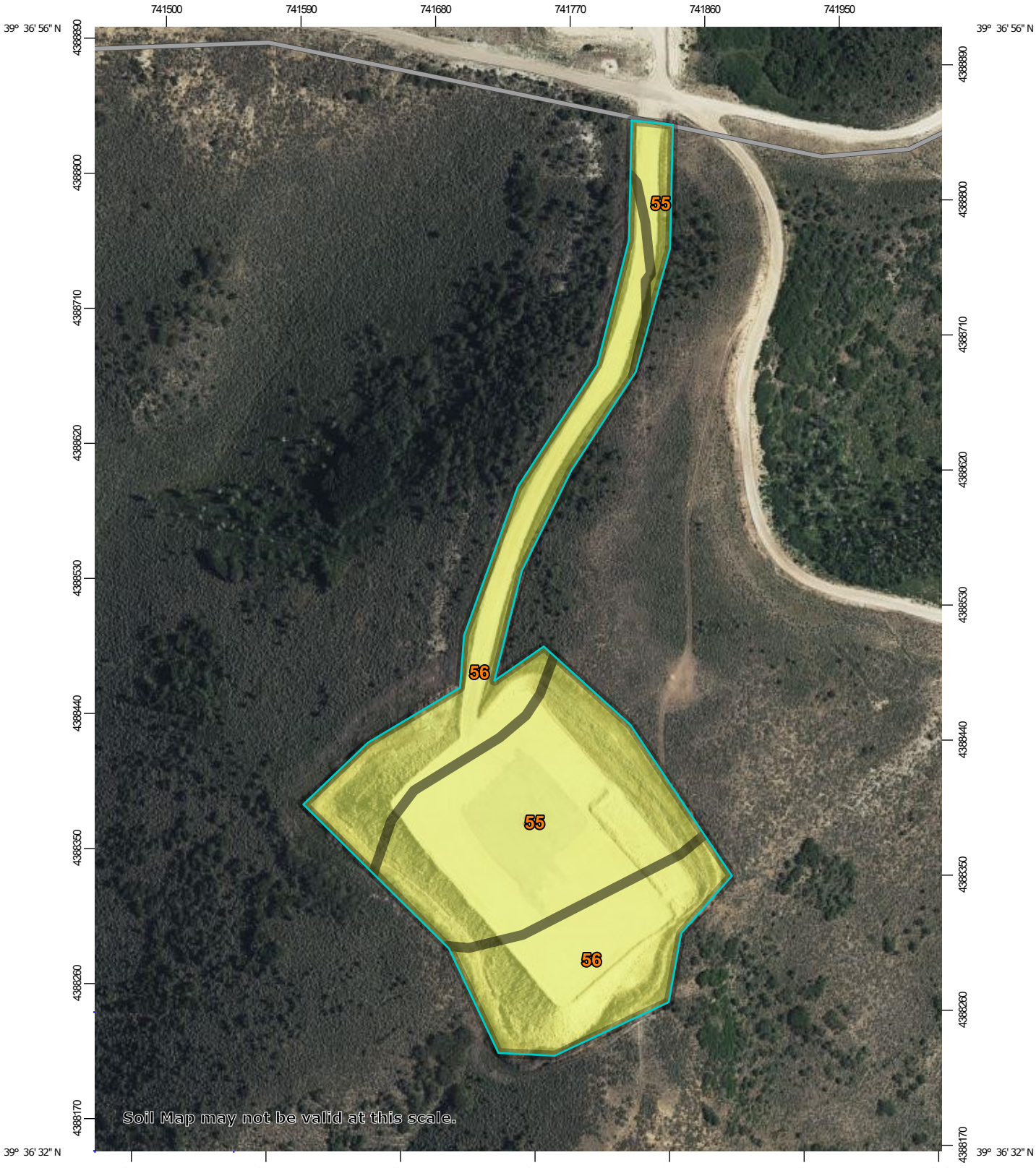
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

K Factor, Whole Soil—Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
(P17)



Map Scale: 1:3,650 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

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Survey Area Data: Version 17, Sep 6, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 24, 2020—Jul 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
55	Parachute-Irigul complex, 5 to 30 percent slopes	.20	6.3	47.0%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	.20	7.2	53.0%
Totals for Area of Interest			**13.5**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Rating Options

Aggregation Method: Dominant Condition

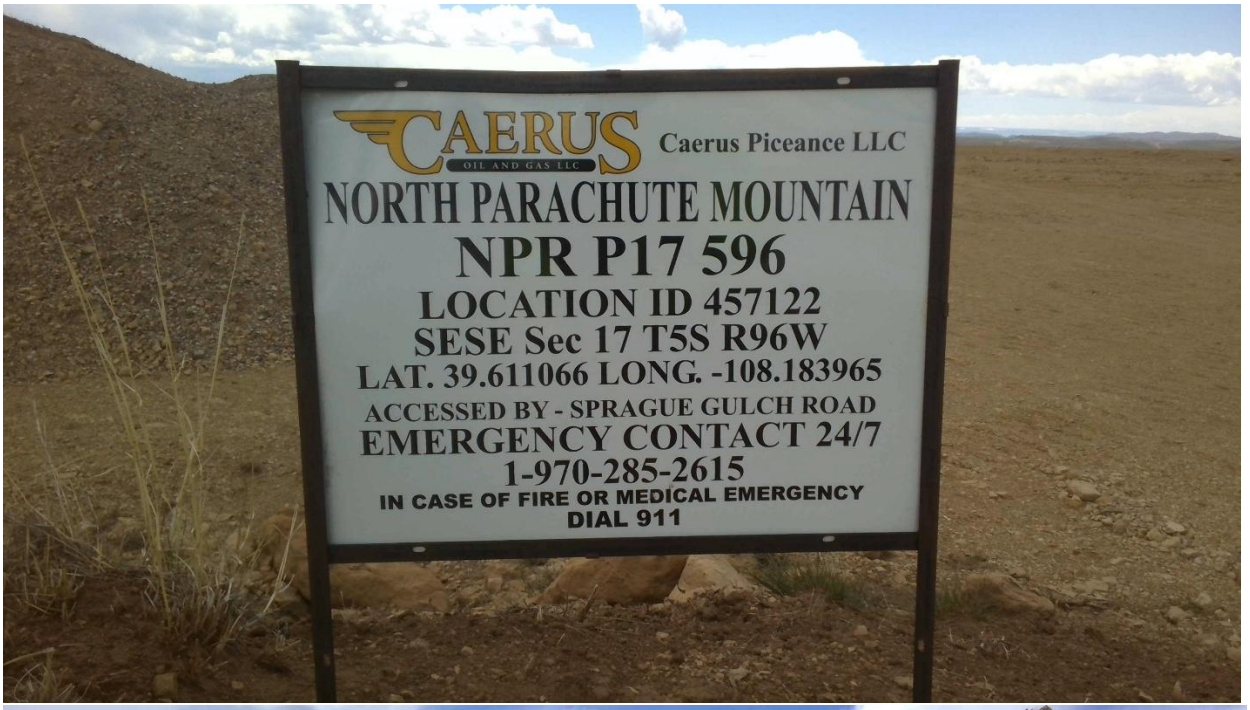
Component Percent Cutoff: None Specified

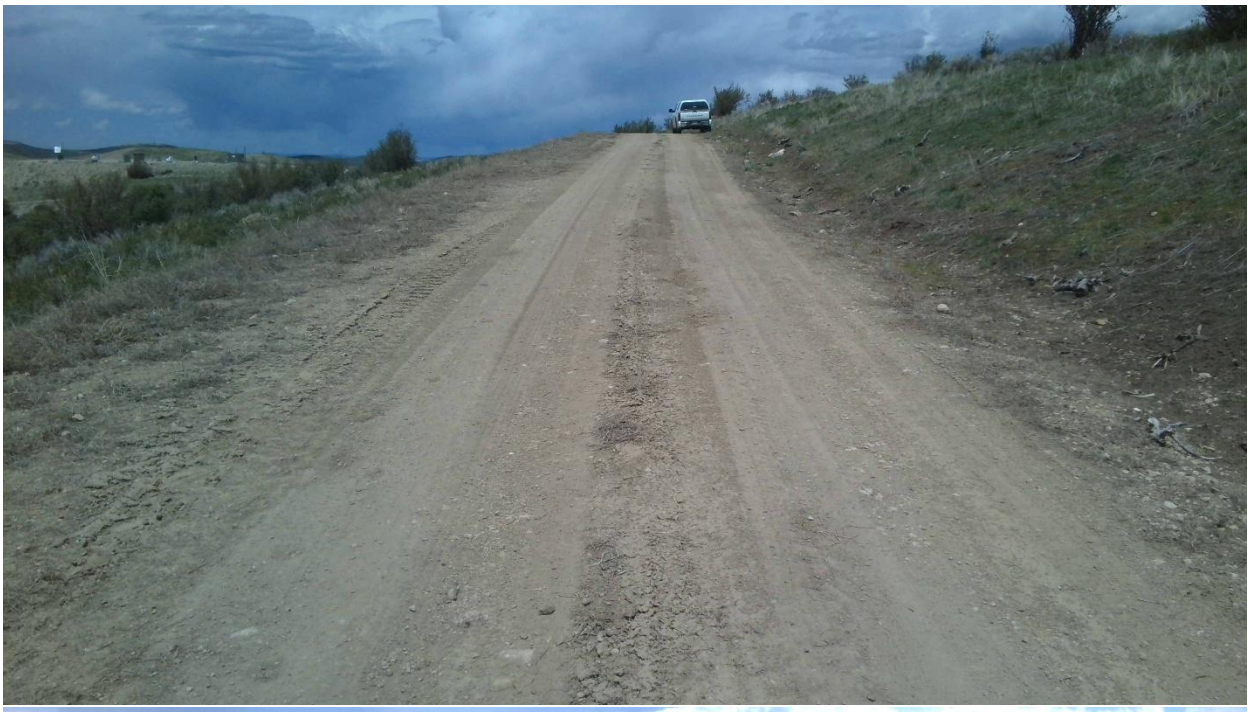
Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Appendix C

Site Visit Photos


CAERUS
OIL AND GAS LLC
Caerus Piceance LLC
NORTH PARACHUTE MOUNTAIN
NPR P17 596
LOCATION ID 457122
SESE Sec 17 T5S R96W
LAT. 39.611066 LONG. -108.183965
ACCESSED BY - SPRAGUE GULCH ROAD
EMERGENCY CONTACT 24/7
1-970-285-2615
IN CASE OF FIRE OR MEDICAL EMERGENCY
DIAL 911



Appendix D

GIS Aerial Imagery

Google Earth Pro dated 8/2021

Google Earth Pro dated 9/2019

Google Earth Pro dated 6/2016

Google Earth Pro dated 6/2014

Google Earth Pro dated 10/2011

Google Earth Pro dated 8/2011

Google Earth Pro dated 3/2006

Google Earth Pro dated 10/2005

Google Earth Pro dated 9/1993

COLORADO
Parks and Wildlife
Department of Natural Resources

Grand Junction (Area7) Service Center
711 Independent Avenue
Grand Junction, Colorado 81505
970.255.6100

Courtney Patch
RiverCity Consultants
215 Pitkin Ave. #201
Grand Junction, CO 81501
RE: Jackrabbit Gravel Quarry – Wildlife Evaluation

Dear Courtney,

Thank you for the opportunity to comment on the Jackrabbit Gravel Quarry proposal in Garfield County. Colorado Parks and Wildlife (CPW) has a statutory responsibility to manage all wildlife species in Colorado; this responsibility is embraced to manage all wildlife species in Colorado; this responsibility is embraced and fulfilled through CPW's mission to protect, preserve, enhance, and manage the wildlife of Colorado for the use, benefit, and enjoyment of the people of the State and its visitors. CPW encourages Garfield County and the project applicant to afford the highest level of protection to Colorado's wildlife and habitat. CPW has reviewed the proposal and would like to offer the following comments on potential impacts to wildlife.

Proposed, is a mining plan for a gravel pit on QB Energy property on a previously constructed pad. Over the course of 20 years, and 2 phases, it is estimated that 196,789.36 cubic yards of material over 13.22 acres will be extracted for use on QB on Energy's property for material on road maintenance and future pad constructions in the adjacent areas.

CPW utilizes the mitigation hierarchy of avoid, minimize, and mitigate when analyzing land use proposals. Avoidance measures leave wildlife habitat functionally intact with no direct, indirect, or cumulative adverse impacts to wildlife resources. Minimization efforts reduce adverse impacts on wildlife resources from anthropogenic disturbance. Still, minimization

efforts will not compensate for the permanent loss of wildlife habitat and the associated direct and indirect impacts to wildlife resources within, and adjacent to, the footprint of a proposal such as this.

Construction/Operation BMPs

1. This project intersects the following High Priority Habitats, for which CPW has sound spatial data and science-backed avoidance, minimization, and mitigation recommendations:

   Mule Deer Severe Winter Range
   Mule Deer Winter Concentration Area
   Elk Production Area
   Elk Severe Winter Range
   Elk Winter Concentration Area
   Greater Sage Grouse General Habitat Management Area
   Greater Sage Grouse Lek Site
   Greater Sage Grouse Priority Habitat Management Area
   Aquatic Cutthroat Trout Designated Crucial Habitat
   Aquatic Native Species Conservation Waters
   Aquatic Sportsfish Management Waters

   While these HPH recommendations are intended for oil and gas developments, we utilize these uniformly because they are scientifically vetted. These recommendations may need to be modified, added to, or applied differently depending on the nature of the development outside of that oil and gas arena.

   CPW recommends that operational hours take place between the hours of 7 a.m. and 5 p.m. to avoid excessive disturbance to big game animals. In addition, down-cast lighting should be used the entire year to prevent unnecessary disturbance to wildlife.

2. This project occurs in an area of very high density of noxious weeds. A weed management plan should be followed to control weeds on the property. Colorado Parks and Wildlife also recommends that all work equipment be cleaned prior to leaving the construction area to prevent the further spread of noxious weeds.

3. Proper measures (straw waffles, silt fences, containment berms, etc.) should be taken to prevent sediments, contaminated water, and other run-off originating in the project area from reaching the West Fork of Parachute Creek.

4. CPW should be consulted if there is consideration of introducing fish into the reclamation ponds. As stated above, the project area lies in close proximity of the West Fork of Parachute Creek in designated critical habitat for several native species of fish. Introduction of non-native fish has been identified as a key factor in the decline of native fish species. In addition to not allowing detrimental fish species to be released into the ponds, any ditch or other structure that discharges into the West Fork of Parachute Creek should be screened with no larger than ¼ in screen to prevent accidental introduction of fish from the ponds.

5. Actions should be taken to prevent wildlife from becoming trapped in open water pits prior to reclamation. Wildlife exclusion fences may be installed around the perimeter of pits to exclude big-game. However, if total exclusion fencing is not an option, wildlife escape ramps should incorporated into all active pits utilizing the following recommendations:
    a. Escape ramps or ladders should be installed at each end/corner of pit and in between at 50 to 100 foot intervals (or at closer intervals if appropriate, depending on size of pit).
    b. Ramps/ladders should be between 3:1 to 5:1 angle and extend from the bank/shoreline all the way to 5-6 feet below the low water mark to allow for escape at any reasonably anticipated water level.
    c. Ramps/ladders must be secured to the bank both above and below the waterline.
    d. Ramps/ladders must be strong enough for a large animal, such as an elk, to gain purchase and use them to climb out of the pit. Suggested ramp material: galvanized chain link fencing, minimum 36" wide for each ramp.

6. Any new fencing (not including exclusion fence) should be constructed using wildlife friendly designs. Guidelines for appropriate wildlife fencing can be found at the following link: https://cpw.state.co.us/Documents/LandWater/PrivateLandPrograms/FencingWithWildlifeInMind.pdf#search=wildlife%20fencing

7. The project area lies within CPW mapped black bear habitat. To avoid unneeded conflicts with this species, proper trash management, including bear-proof dumpster, should be utilized during both construction and operational phases.

Colorado Parks and Wildlife appreciates the opportunity to submit comments for this project. If there are any questions or need for additional information, please contact District Wildlife Manager, Nate Harrel at (970) 200-4026 nathan.harrel@state.co.us or Molly West, Land Use Specialist (970) 255-6105 molly.west@state.co.us

Sincerely,

Nate Harrel, District Wildlife Manager

Exhibit I
Soil Information

Natural Resources Conservation Service soil surveys area included in this exhibit for reference.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Jackrabbit Gravel Quarry

February 13, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (P17)

Map Scale: 1:3,810 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 17, Sep 6, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 24, 2020—Jul 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (P17)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
55	Parachute-Irigul complex, 5 to 30 percent slopes	6.4	43.1%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	8.5	56.9%
Totals for Area of Interest		**14.9**	**100.0%**

Map Unit Descriptions (P17)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

55—Parachute-Irigul complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2w4zb
Elevation: 7,600 to 8,800 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 36 to 40 degrees F
Frost-free period: 60 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Parachute and similar soils: 60 percent
Irigul and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parachute

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 10 inches: loam
Bw - 10 to 25 inches: very channery loam
Cr - 25 to 59 inches: bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R048AY228CO - Mountain Loam
Hydric soil rating: No

Description of Irigul

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 6 inches: channery loam
C - 6 to 13 inches: very channery loam
R - 13 to 59 inches: bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R048AY303CO - Loamy Slopes
Hydric soil rating: No

Minor Components

Adel

Percent of map unit: 5 percent
Landform: Swales
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R048AY250CO - Subalpine Loam
Hydric soil rating: No

Rhone

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R048AY238CO - Brushy Loam
Hydric soil rating: No

56—Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A

Map Unit Setting

National map unit symbol: 2w4z7
Elevation: 7,600 to 8,800 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 36 to 40 degrees F
Frost-free period: 60 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Parachute and similar soils: 35 percent
Rhone and similar soils: 30 percent
Irigul and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parachute

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 10 inches: loam
Bw - 10 to 25 inches: very channery loam
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Ecological site: R048AY238CO - Brushy Loam
Hydric soil rating: No

Description of Irigul

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 13 inches: very channery loam
R - 13 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R048AY303CO - Loamy Slopes
Hydric soil rating: No

Description of Rhone

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 10 inches: loam
A2 - 10 to 39 inches: channery loam
C - 39 to 55 inches: very channery loam
R - 55 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R048AY238CO - Brushy Loam
Hydric soil rating: No

Minor Components

Starman

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R048AY235CO - Dry Exposure
Hydric soil rating: No

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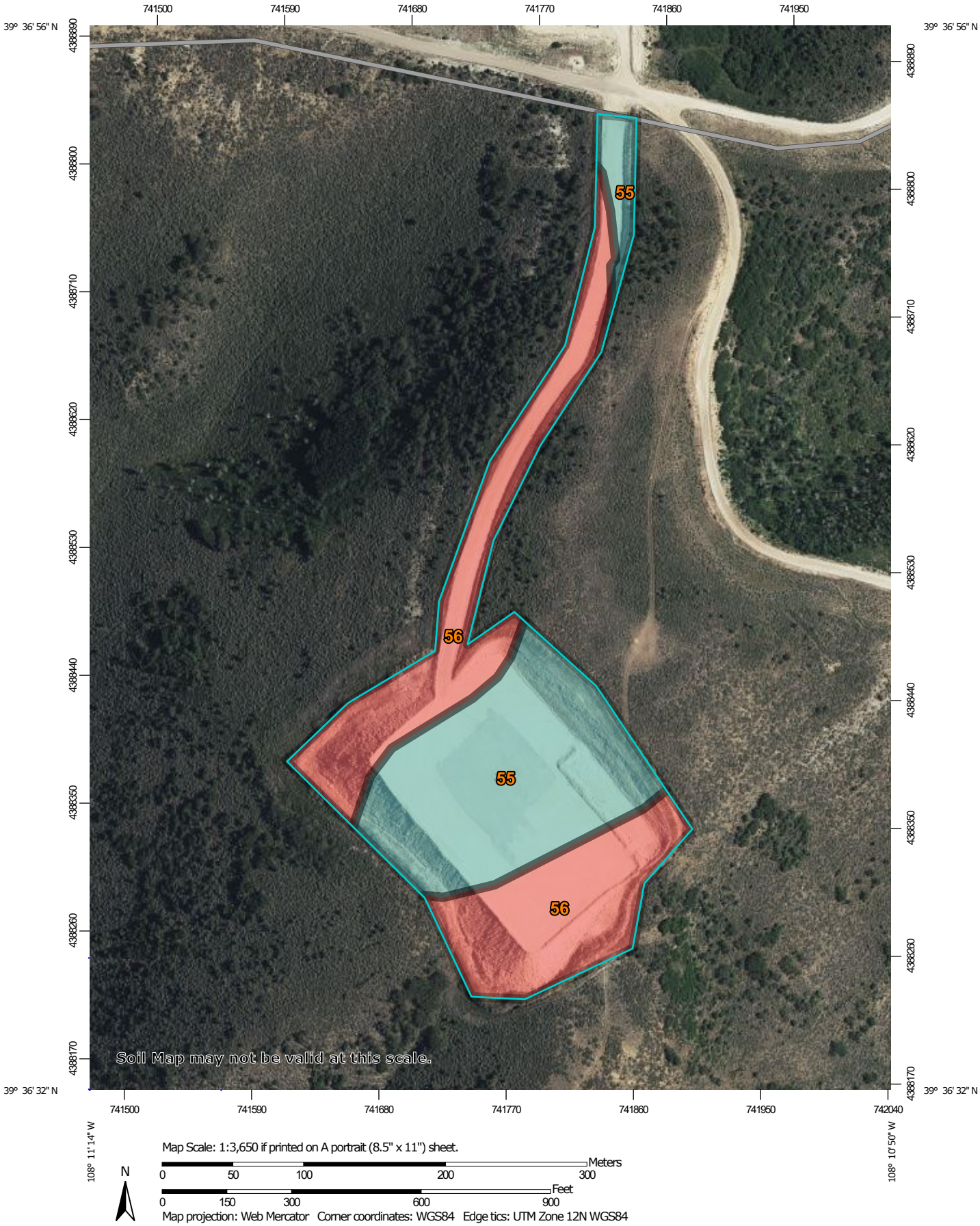
Hydrologic Soil Group—Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
(P17)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 17, Sep 6, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 24, 2020—Jul 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
55	Parachute-Irigul complex, 5 to 30 percent slopes	C	6.3	47.0%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	D	7.2	53.0%
Totals for Area of Interest			**13.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

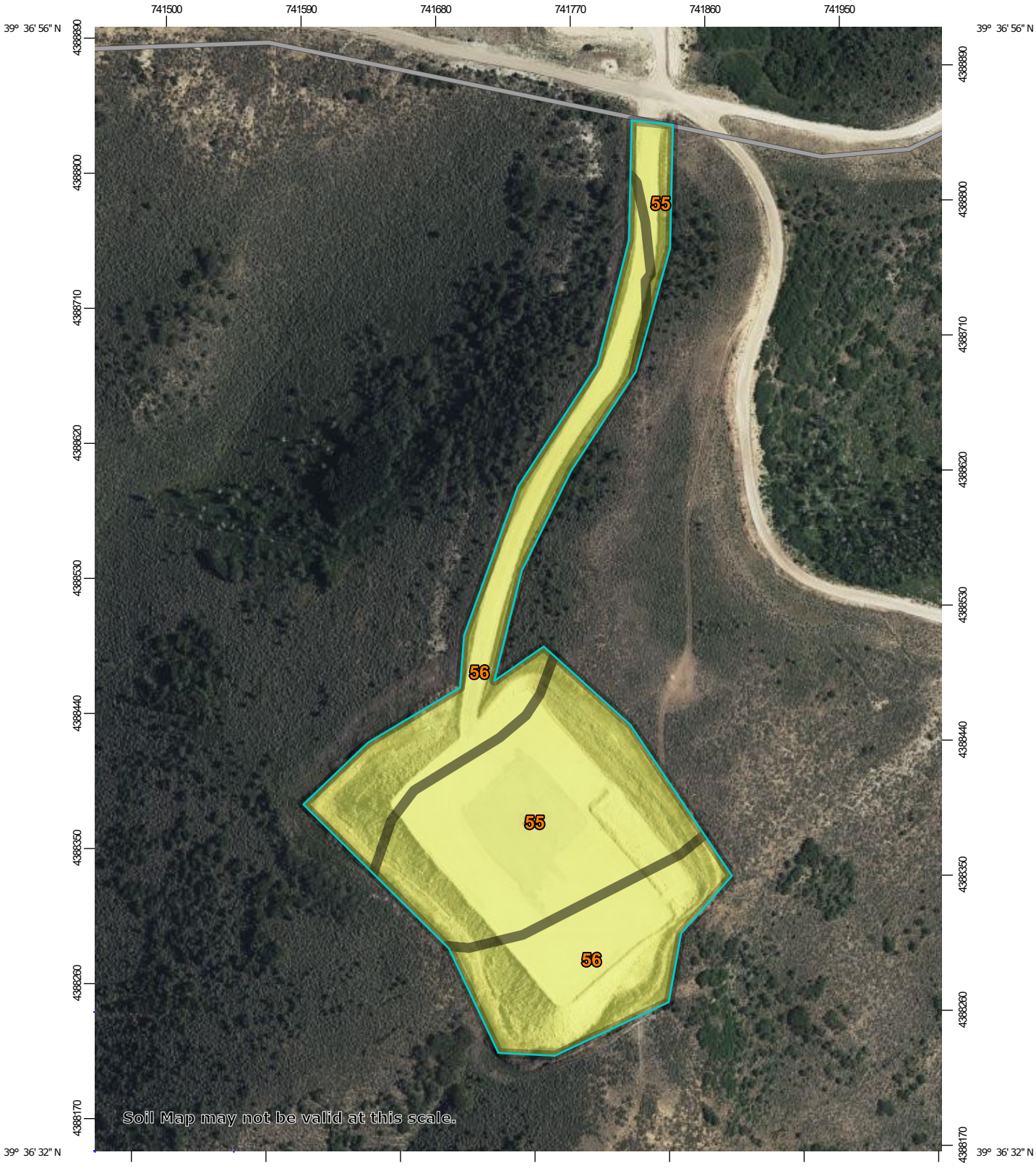
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

K Factor, Whole Soil—Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
(P17)



Map Scale: 1:3,650 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
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56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes MLRA 48A	.20	7.2	53.0%
Totals for Area of Interest			**13.5**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

LOCATION PARACHUTE CO

Established Series
Rev. CFS-GB
02/1999

PARACHUTE SERIES

The Parachute series consists of moderately deep, well drained soils formed in material derived from sandstone or basalt. Parachute soils are on upland ridges and mountainsides. Slopes range from 3 to 75 percent. The mean annual precipitation is about 20 inches and the mean annual temperature is about 42 degrees F.

TAXONOMIC CLASS: Loamy-skeletal, mixed, superactive Ustic Haplocryolls

TYPICAL PEDON: Parachute loam - native rangeland. (Colors are for dry soil unless otherwise noted.)

A--0 to 5 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure parting to moderate fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many fine roots; neutral; clear smooth boundary. (4 to 12 inches thick)

Bw1--5 to 13 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; 5 to 10 percent fine channery material; many fine roots; neutral; clear smooth boundary. (5 to 9 inches thick)

Bw2--13 to 18 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; 10 to 15 percent fine and medium channery material; common fine and medium roots; neutral; clear wavy boundary. (4 to 8 inches thick)

BC--18 to 29 inches; light yellowish brown (10YR 6/4) extremely channery loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; 80 percent channery material, mostly 3/4 to 3 inch size; few medium and fine roots; neutral; clear wavy boundary. (6 to 16 inches thick)

R--29 inches; hard, slightly fractured sandstone.

TYPE LOCATION: Garfield County, Colorado; about 15 miles north of Grand Valley; at the head of Davis Gulch; SE1/4 SE1/4 Sec. 25, T. 4 S., R. 96 W.

RANGE IN CHARACTERISTICS: Mean annual soil temperature ranges from 38 to 46 degrees F., and mean summer soil temperature ranges from 50 to 57 degrees F. Depth to the lithic contact ranges from 20 to 40 inches. The control section is typically loam and has 18 to 35 percent clay. Rock fragments range from 35 to 85 percent by volume, most of which are 3/4 to 3 inches in length.

The A and Bw horizons have hue of 7.5YR through 2.5Y, value of 3 through 6 dry, 2 through 4 moist, and chroma of 2 or 3. Reaction in the A and B horizons is neutral or mildly alkaline.

The BC horizon and C horizon, if present, has hue of 7.5YR through 2.5Y. Reaction is neutral or mildly alkaline.

COMPETING SERIES: These are the Antrobus (CO), Brickel (WA), Broad Canyon (UT),(T) Conical (WY), Decram (NV), Fairydell (NV), Farlow (WY), Foxmount (NV), Grafen (CO), Greyback (WY), Handran (CO), Kamack (UT),(T) Klug (ID), (T) Krackle (OR), (T) Lag (ID), Maurice (MT), (T) McCort (WY), Middlehill (ID), Midelight (WY), Midfork (WY), Rockabin (NV), Sebud (MT), Silvercliff (CO), Sup (NV), Supervisor (NM),(T) Teemat (WY), Thornburg (CO), Tiban (MT), Tineman (WY), and (T) Wareagle (ID) series. Antrobus, Broad Canyon, Fairydell, Farlow, Greyback, Handran, Kamack, Klug, Maurice, Lag, McCort, Midelight, Midfork,

Sebud, Silvercliff, Sup, Teemat, Thornburg, Tiban, Tineman, and Wareagle soils are deep soils. Krackle soils have an aridic moisture regime and are typically cobbly or stony. Middlehill and Rockabin soils have less than 18 percent clay in the particle-size control sections. Decram soils are dry more than 30 days in summer and fall. Conical, Foxmount and Grafen soils have a paralithic contact above 40 inches. Supervisor soils formed in material weathered from Granite and lack a cambic horizon. Brickel soils have a xeric moisture regime and formed in material weathered from gneiss.

GEOGRAPHIC SETTING: Parachute soils are on hills, ridges, mountaintops, and mountainsides. Slopes range from 3 to 75 percent. The soil formed in material weathered from fine-grained sandstone or basalt. Elevation ranges from 7,500 to 8,800 feet. The mean annual precipitation ranges from 10 to 30 inches. Mean annual temperature ranges from 36 to 44 degrees F. The frost-free period is less than 90 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Irigul, Northwater, Rhone, and Silas soils. Irigul soils have a lithic contact within a depth of 20 inches. Northwater and Rhone soils are pachic and deeper than 40 inches to a lithic contact. Silas soils are cumulic and have a fine-loamy control section.

DRAINAGE AND PERMEABILITY: Well drained; moderate runoff; moderate permeability.

USE AND VEGETATION: These soils are used for grazing. Native vegetation consists of Letterman needlegrass, bluebunch wheatgrass, bluegrasses, elk sedge, big sagebrush, serviceberry, snowberry, larkspur, milkvetch, fleabane, and lupine.

DISTRIBUTION AND EXTENT: Northwestern Colorado. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Bozeman, Montana

SERIES ESTABLISHED: Garfield County (Rifle Area), Colorado, 1977.

National Cooperative Soil Survey
U.S.A.

Exhibit J
Vegetation Information

The P17-596 Pad, also known as the Jackrabbit Gravel Quarry, was previously constructed in the spring of 2019. After the pad was constructed, the operator decided to move development operations to another location. Since this pad was already constructed, the material is to be used for road maintenance and future pad construction in adjacent areas over the next 20 years.

The site is comprised of the access road to the pad which gently slopes from northeast to southwest at elevations from 8,427 – 8,280 feet above sea level. The permit area consists of approximately 10 acres, and the majority of the site is already stripped of topsoil and contains mostly rock and sediment. The perimeter of the pad and adjacent sides of the access road consist mostly of a variety of grasses and some forbs and shrubs in good condition. There were no wetland species observed on site.

The permit area consists of two different soil types: Parachute-Irigual complex with 5-30% slopes, and Parachute-Irigual-Rhone association with 25-50% slopes. Both soil types have very slow infiltration rates when wet, therefore causing a high runoff potential for surface erosion.

Vegetation that was observed on site during the site visit includes the following:

Common Name	***Scientific Name***	**Abundance (frequency)**
Slender Wheatgrass	*Elymus trachycaulus*	High
Western Wheatgrass	*Pascopyrum smithii*	Hjgh
Nodding Brome	*Bromus anomalus*	Moderate
Indian Ricegrass	*Achnatherum hymenoides*	Low
Mountain Brome	*Bromus marginatus*	Moderate
Arizona Fescue	*Festuca arizonica*	Low
Thurber's Fescue	*Festuca thurberi*	Low
Arrowleaf Balsamroot	*Balsamorhiza sagittata*	Moderate
White Sagebrush	*Artemisia ludoviciana ssp. candicans*	Low
Gambel Oak	*Quercus gambelii*	Low
Black Sagebrush	*Artemisia nova*	Moderate
Woods' rose	*Rosa woodsii*	Low
Yellow Salsify	*Tragopogon dubius*	Low
Hoary Cress	*Lepidium draba*	Moderate
Yellow Alyssum	*Alyssum simplex*	Moderate

The abundance for each species is determined by estimating how frequent species were noted throughout the site. A high frequency means that the species is evenly distributed across the project area. A moderate frequency means that the species is scattered throughout the project area. A low frequency means that the species was only noticed a couple of times throughout the project area.

The canopy cover ranges from a height of approximately 3 feet tall and below. The tallest species found on site are Gambel Oak, Woods' Rose, and Black Sagebrush. The understory species range from approximately 2 feet and below. Most of the site is covered with Slender and Western Wheatgrass, along with other scattered forbs, grasses and bushes cover the entire perimeter of the site.

Exhibit C-5 shows a map with estimated species coverage according to the topography of the site.

Exhibit J-1 is the Ecological Site R048AY238CO Brushy Loam Ecological Site information packet from the NRCS.

Ecological site R048AY238CO
Brushy Loam

Last updated: 3/05/2024
Accessed: 01/31/2025

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 048A–Southern Rocky Mountains

MLRA 48A makes up about 45,920 square miles (119,000 square kilometers) and is the southern part of the Rocky Mountains. The Southern Rocky Mountains lies east of the Colorado Plateau, south of the Wyoming Basin, west of the Great Plains, and north of the Rio Grande Rift. It is in western and central Colorado, southeastern Wyoming, eastern Utah, and northern New Mexico. The headwaters of major rivers such as the Colorado, Yampa, Arkansas, Rio Grande, North Platte and South Plate rivers are located here. This MLRA has numerous national forests, including the Medicine Bow National Forest in Wyoming; the Routt, Arapaho, Roosevelt, Pike, San Isabel, White River, Gunnison, Grand Mesa, Uncompahgre, Rio Grande, and San Juan National Forests in Colorado; the Carson National Forest and part of the Santa Fe National Forest in New Mexico. Rocky Mountain National Park also is in this MLRA.

MLRA 48A is the southern Rocky Mountains physiographic region. The Southern Rocky Mountains consist primarily of two belts of strongly sloping to precipitous mountain ranges trending north to south. Several basins, or parks, are between the belts. Some high mesas and plateaus are included. It is characterized by mountain ranges that were uplifted during the Laramide Orogeny and then had periods of glaciation. The ranges include the Sangre de Cristo Mountains, the Laramie Mountains, and the Front Range in the east and the San Juan Mountains and the Sawatch and Park Ranges in the west. The ranges are dissected by many narrow stream valleys having steep gradients. In some areas the upper mountain slopes and broad crests are covered by snowfields and glaciers. Elevation typically ranges from 6,500 to 14,400 feet (1,980 to 4,390 meters) in this area. The part of this MLRA in central Colorado includes the highest point in the Rockies, Mount Elbert, which reaches an elevation of 14,433 feet (4,400 meters). More than 50 peaks in the part of the MLRA in Colorado are at an elevation of more than 14,000 feet (4,270 meters). Many small glacial lakes are in the high mountains.

The mountains in this area were formed mainly by crustal uplifts during the late Cretaceous and early Tertiary periods. This large MLRA can be subdivided into at least 4 large general divisions. First is the Rockies on the east side of this area are called the “Front Range,” which is a fault block that has been tilted up on edge and uplifted and is largely igneous and metamorphic geology. It was tilted up on the east edge, so there is a steep front on the east and the west side is more gently sloping and in the south east there are rocks exposed in the mountains are mostly Precambrian igneous and metamorphic rocks. Second is the tertiary rocks, primarily basalt and andesitic lava flows, tuffs, breccias, and conglomerates, are throughout this area (San Juan Mountains Area). The third division is Northwest part of the MLRA is dominantly sedimentary rock from the cretaceous/tertiary and Permian/ Pennsylvanian periods. The fourth subset is the long and narrow Sangre de Cristos mountains uplifted in the Cenozoic are between the Rio Grande rift and the great plains. Many of the highest mountain ranges were reshaped by glaciation during the Pleistocene. Alluvial fans at the base of the mountains are recharge zones for local basin and valley fill aquifers. They also are important sources of sand and gravel.

The average annual precipitation ranges predominantly from 12 to 63 inches. Summer rainfall commonly occurs as high-intensity, convective thunderstorms. About half of the annual precipitation occurs as snow in winter; this proportion increases with elevation. In the mountains, deep snowpacks accumulate throughout the winter and

generally persist into spring or early summer, depending on elevation. Some permanent snowfields and small glaciers are on the highest mountain peaks. In the valleys at the lower elevations, snowfall is lighter and snowpacks can be intermittent. The average annual temperature is 26 to 54 degrees F (-3 to 12 degrees C). The freeze-free period averages 135 days and ranges from 45 to 230 days, decreasing in length with elevation. The climate of this area is strongly dependent upon elevation; precipitation is greater, and temperatures are cooler at the higher elevations. The plant communities vary with elevation, aspect and change in latitudes due to changing in precipitation kind and timing and temperature.

The dominant soil orders in this MLRA are Mollisols, Alfisols, Inceptisols, and Entisols. The soils in the area dominantly have a frigid or cryic soil temperature regime and an ustic or udic soil moisture regime. Mineralogy is typically mixed, smectitic, or paramicaceous. In areas with granite, gneiss, and schist bedrock, Glossocryalfs (Seitz, Granile, and Leadville series) and Haplocryolls (Rogert series) formed in colluvium on mountain slopes. Dystrocryepts (Leighcan and Mummy series) formed on mountain slopes and summits at the higher elevations. In areas of andesite and rhyolite bedrock, Dystrocryepts (Endlich and Whitecross series) formed in colluvium on mountain slopes. In areas of sedimentary bedrock, Haplustolls (Towave series) formed on mountain slopes at low elevations and with low precipitation. Haplocryolls (Lamphier and Razorba series), Argicryolls (Cochetopa series), and Haplocryalfs (Needleton series) formed in colluvium on mountain slopes at high elevations.

Classification relationships

NRCS:
Major Land Resource Area 48A, Southern Rocky Mountains (United States Department of Agriculture, Natural Resources Conservation Service, 2006).

USFS:

M331F- Southern Parks and Rocky Mountain Range Section Southern Rocky Mountain Steppe - Open Woodland - Coniferous Forest - Alpine Meadow

M331G – South Central Highlands Section Southern Rocky Mountain Steppe - Open Woodland - Coniferous Forest - Alpine Meadow

M331H – North Central Highlands and Rocky Mountains Section Southern Rocky Mountain Steppe - Open Woodland - Coniferous Forest - Alpine Meadow

M331I – North Parks and Ranges Section Southern Rocky Mountain Steppe - Open Woodland - Coniferous Forest - Alpine Meadow

M341B – Tavaputs Plateau Section M341 Nevada-Utah Mountains Semi-Desert - Coniferous Forest - Alpine Meadow (Cleland, et al., 2007).

EPA:

21a – Alpine Zone, 21b – Crystalline Subalpine Forests, 21c – Crystalline Mid-Elevations Forests, 21d -Foothill Shrublands, 21e – Sedimentary Subalpine Forests, 21f – Sedimentary Mid-Elevation Forests, 21g – Volcanic Subalpine Forests, and 21h – Volcanic Mid-Elevation Forests < 21 Southern Rockies < 6.2 Western Cordillera < 6 Northwestern Forested Mountains North American Deserts (Griffith, 2006).
20c – Semiarid Benchlands and Canyonlands and 20e - Escarpements < 20 Colorado Plateau < 10.1 Cold Deserts < 10 North American Deserts (Griffith, 2006).

USGS: Southern Rocky Mountain Province and the southern part of Unita Basin Section Colorado Plateaus Province

Ecological site concept

Brushy Loam occur on hills, mountains, complex landslides, and benches. Slopes is between 3 to 35%. Soils are moderately deep to deep (20 to 60+ inches), soils derived from colluvium, residuum, slope alluvium and alluvium from sandstone and shale. Soil surface texture is loam or clay loam with fine-textured subsurface. It is a Gambel’s

oak – slender wheatgrass community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.

Associated sites

F048AY448CO	**Mountain Pinyon** Mountain Pinyon occurs on mountains, ridges, hills, hillslopes and structural benches. Slopes is between 3 to 30%. Soils are very shallow to shallow (5 to 20 inches) in depth. Soils are derived from colluvium, residuum, slope alluvium from sandstone and/or siltstone. Soil surface texture is loam, gravelly to gravelly loam, channery loam or sandy loam with a loamy or loamy skeletal subsurface. It is a Two-needle pinyon – Gambel's oak – western wheatgrass community. It has an aridic ustic moisture regime and a frigid temperature regime. The effective precipitation ranges from 12 to 16 inches.
R048AY222CO	**Loamy Park** Loamy Park occurs on alluvial and colluvial fans, hillsides, plains, sideslopes, terraces, valley sideslopes, and valley bottoms Slopes are from 0 to 30%. Soils are moderately deep to deep (20-60 inches) loamy soils derived from residuum from igneous and metamorphic rocks; alluvium from granite, gneiss, schist, or sandstone and shale. Soil surface texture are sandy loam to loam with loam subsurface. It is a Arizona Fescue – Mountain Muhly community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY228CO	**Mountain Loam** Mountain Loam occurs mainly alluvial fans, mountain slopes, benches, terraces, or hills. Slopes average between 5 and 10% but can range from 0 to 30%. Soils are moderately deep to deep (20-60 inches) loamy soils derived from residuum from igneous and metamorphic rocks or sandstone and shale; slope alluvium from sandstone and shale, or igneous and metamorphic rocks; colluvium from igneous and metamorphic rocks or sandstone and shale, and/or alluvium from igneous and metamorphic rocks. Soil surface texture are loam, sandy loam or silt loam with loamy subsurface. It is a Mountain Big Sagebrush - Arizona Fescue community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY230CO	**Shallow Loam** Shallow Loam occurs on mountains, and hills. Soils are very shallow to shallow (less than 20 inches) loamy-skeletal soils derived from slope alluvium from trachyte, volcanic breccia, gneiss, granite and/or sandstone; residuum from weathered volcanic breccia, tuff, igneous rock, sandstone or sandstone and shale. Soils surface textures are gravelly to very gravelly loam, gravelly to very gravelly sandy loam, cobbly loam. Or very cobbly sandy loam. It is an Arizona Fescue-Mountain Muhly community with scattered mountain mahogany, snowberry and current. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY235CO	**Dry Exposure** Dry Exposure occurs on steep slopes, ridges, hill tops and other exposed, tree-less areas seen from high mountain valleys and parks on very shallow to shallow soils. Soil textures are gravelly sandy loams to gravelly loams; light colored. Soils have a droughty desert pavement. It is a winterfat-fringed sagebrush-bunchgrass community. It has an ustic aridic moisture regime and frigid temperature regime. The effective precipitation ranges from 12 to 16 inches.
R048AY237CO	**Stony Loam** Stony Loam occurs mainly alluvial fans, mountain slopes mountains and valley sides. Slopes is between 0 to 30%. Soils are deep (60 inches or more) loamy soils derived from outwash; till; colluvium from basalt, sandstone or granite and gneiss; and/or alluvium from igneous and metamorphic rocks; or basalt. Soil surface texture are stony to extremely stony loam, cobbly loam; or cobbly to very cobbly sandy loam with loamy-skeletal subsurface. It is a Mountain Big Sagebrush - Bluebunch wheatgrass community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY239CO	**Brushy Mountain Loam** Brushy Mountain Loam occurs on mountainsides, mountains, and complex landslides. Slopes is between 3 to 50%. Soils are deep (60+ inches). Soils are derived from colluvium from igneous, metamorphic and sedimentary rock. Soil surface texture is very gravelly sandy clay loam, very stony loam, or gravelly loam with loamy-skeletal or clayey-skeletal textured subsurface. It is a Mountain Mahogany - Gambel's oak community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.

R048AY241CO	**Mountain Meadow** Mountain Meadow occurs on floodplains, flood-plain steps, valley floors, drainageways and low terraces. This site has natural sub-irrigation. Slopes is between 0 to 15%. Soils are moderately deep to very deep (20 to 60+ inches). Soils are derived from alluvium from sandstone and shale, sedimentary rock, igneous, metamorphic and sedimentary rock, or shale. Soil surface texture is loam, sandy loam, sandy clay loam or clay loam with fine-loamy textured subsurface. It has a typic aquic or oxyaquic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY247CO	**Deep Clay Loam** Deep Clay Loam occurs on hills, hillsides, mountain-slope, complex landslides, alluvial fans, and structural benches. Slopes is between 0 to 35%. Soils are deep (60+ inches). Soils are derived from colluvium and slide deposits from igneous, metamorphic and sedimentary rocks, and/or alluvium, residuum or complex landslide deposits from shale. Soil surface texture is loam, clay loam or silty clay loam with fine-textured subsurface. It is a mountain big sagebrush – western wheatgrass community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY255CO	**Pine Grasslands** Pine Grassland occurs on structural benches, dip slopes, hills, mesas and canyon benches. Slopes is between 0 to 35%. Soils are moderately deep to very deep (20 to 60+ inches). Soils are derived from eolian deposits from sandstone; alluvium, colluvium or slope alluvium from sandstone and shale; or residuum from igneous and metamorphic rock. Soil surface texture is loam, sandy loam or gravelly loam with fine-loamy or fine-silty textured subsurface. It is a Ponderosa Pine – Arizona Fescue community. It has a typic ustic moisture regime and frigid temperature regime. The effective precipitation ranges from 16 to 20 inches.
R048AY303CO	**Loamy Slopes** Loamy Slopes occurs on alluvial fans, terraces, hills mountains and mountainsides. Slopes is between 25 to 65%. Soils are moderately deep to deep (20 to 60+ inches). Soils are derived from alluvium from sandstone and siltstone or sandstone; residuum or colluvium from sandstone or outwash from basalt. Soil surface texture is cobbly sandy loam or cobbly, very flaggy or channery loam with loamy-skeletal textured subsurface. It is a mountain mahogany – Indian ricegrass community. It has an aridic ustic moisture regime and frigid temperature. The effective precipitation ranges from 12 to 18 inches.

Similar sites

R048AY239CO	**Brushy Mountain Loam** Brushy Mountain Loam occurs on mountainsides, mountains, and complex landslides. Slopes is between 3 to 50%. Soils are deep (60+ inches). Soils are derived from colluvium from igneous, metamorphic and sedimentary rock. Soil surface texture is very gravelly sandy clay loam, very stony loam, or gravelly loam with loamy-skeletal or clayey-skeletal textured subsurface. It is a Mountain Mahogany - Gambel's oak community. It has a typic ustic moisture regime. The effective precipitation ranges from 16 to 20 inches.
R048AY248CO	**Mountain Clay Loam** Mountain Clay Loam occurs on alluvial fans, mesas, hills and mountain slopes. Slopes is between 0 to 35%. Soils are deep to very deep (40 to 60+ inches). Soils are derived from alluvium and slope alluvium from shale; or alluvium, slope alluvium, colluvium and/or residuum from sandstone and shale. Soil surface texture is loam or a clay loam with fine-textured subsurface. It is Arizona Fescue – western wheatgrass – Gambel's Oak community. It has a typic ustic moisture regime and frigid temperature regime. The effective precipitation ranges from 16 to 20 inches.
R048AY303CO	**Loamy Slopes** Loamy Slopes occurs on alluvial fans, terraces, hills mountains and mountainsides. Slopes is between 25 to 65%. Soils are moderately deep to deep (20 to 60+ inches). Soils are derived from alluvium from sandstone and siltstone or sandstone; residuum or colluvium from sandstone or outwash from basalt. Soil surface texture is cobbly sandy loam or cobbly, very flaggy or channery loam with loamy-skeletal textured subsurface. It is a mountain mahogany – Indian ricegrass community. It has an aridic ustic moisture regime and frigid temperature. The effective precipitation ranges from 12 to 18 inches.
R048AY379CO	**Brushy Slopes** Brushy Slopes occurs on canyons. Slopes is between 25 to 75%. Soils are moderately deep (20 to 40 inches). Soils are derived from colluvium or residuum from sandstone. Soil surface texture is cobbly sandy loam with loamy textured subsurface. It is a mountain big sagebrush – muttongrass community. It has a typic ustic moisture regime and frigid temperature regime. The effective precipitation ranges from 16 to 20 inches.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Quercus gambelii*
Herbaceous	(1) *Elymus trachycaulus*

Physiographic features

This site occupies on gently sloping and rolling upland slopes. Slope is generally 3 to 35 percent. Elevation ranges from 6200 feet to 9000 feet above sea level.

Table 2. Representative physiographic features

Landforms	(1) Mountainside (2) Mountain (3) Bench (4) Mountain slope (5) Complex landslide (6) Structural bench (7) Hill
Runoff class	High to very high
Flooding frequency	None
Ponding frequency	None
Elevation	6,200–9,000 ft
Slope	3–35%
Aspect	Aspect is not a significant factor

Climatic features

Average annual precipitation is about 16 to 20 inches. Of this, approximately 45-55 percent falls as snow, and 45-55 percent falls as rain between middle of May to and the end of September. Summer moisture is mostly from thundershowers in July, August and September. December to February is the driest period of the year with the driest month being January. July thru September is the wettest period and the wettest month is usually August. The average annual total snowfall is 84.9 inches. The snow depth usually ranges from 1 to 5 inches during November thru March. The highest winter snowfall record in this area is 127 inches which occurred in 2007-2008. The lowest snowfall record is 46.5 inches during the 2017-2018 winter. Range forage plants are favored by spring moisture from accumulated snow. The frost-free period typically ranges from 80 to 120 days. The last spring frost is typically the middle of June to the end of June. The first fall frost is usually the end of August to the middle of September. Mean daily annual air temperature ranges from about 25.5ºF to 60.3ºF, averaging about 24ºF for the winter and 61.8ºF in the summer. Summer high temperatures of mid-70ºF to low 80ºF are not unusual. The coldest winter temperature recorded was -36ºF on February 2, 1985 and the warmest winter temperature recorded was 65ºF on December 5, 1995. The coldest summer temperature recorded was 19ºF on June 2, 1990 and the warmest was 98ºF on July 31, 2002. Wide yearly and seasonal fluctuations are common for this climatic zone. Data taken from Western Regional Climate Center (2018) for Ridgway, Colorado Climate Station.

This zone in MLRA 48 will need to be broken up into at multiple land resources zones in future projects based on current knowledge of precipitation and temperature patterns.

West Central Zone Stations: Alterbern, Aspen, Avon, Glenwood Springs #2, Shoshone, Placerville and Ridgway. This LRU zone is use in write up above. Driest month is usually January, February and June and wettest months are July, August and September.

Northwest Zone Climate Stations: Meeker and Yampa are at the low end of this LRU zone. Driest months usually are January and February. Wettest months usually are April and August.

Southwest Zone Climate Stations (Precambrian sedimentary and igneous): There are no climate stations in this LRU zone.

Southwest Volcanics: There are no climate stations in this LRU zone.

Northeast (Front Range Igneous and Metamorphic): Cabin Creek, Caribou Ranch, Dillion 1 R, Fraser, Georgetown, Grand lake 1 NW, Hourglass Reservoir, Nederland 2 NNE, Red Feathers Lakes, Red Feather Lakes 2 SE and Victor. April, May, July and August are the wettest months. February, December, November and October are the driest. The climate stations is this zone are cryic. These areas have shorter growing seasons by 20 to 40 days over the frigid stations.

Southeast (Sangre de Cristo Mtns): There are no climate stations in this zone in MLRA 48A. Closest ones are in MLRA 49. The growing season appears to be longer on the Sangre de Cristos. Driest months are December to February and the wettest are July & August.

Cryic High elevation valleys: Pitkin, Taylor River and Meredith. These areas have shorter growing seasons by 20 to 40 days over the frigid stations.

Table 3. Representative climatic features

Frost-free period (characteristic range)	23-78 days
Freeze-free period (characteristic range)	75-111 days
Precipitation total (characteristic range)	17-18 in
Frost-free period (actual range)	5-101 days
Freeze-free period (actual range)	43-134 days
Precipitation total (actual range)	17-19 in
Frost-free period (average)	54 days
Freeze-free period (average)	92 days
Precipitation total (average)	18 in

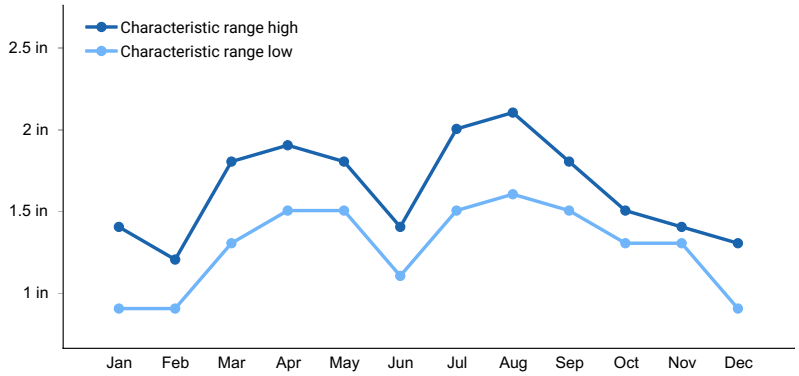


Figure 1. Monthly precipitation range

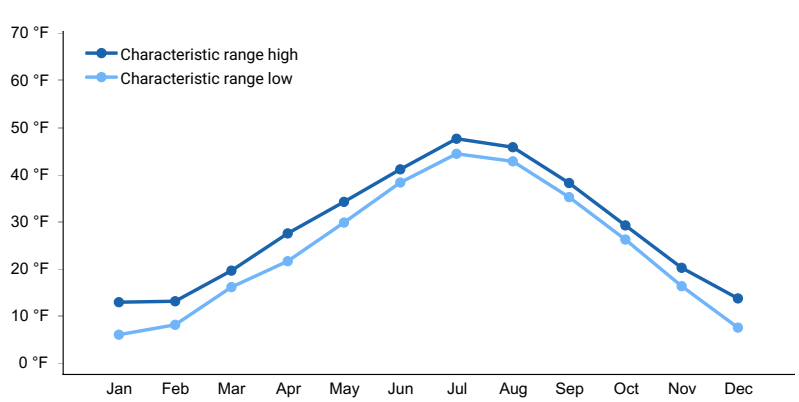


Figure 2. Monthly minimum temperature range

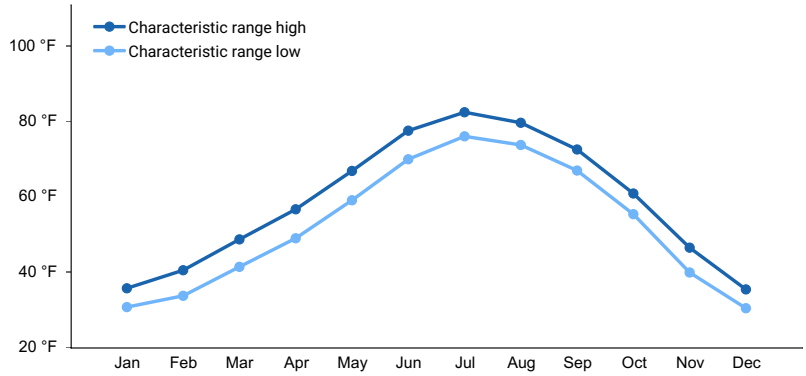


Figure 3. Monthly maximum temperature range

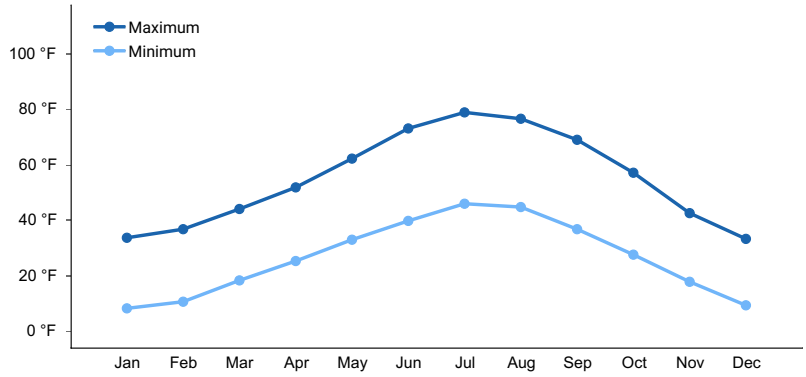


Figure 4. Monthly average minimum and maximum temperature

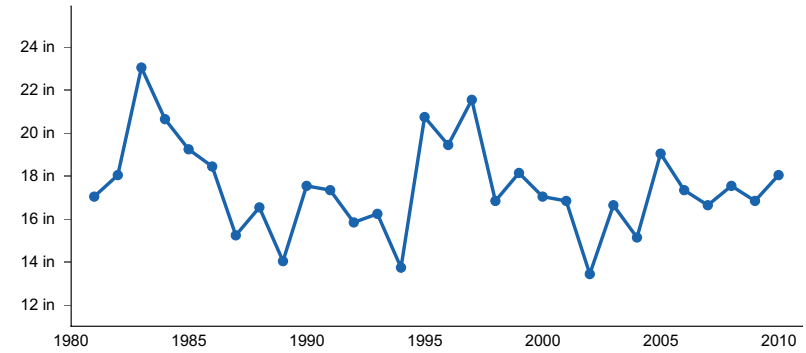


Figure 5. Annual precipitation pattern

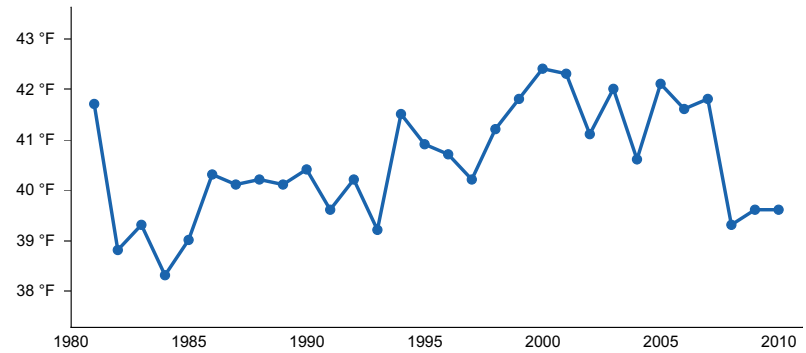


Figure 6. Annual average temperature pattern

Climate stations used

- (1) ASPEN PITKIN CO AP [USW00093073], Aspen, CO
- (2) FRASER [USC00053116], Fraser, CO
- (3) GLENWOOD SPGS #2 [USC00053359], Glenwood Springs, CO

- (4) GEORGETOWN [USC00053261], Idaho Springs, CO
- (5) HOURGLASS RSVR [USC00054135], Bellvue, CO
- (6) RIDGWAY [USC00057020], Ridgway, CO
- (7) YAMPA [USC00059265], Toponas, CO

Influencing water features

None

Soil features

Soils of this site are dark brown to very dark brown loams to heavy clay loams. The subsoil is moderately to strong structured clay loam to clay, one to four feet thick The soil is very favorable for plant growth.

Soils associated with this site based on family particle size are (not all are listed):

fine-loamy - Detra, Empedrado, Hesperus, Jemco, Shermap, and Southbaldy

fine- Absarokee, Cochetopa, Delson, Fughes, Gothic, Jerry, Narraguinnep and Pagoda

loamy-skeletal - Bendire, Curecanti, and Sheek

clayey-skeletal - Godding, and Winnemucca

This site needs to be broken out into several ecological sites. 1) fine; 2) clayey-skeletal; 3) fine-loamy; 4) loamy-skeletal; and 5) sites greater than 35%. Fine family soils data was used in this section as it is the most common family particle size.

Table 4. Representative soil features

Parent material	(1) Residuum–sandstone and shale (2) Colluvium–sandstone and shale (3) Colluvium–shale (4) Slope alluvium–sandstone and shale (5) Slope alluvium–shale (6) Alluvium–sandstone and shale
Surface texture	(1) Loam (2) Clay loam
Family particle size	(1) Fine
Drainage class	Well drained
Permeability class	Slow to moderate
Soil depth	40–60 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0–5%
Available water capacity (Depth not specified)	4–8.3 in
Calcium carbonate equivalent (Depth not specified)	0–5%
Soil reaction (1:1 water) (Depth not specified)	6.6–7.8
Subsurface fragment volume <=3" (Depth not specified)	0–20%
Subsurface fragment volume >3" (Depth not specified)	0–15%

Ecological dynamics

The appearance of this site is a shrub dominated community. Saskatoon serviceberry and Gamble oak are the major woody species. Mountain snowberry, chokecherry, and Woods rose are other shrub species. Nodding brome, mountain brome, slender wheatgrass, western wheatgrass, Letterman needlegrass, Columbia needlegrass, and elk sedge are the major grass/grass-like species on the site. Major forb species include aspen peavine, fleabane, western yarrow, American vetch, and lupine. Additional plants present on this site include oniongrass, mountain big sagebrush, geranium, and low larkspur.

Ground cover and structure
Plant type %canopy cover average ht %basal area
Grasses 55 1.5 25
Forbs 10 1 1
Shrubs 15 4 2
Trees 20 8 2

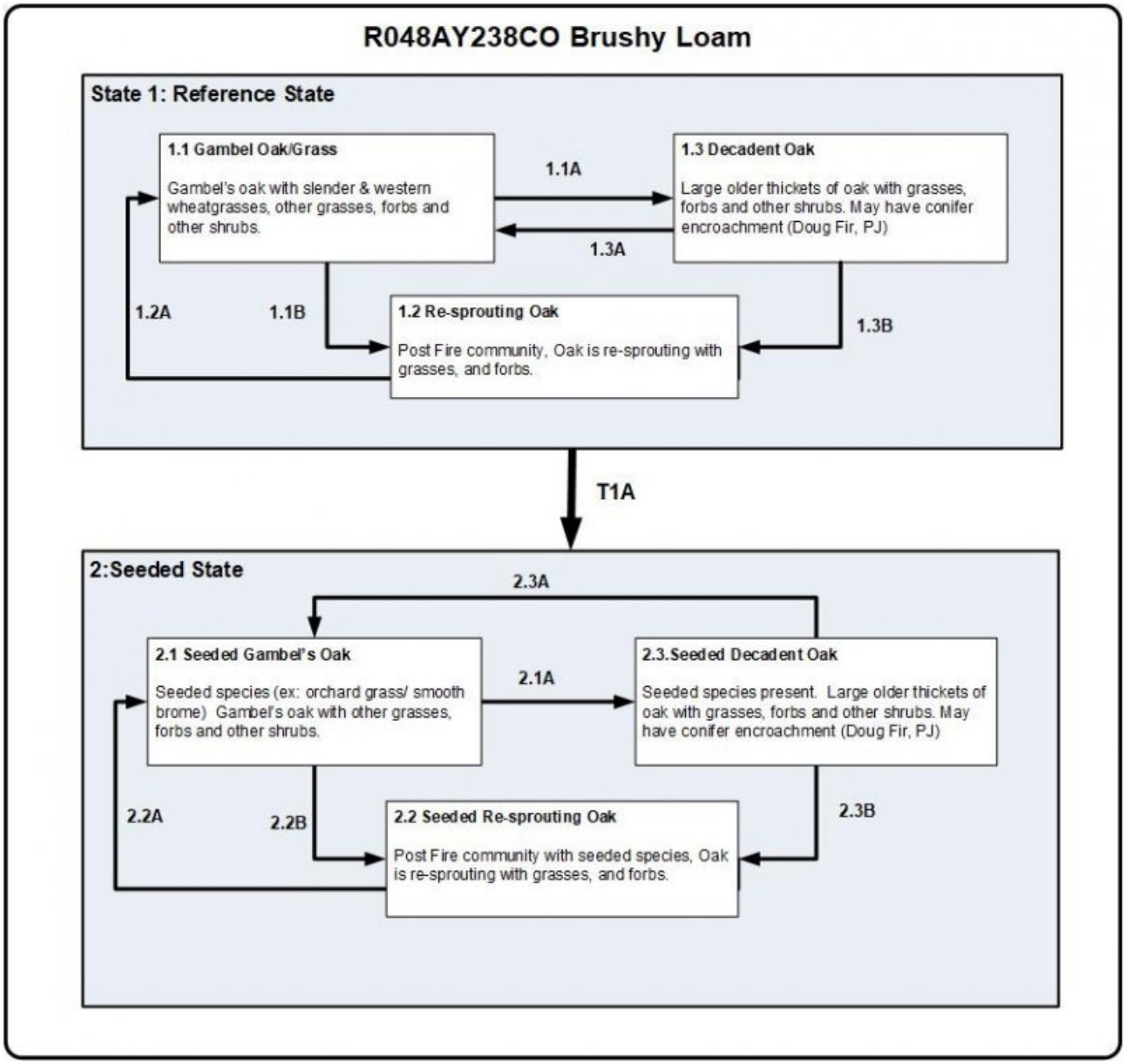
Range Site Description:

This site is generally treeless, except for possibly a few scattered aspen, which have little or no market value. Optimum ground cover is 60%.

Invaders of this site include rabbitbrush, Kentucky bluegrass, and Canada thistle.

The state and transition model was added to fill the provisional ecological site instruction. It is a very general model.

State and transition model



Legend

1.1A, 2.1A – lack of fire/disturbance, time without disturbance, lack of insect/pathogen outbreaks, and/or possible tree encroachment (pinyon, or Doug fir)

1.1B, 1.3B, 2.1B. 2.3B – fire/natural disturbance, insect/pathogens outbreaks, and/or tree encroachment removal

1.2A, 2.2A – lack of fire/disturbance, time without disturbance, lack of insect/pathogen outbreaks

1.3A, 2.3A – natural disturbance, insect/pathogens outbreaks and/or tree encroachment removal on a smaller scale

T1A – Seeding, and/or vegetative treatments (fire, mechical, chemical) of shrubs and/trees

State 1
Reference State

Community 1.1

Reference State

Total annual production Grass 50-70% Forbs 5-10% Shrubs 20-30 Trees 5-10 Favorable years 3000 pounds/acre Average years 2000 pounds/acre Unfavorable 1500 pounds/acre

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	1005	1200	2145
Shrub/Vine	400	650	650
Forb	95	150	205
Total	**1500**	**2000**	**3000**

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Grasses**			1000–1400	
	slender wheatgrass	ELTR7	*Elymus trachycaulus*	100–300	–
	western wheatgrass	PASM	*Pascopyrum smithii*	100–300	–
	muttongrass	POFE	*Poa fendleriana*	0–200	–
	Letterman's needlegrass	ACLE9	*Achnatherum lettermanii*	100–200	–
	Columbia needlegrass	ACNE9	*Achnatherum nelsonii*	100–200	–
	nodding brome	BRAN	*Bromus anomalus*	100–200	–
	mountain brome	BRMA4	*Bromus marginatus*	100–200	–
	elk sedge	CAGA3	*Carex garberi*	100–200	–
	Arizona fescue	FEAR2	*Festuca arizonica*	0–200	–
	Idaho fescue	FEID	*Festuca idahoensis*	0–200	–
	Thurber's fescue	FETH	*Festuca thurberi*	0–200	–
	needle and thread	HECOC8	*Hesperostipa comata ssp. comata*	100–200	–
	prairie Junegrass	KOMA	*Koeleria macrantha*	100–200	–
	basin wildrye	LECI4	*Leymus cinereus*	0–100	–
	oniongrass	MEBU	*Melica bulbosa*	0–100	–
	mountain muhly	MUMO	*Muhlenbergia montana*	0–100	–
	squirreltail	ELEL5	*Elymus elymoides*	0–100	–
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	0–100	–
Forb					
2	**Forbs**			100–200	
	arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata*	0–100	–
	silvery lupine	LUAR3	*Lupinus argenteus*	0–80	–
	cowparsnip	HERAC	*Heracleum*	0–80	–
	American vetch	VIAM	*Vicia americana*	0–60	–
	mule-ears	WYAM	*Wyethia amplexicaulis*	0–60	–
	trailing fleabane	ERFL	*Erigeron flagellaris*	0–60	–
	sulphur-flower buckwheat	ERUM	*Eriogonum umbellatum*	0–40	

	sulphur-flower buckwheat	ERUM	*Eriogonum umbellatum*	0–40	–
	Richardson's geranium	GERI	*Geranium richardsonii*	0–40	–
	twolobe larkspur	DENU2	*Delphinium nuttallianum*	0–40	–
	western yarrow	ACMIO	*Achillea millefolium var. occidentalis*	0–40	–
	nettleleaf giant hyssop	AGUR	*Agastache urticifolia*	0–40	–
	white sagebrush	ARLUC8	*Artemisia ludoviciana ssp. candicans*	0–40	–
	Nevada pea	LALAL3	*Lathyrus lanszwertii var. leucanthus*	0–40	–
	tall bluebells	MEPA	*Mertensia paniculata*	0–40	–
	purple locoweed	OXLA3	*Oxytropis lambertii*	0–20	–
	Rocky Mountain penstemon	PEST2	*Penstemon strictus*	0–20	–
	Fendler's meadow-rue	THFE	*Thalictrum fendleri*	0–20	–
	Allegheny Mountain goldenbanner	THMO2	*Thermopsis mollis*	0–20	–
	timber milkvetch	ASMIM4	*Astragalus miser var. miser*	0–20	–
	Fendler's sandwort	ARFE3	*Arenaria fendleri*	0–20	–
Shrub/Vine					
3	**Shrubs**			500–800	
	Gambel oak	QUGA	*Quercus gambelii*	100–200	–
	black sagebrush	ARNO4	*Artemisia nova*	0–100	–
	mountain big sagebrush	ARTRV	*Artemisia tridentata ssp. vaseyana*	0–100	–
	alderleaf mountain mahogany	CEMO2	*Cercocarpus montanus*	0–100	–
	snowbrush ceanothus	CEVE	*Ceanothus velutinus*	0–100	–
	antelope bitterbrush	PUTR2	*Purshia tridentata*	0–100	–
	mountain snowberry	SYOR2	*Symphoricarpos oreophilus*	60–100	–
	chokecherry	PRVI	*Prunus virginiana*	0–60	–
	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia*	0–60	–
	silver sagebrush	ARCA13	*Artemisia cana*	0–60	–
	Woods' rose	ROWO	*Rosa woodsii*	0–40	–
	creeping barberry	MARE11	*Mahonia repens*	0–20	–

Animal community

INTERPRETATIONS FOR GRAZING ANIMALS:
Grazing value of this site when it is near its potential plant community is excellent due to high production of palatable grasses and shrubs. There can be a problem with uniform grazing use due to sheep slopes as well as thick brush limiting access. Brush management (usually by prescribed burning) may be considered for forage improvement but is only a temporary measure. This is generally done for improvement of the forage resource for wildlife. To maintain the benefits from prescribed burning, this practice needs to be repeated every three to eight years.

Stocking rates given below are based on continuous use for the entire growing season and are intended only as an initial guide. Forage needs are calculated on the basis of 900 pounds of air-dry forage per animal unit month (AUM). To maintain proper use and allow for forage that disappears through trampling, small herbivore use, weathering, etc., about 35 percent of the palatable forage produced is considered available for grazing by large herbivores.

Condition percent climax

Class vegetation AUM/Ac Ac/AUM Ac/AU
Excellent 76-100 .56-.63 1.8-1.6 22-19
Good 51-75 .63-.44 1.6-2.3 19-28
Fair 26-50 .44-.35 2.3-2.9 28-35
Poor 0-25 .35-.28 2.9-3.6 35-43

Adjustments to the initial stocking rates should be made as needed to obtain proper use. With specialized grazing systems, large livestock breeds, uncontrolled big game, inaccessibility, dormant season use, presence of introduced forage species, seeded rangeland etc., will require stocking rate adjustments.

Site Degradation:
If site degradation is cattle induced, the more palatable grasses such as big bluegrass, elk sedge, Indian ricegrass, Letterman needlegrass, mountain muhly, muttongrass, needleandthread, oniongrass, slender wheatgrass, as well as the fescues and the bromes will decline in relative amounts. Some of the most palatable grasses will drop out of the plant community completely. The shrubs become more abundant as the grasses decline. If site degradation is sheep induced, most of the forbs and the palatable shrubs within reach of the sheep will decline in relative abundance. Plants which can invade and become a part of the plant community as degradation progresses include rubber rabbitbrush, Canada thistle and Japanese brome. Another invader of this site is Kentucky bluegrass whish is very palatable to livestock, however, it produces much less vegetation than the plants native to the site.

Poisonous plants:
Nuttall larkspur (Delphinium nuttallianum) can be poisonous to cattle, horses, and rarely sheep in spring and early summer when other green forage is not available. Poisoning is cumulative. Symptoms include loss of appetite, salvation, muscular twitching, general uneasiness, and staggering gait. In advanced cases the animal falls and lies with feet extended more or less rigidly. Poisoned animals are constipated and severe cases are nauseated and bloating may occur.

Chokecherry can be poisonous to cattle and sheep. Symptoms include extreme salvation, labored breathing, muscle tremors, incoordination, bloating, and convulsions. Symptoms start within 5 minutes and death can occur within 15 minutes. It is most serious in spring and early summer when leaves contain large amounts of toxins as well as a period of short forage and freezing weather.

Silvery lupine (Lupinus argenteus) is poisonous to all livestock occasionally. It is poisonous when other forage is scarce and if hay contains immature lupine pods (especially dangerous during seed stage). Lupine seeds are toxic to sheep when .25 to 1.5 percent of the animals body weight is consumed in one feeding. 150 to 175 gm (.33 to .38 lbs) per day has been lethal to sheep. The toxic substance is a non cumulative alkaloid. Small amounts ingested over a period of time create no difficulties.

Gamble oak can be poisonous to cattle and sheep in early spring during budding and leafing and after a frost. As leaves mature, toxicity decreases.

Lambert crazyweed (Oxytropis lambertii) is poisonous to all animals in all season but especially spring. Poisoning is cumulative. Signs of poisoning appear after 2 to 3 weeks of continuous grazing. With acute poisoning in cows and ewes, abortion and congenital skeletal malformations frequently occur. Animals must eat large amounts for 2 to 5 weeks before death occurs. Constipation, incoordination of muscles and peculiar gait, crazed actions, loss of flesh, loss of sense of direction, and nervousness are the visable signs.

Princesplume can be poisonous to cattle and sheep. Symptoms include animals walking into objects, blind staggers, hoofs grow abnormally and hair falls out. Symptoms occur when feed is scarce.

Timber Poisonvetch can be poisonous to cattle and occasionally sheep and horses. The type of poisoning is cumulative to acute on high selenium soils and also alkaloids. Chronis symptoms include sluggishness, weakness, defective nutrition, impared vision, wander aimlessly, partial paralysis (especially in hind legs) with acute symptoms being nervousness, frequent urination, irregular gait causing heels to knock together, inability to stand, white coloration of the lining of mouth and eyes, rapid weak pulse, difficult breathing, coma, and convulsions. Poisoning occurs in early spring when forage is scarce and during flowering or seeding periods.

INTERPRETATIONS FOR GRAZING WILDLIFE:

Wildlife that are common to this site during some season of the year can include tiger salamander, western rattle snake, western garter snake, rufous-side towhee, green-tailed towhee, dusky flycatcher, dusky flycatcher, downy woodpecker, band-tailed pidgeon, wild turkey, blue grouse, Cooper's hawk, red-tailed hawk, golden eagle, mourning dove, black-headed grosbeak, Virginia's warbler, black-capped chickadee, coyote, black bear, mule deer, Rocky Mountain elk, golden-mantled ground squirrel, and Nuttall's cottontail.

Practices such as prescribed burning, roller beating and chaining are recommended for areas that contain old decadent shrubs. For wildlife that prefer edges such as deer and elk, treatments should be less than 40 acres in size and long and narrow in shape. Treatments for wildlife that prefer interior habitats should be large and square or circular in shape. Diversity of wildlife can be promoted by maintaining a variety of large and small areas in various stages of maturity throughout this site.

Hydrological functions

Soils in this site are grouped into the "C" hydrologic group, as outlined in the Soils of Colorado Loss Factors and Erodibility Hydrologic Groupings 1979 Handbook. Field investigations are needed to determine hydrologic cover conditions and hydrologic curve numbers. Refer to NRCS National Engineering Handbook, Section 4, and Peak Flows in Colorado Handbook for more information.

Recreational uses

This site is in the mountain zone and has adequate precipitation to support a lush growth of vegetation. With a wide variety of herbaceous and shrub vegetation along with interspersed oak many individuals consider this site as scenic areas. Spring brings flowering forbs.

Summers are cool so the area is attractive for summer activities such as picnicking, sightseeing, photography, wildlife watching, hiking, and camping. The site is good wildlife habitat and generally is a good area for hunting deer and elk. Good fall color occurs on the shrubs in most years adding to the attractiveness of this site.

Wood products

No wood products are produced on this site.

Other products

Endangered Plants and Animals.
When this site is in a complex with rock outcrops or adjacent to cliffs, the rock outcrops and cliff areas frequently were historical peregrine falcon nesting sites.

Other information

This site occurs in the following Counties:
Archuleta, Delta, Eagle, Garfield, LaPlata, Mesa, Moffat, Montezuma, Montrose, Pitkin, Rio Blanco, Routt, and San Miguel.

Type locality

Location 1: Eagle County, CO	
Township/Range/Section	TT4S RR87W S25
General legal description	SE ¼, Sec 25, T4S, R87W, Eagle County
Location 2: Routt County, CO	
Township/Range/Section	TT4N RR85W S18
General legal description	Sec 18, T4N, R85W, Route County
Location 3: Rio Blanco County, CO	

Township/Range/Section	TT15S RR93W S12
General legal description	NW ¼ SW ¼, Sec 12, T15S, R93W, Rio Blanco County
Location 4: Eagle County, CO	
Township/Range/Section	TT5S RR83W S34
General legal description	Sec 34, T5S, R83W, Eagle County
Location 5: Mesa County, CO	
Township/Range/Section	TT9S RR94W S34
General legal description	Sec 34, T9S, R94W, Mesa County
Location 6: Moffat County, CO	
Township/Range/Section	TT6N RR90W S32
General legal description	NW ¼, Sec 32, T6N, R90W, Moffat County
Location 7: Routt County, CO	
General legal description	West slope on P&M mine, north of mining area, Route County
Location 8: Garfield County, CO	
Township/Range/Section	TT6S RR88W S36
General legal description	Sec 36, T6S, R88W, Garfield County

Other references

Chapman, S.S., G.E. Griffith, J.M. Omernik, A.B. Price, J. Freeouf, and D.L. Schrupp. 2006. Ecoregions of Colorado. (2 sided color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, VA. Scale 1:1,200,000.

Cleland, D.T.; Freeouf, J.A.; Keys, J.E.; Nowacki, G.J.; Carpenter, C.A.; and McNab, W.H. 2007. Ecological Subregions: Sections and Subsections for the conterminous United States. Gen. Tech. Report WO-76D [Map on CD-ROM] (A.M. Sloan, cartographer). Washington, DC: U.S. Department of Agriculture, Forest Service, presentation scale 1:3,500,000; colored.

Soil Conservation Service (SCS). April 1994. Range Site Description for Brushy Loam #238. : USDA, Denver Colorado

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296.

Western Regional Climate Center. Retrieved from http://www.wrcc.dri.edu/summary/Climsmco.html on December 10, 2018

Contributors

Suzanne Mayne-Kinney

Approval

Kirt Walstad, 3/05/2024

Acknowledgments

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Program Support:
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Scott Woodhall, NRCS MLRA Ecological Site Specialist-QA Phoenix, AZ
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B.J. Shoup, CO State Soil Scientist, Denver
Eugene Backhaus, CO State Resource Conservationist, Denver

Those involved in developing earlier versions of this site description include: Bob Rayer, retired NRCS Soil Scientist; Herman Garcia, retired CO State RMS and NRCS MLRA Ecological Site Specialist-QA Phoenix, AZ.

--Site Development and Testing Plan--:

Future work to validate and further refine the information in this Provisional Ecological Site Description is necessary. This will include field activities to collect low-, medium-, and high-intensity sampling, soil correlations, and analysis of that data.

Additional information and data is required to refine the Plant Production and Annual Production tables for this ecological site. The extent of MLRA 48A must be further investigated.

Field testing of the information contained in this Provisional ESD is required. As this ESD is moved to the Approved ESD level, reviews from the technical team, quality control, quality assurance, and peers will be conducted.

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	J. Murray, C. Holcomb, L. Santana, F. Cummings, A. Jones, P. Billig, S. Jaouen
Contact for lead author	
Date	12/08/2004
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None

2. **Presence of water flow patterns:** None

3. **Number and height of erosional pedestals or terracettes:** None

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not**

bare ground): Expect <10% bareground. Extended drought can cause bareground to increase.

---

5. **Number of gullies and erosion associated with gullies:** None

---

6. **Extent of wind scoured, blowouts and/or depositional areas:** None

---

7. **Amount of litter movement (describe size and distance expected to travel):** Movement expected to be short and minimal.

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Stability class rating anticipated to be 5-6 in the interspaces at soil surface.

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soils are typically deep with a very dark color. Soil surface texture is fine clay loam, well drained.

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub canopy and root structure reduces raindrop impact and slows overland flow providing increased time for infiltration to occur.

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant: Shrubs >

    Sub-dominant: cool season bunchgrass > forbs > sedges >

    Other: cool season rhizamatous grass

    Additional:

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal, expect for weather related (late spring freezes on oak brush)

---

14. **Average percent litter cover (%) and depth (in):** 70-80% litter cover at 1-2 inch depth

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2000 lbs./ac. low precip years; 2500 lbs./ac. average precip years; 4000 lbs./ac. above average precip years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 600 - 800 lbs./ac. or more.

---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Kentucky bluegrass and noxious weeds

---

17. **Perennial plant reproductive capability:** The only limitations are weather-related, wildfire, natural disease, inter-species competition, wildlife, and insects that may temporarily reduce reproductive capability.

Exhibit K
Climate

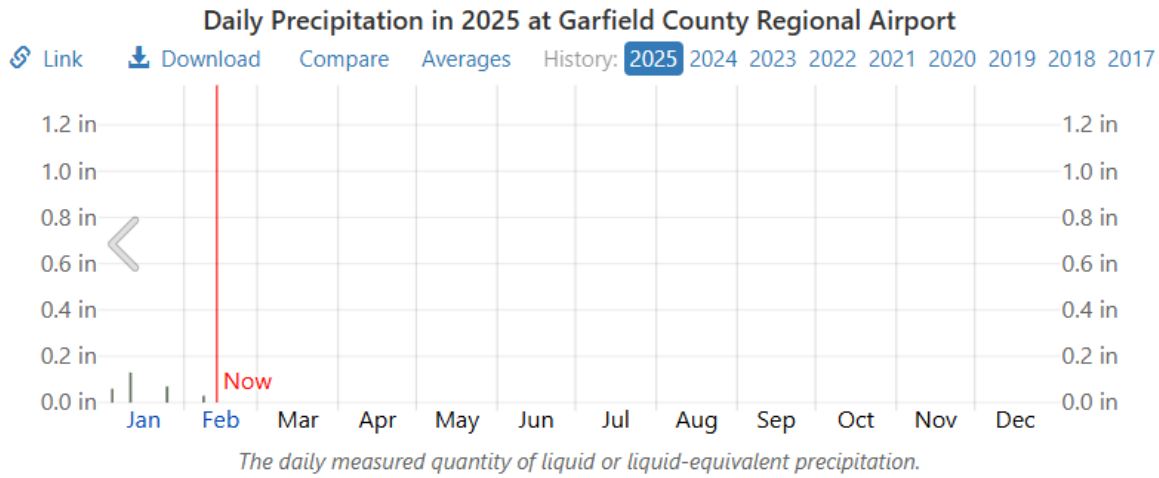
Climate Data has been included for the past five years for annual average, daily, and hourly information on precipitation, temperature, and wind direction and speed.

Climatological Data Annual Summaries

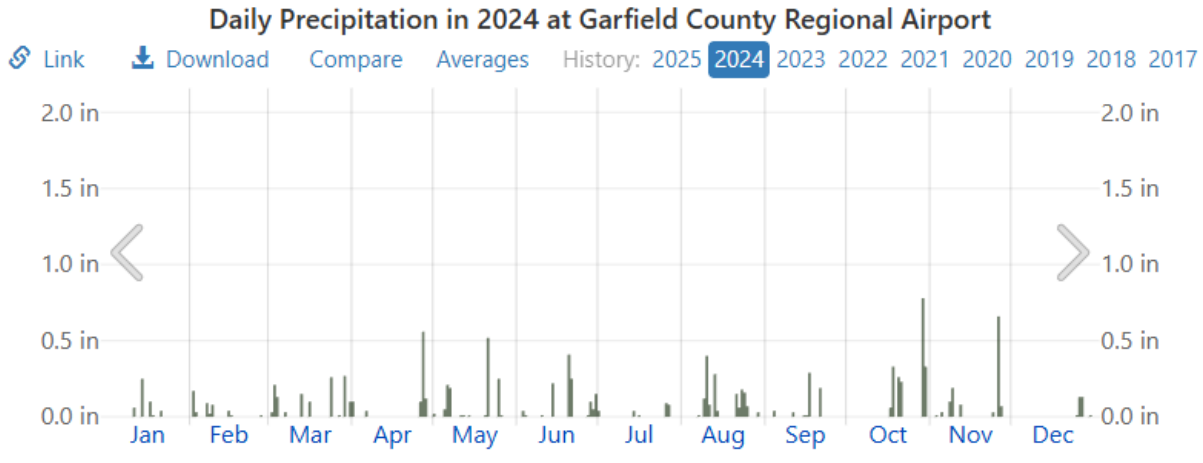
Garfield County Regional Airport – Climate Data

The climate data was taken from the Garfield County Regional Airport because it is the closest weather station with recorded data to the permit area. The information below includes tables with average, daily, and hourly information for precipitation, temperature and wind direction and speed. This data shows comparisons between the years 2025-2021 (past five years).

Precipitation



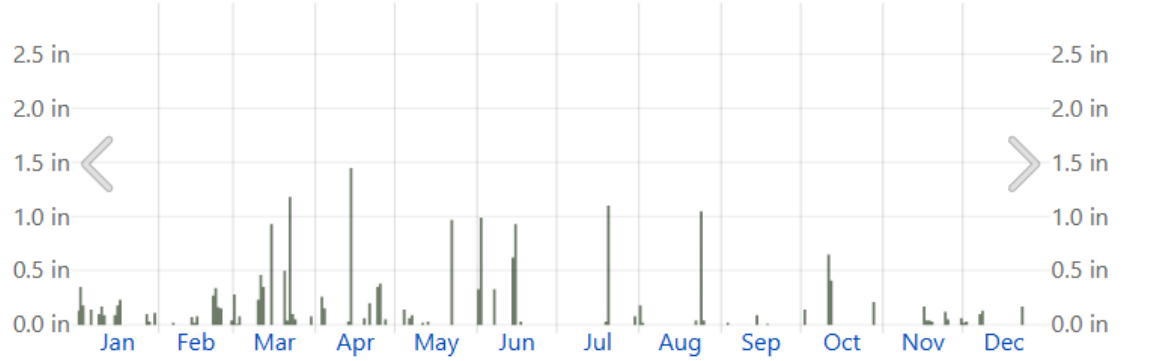
The daily measured quantity of liquid or liquid-equivalent precipitation.



The daily measured quantity of liquid or liquid-equivalent precipitation.

Daily Precipitation in 2023 at Garfield County Regional Airport

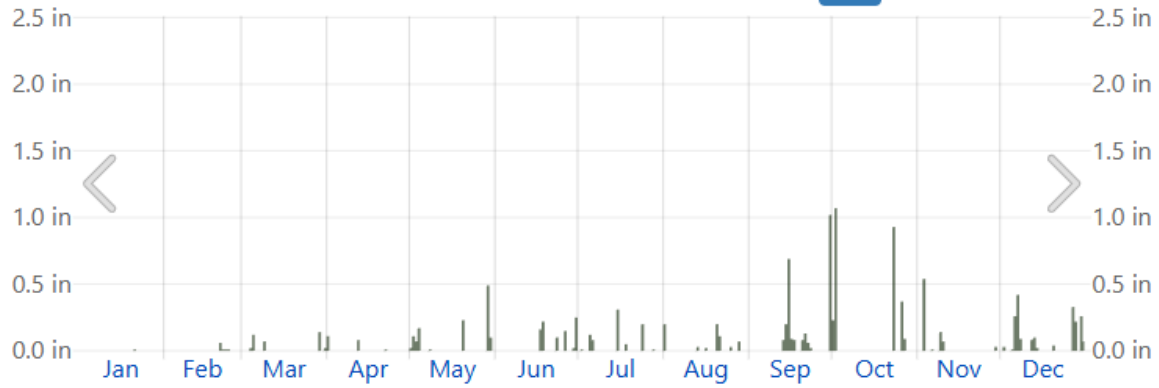
Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017



The daily measured quantity of liquid or liquid-equivalent precipitation.

Daily Precipitation in 2022 at Garfield County Regional Airport

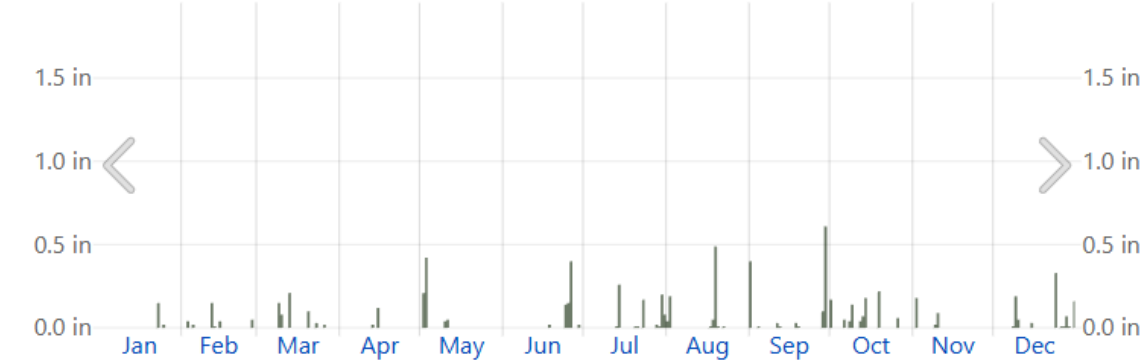
Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017



The daily measured quantity of liquid or liquid-equivalent precipitation.

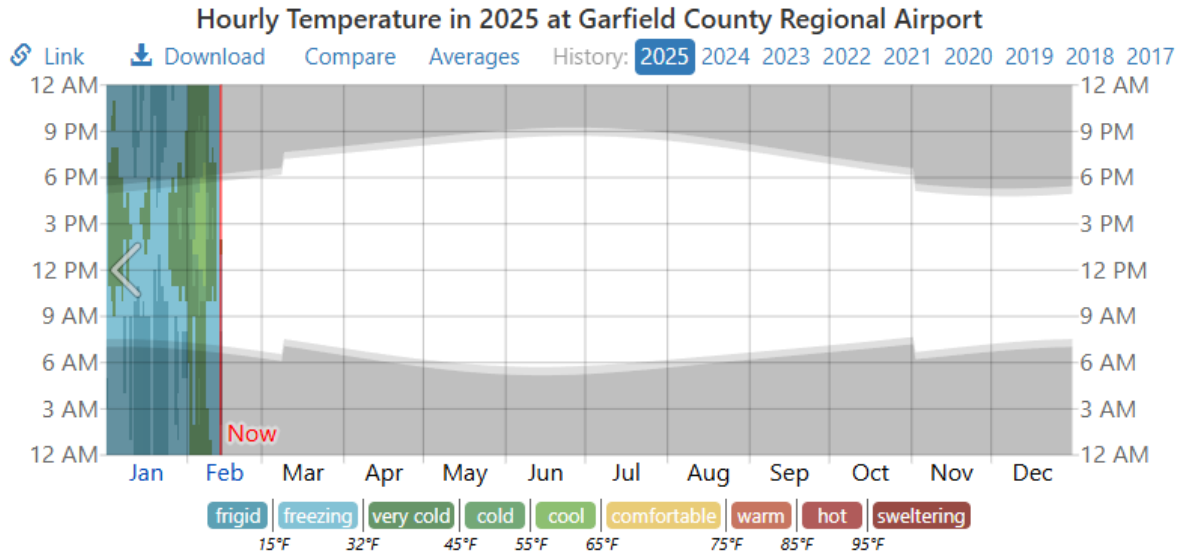
Daily Precipitation in 2021 at Garfield County Regional Airport

Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017

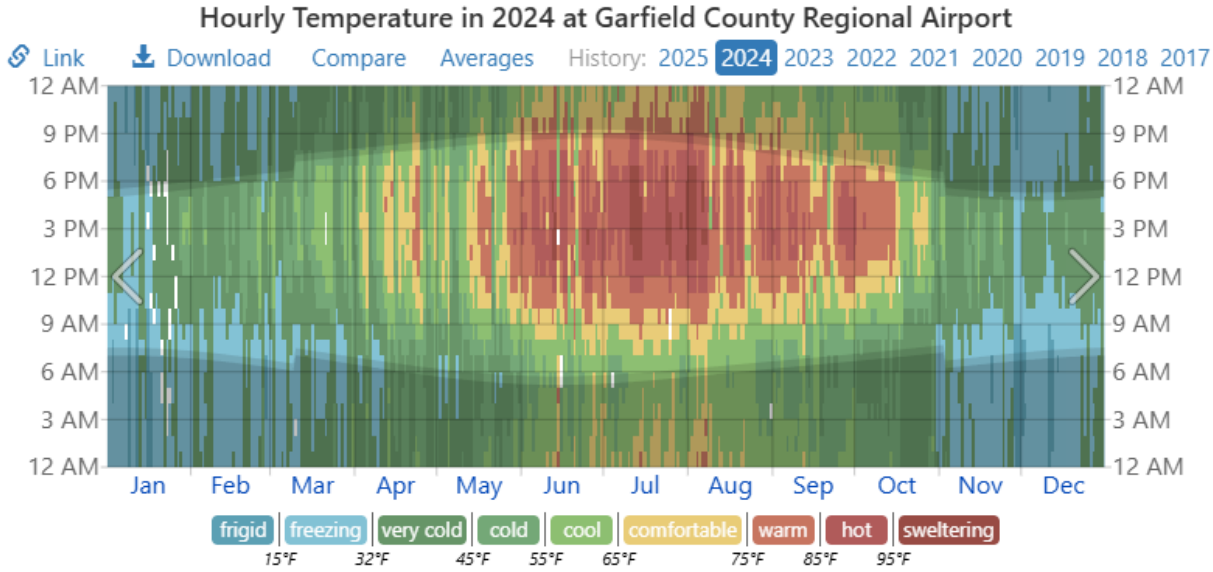


The daily measured quantity of liquid or liquid-equivalent precipitation.

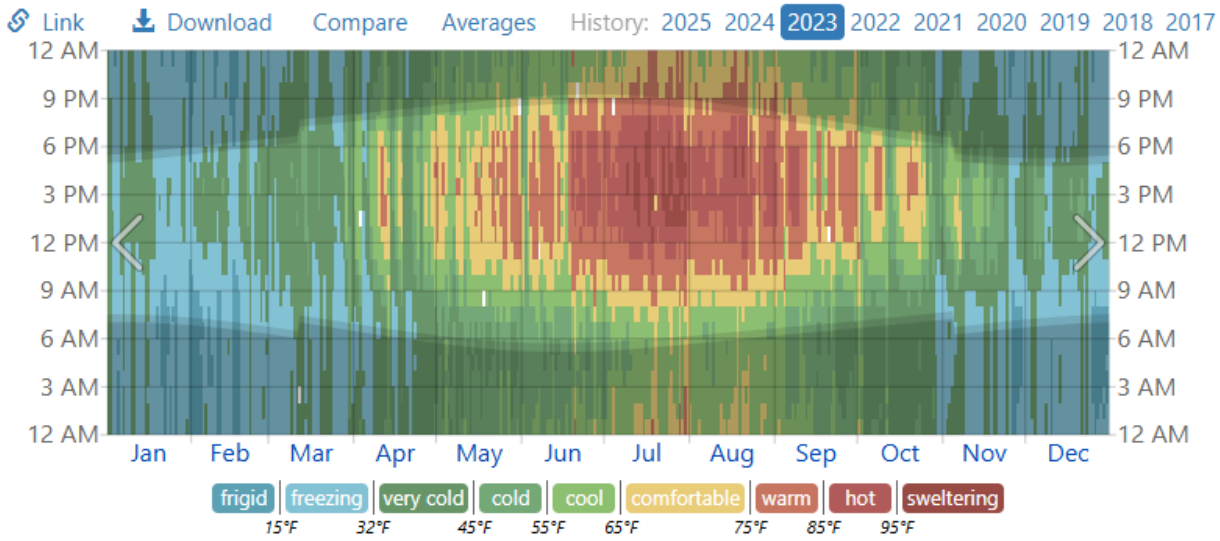
Temperature



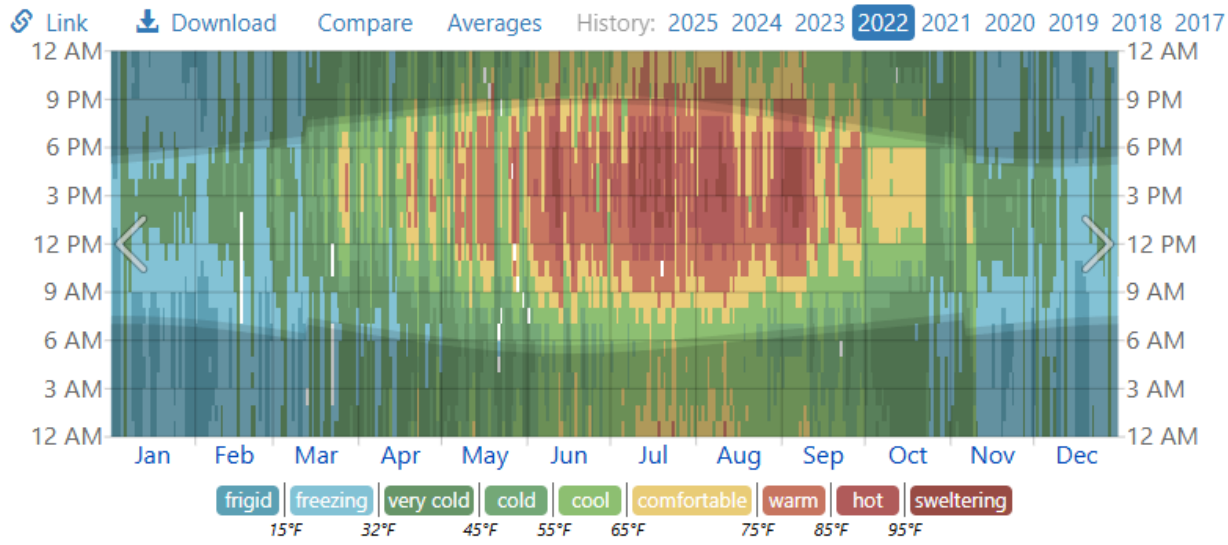
The hourly reported temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

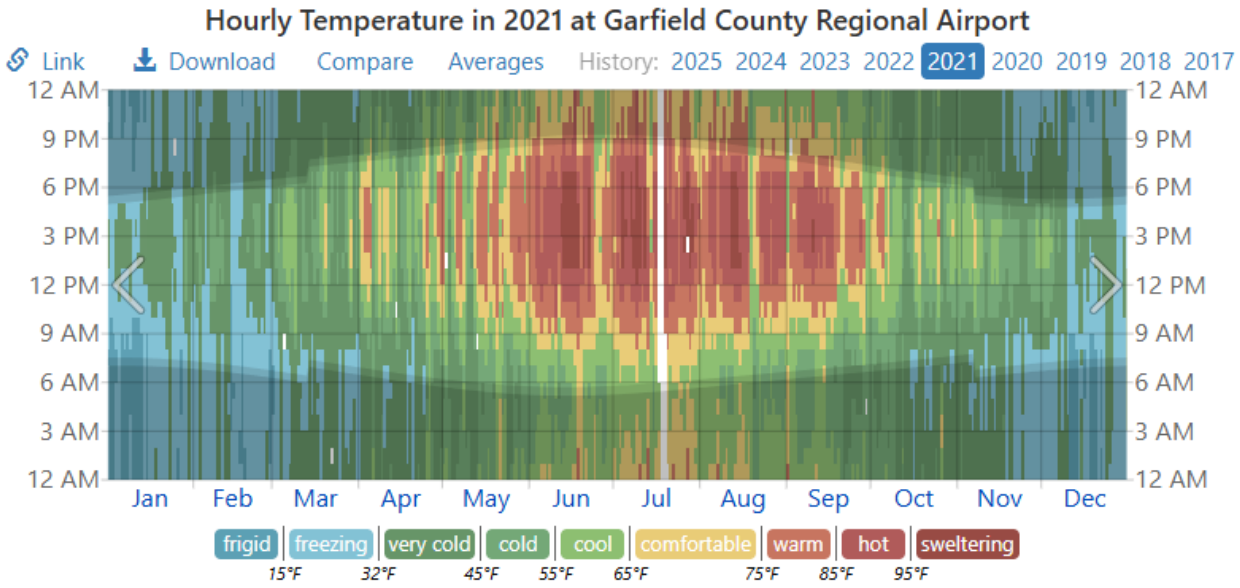


Hourly Temperature in 2023 at Garfield County Regional Airport

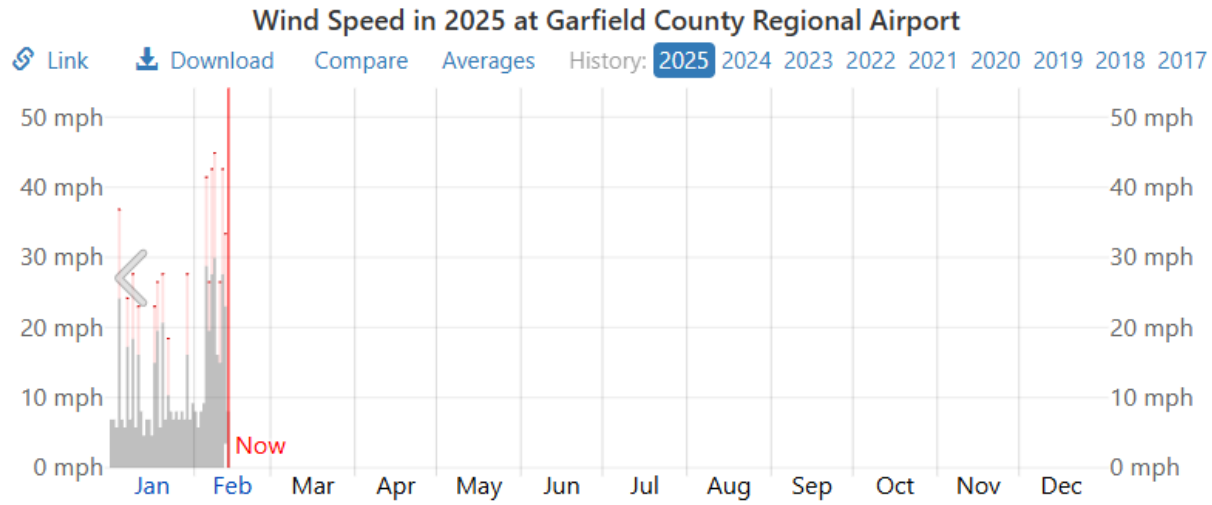


Hourly Temperature in 2022 at Garfield County Regional Airport





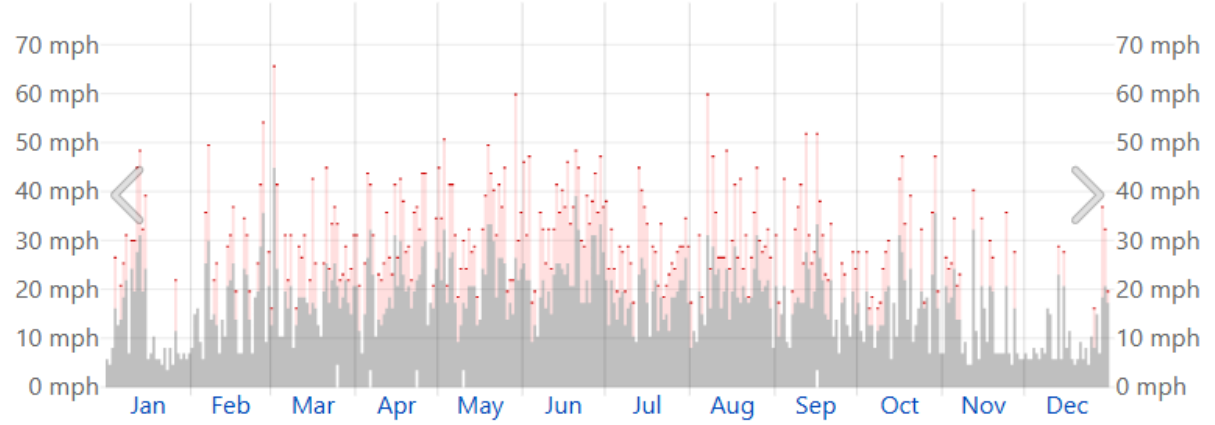
Wind Speed



The daily range of reported wind speeds (gray bars), with maximum gust speeds (red ticks).

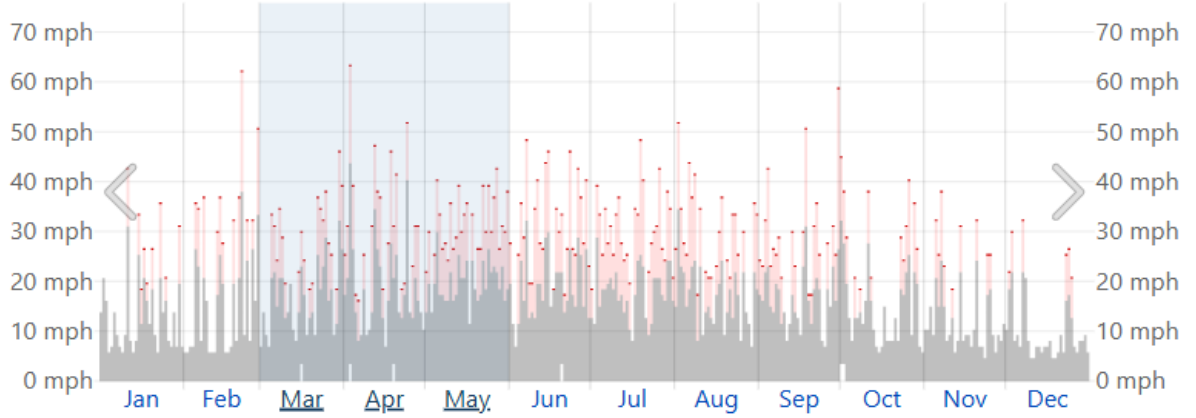
Wind Speed in 2024 at Garfield County Regional Airport

Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017



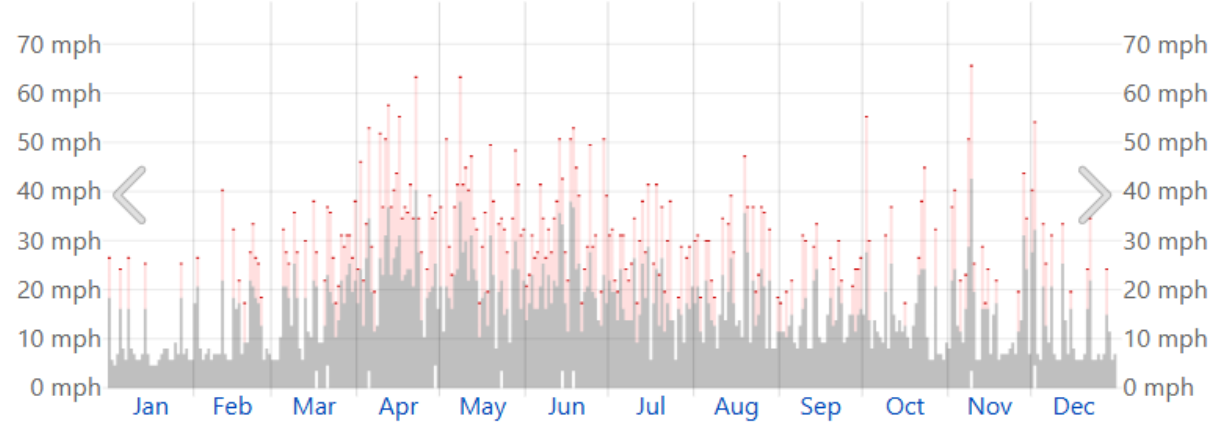
Wind Speed in 2023 at Garfield County Regional Airport

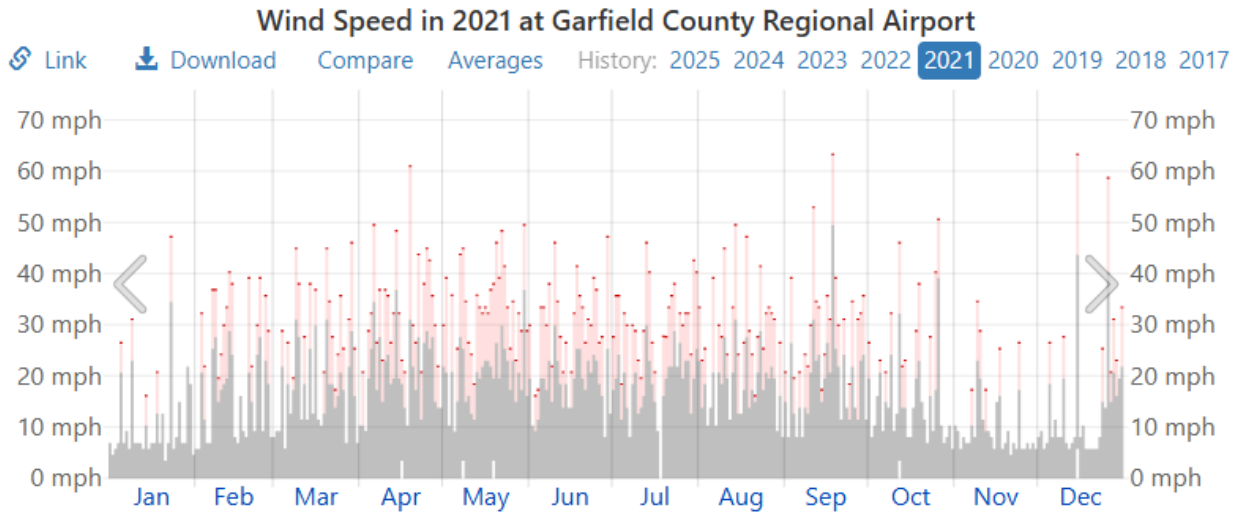
Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017



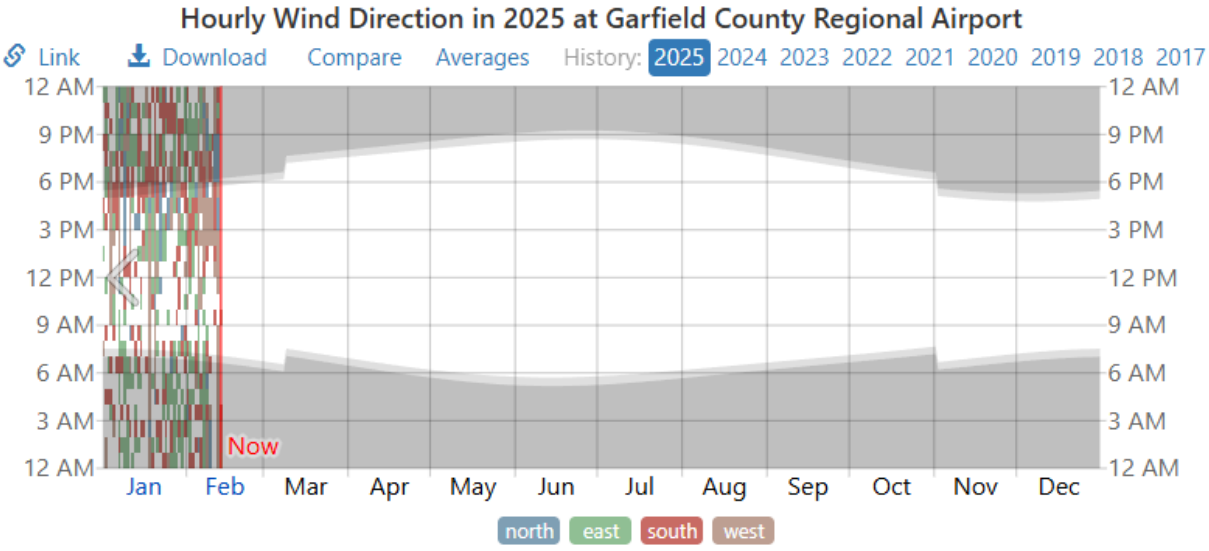
Wind Speed in 2022 at Garfield County Regional Airport

Link Download Compare Averages History: 2025 2024 2023 2022 2021 2020 2019 2018 2017



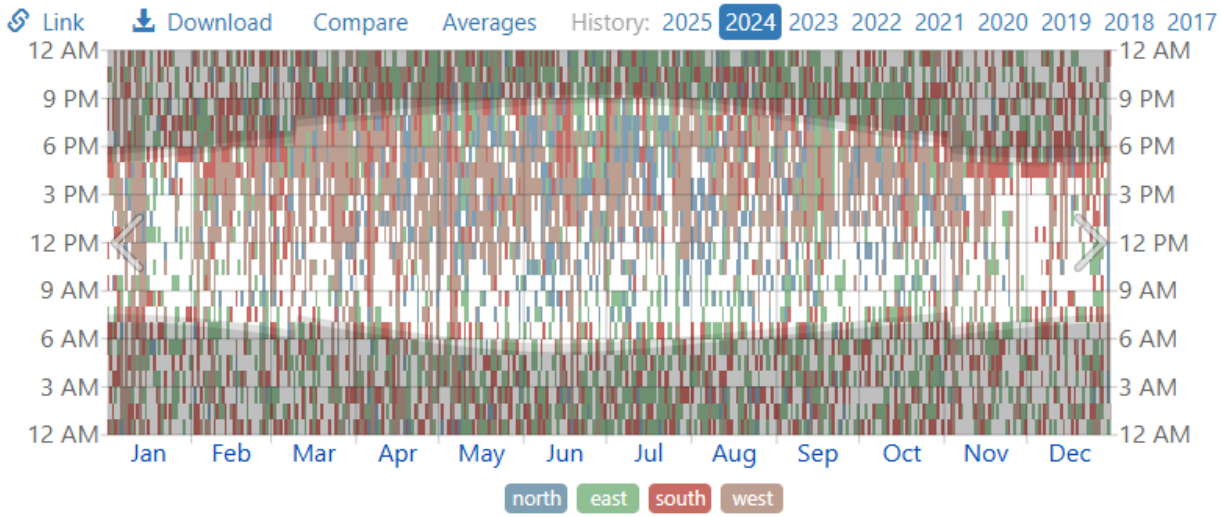


Wind Direction

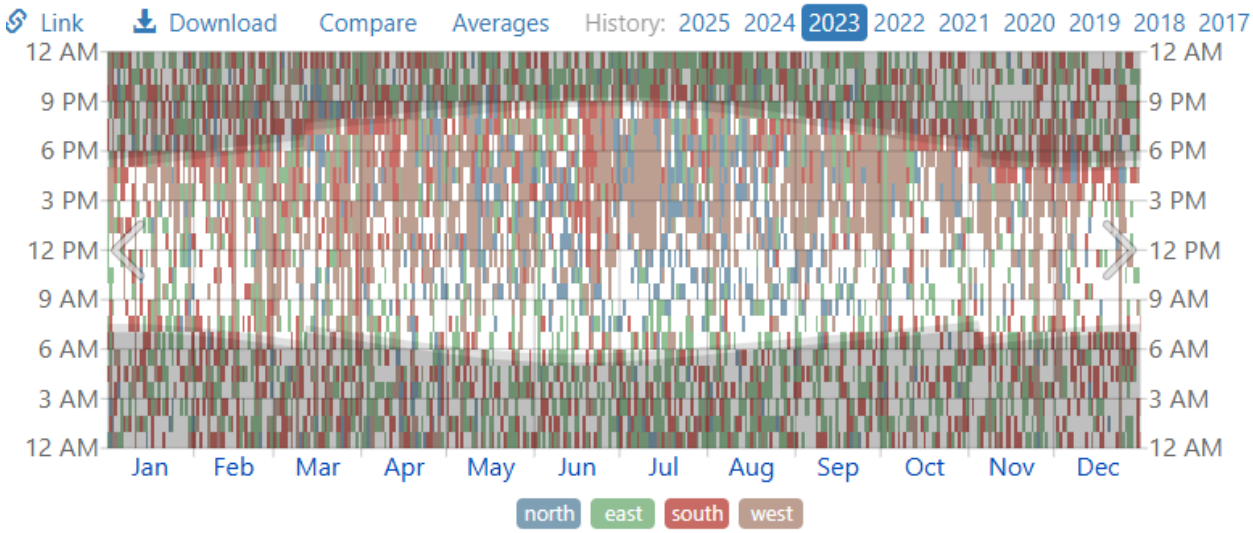


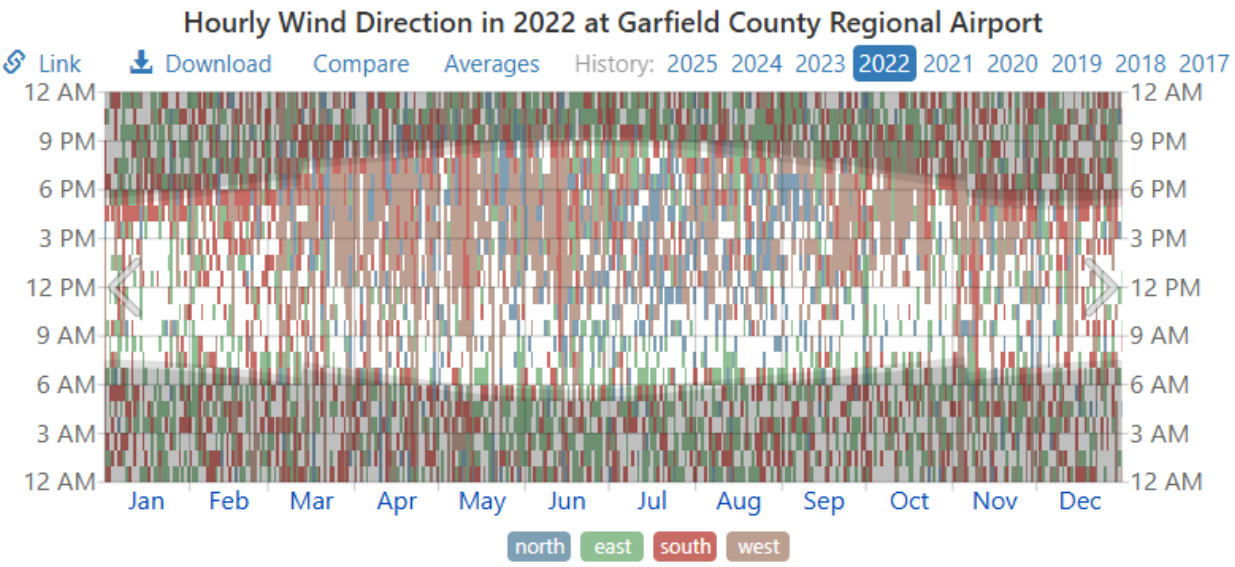
The hourly reported wind direction, color coded by compass point. The shaded overlays indicate night and civil twilight.

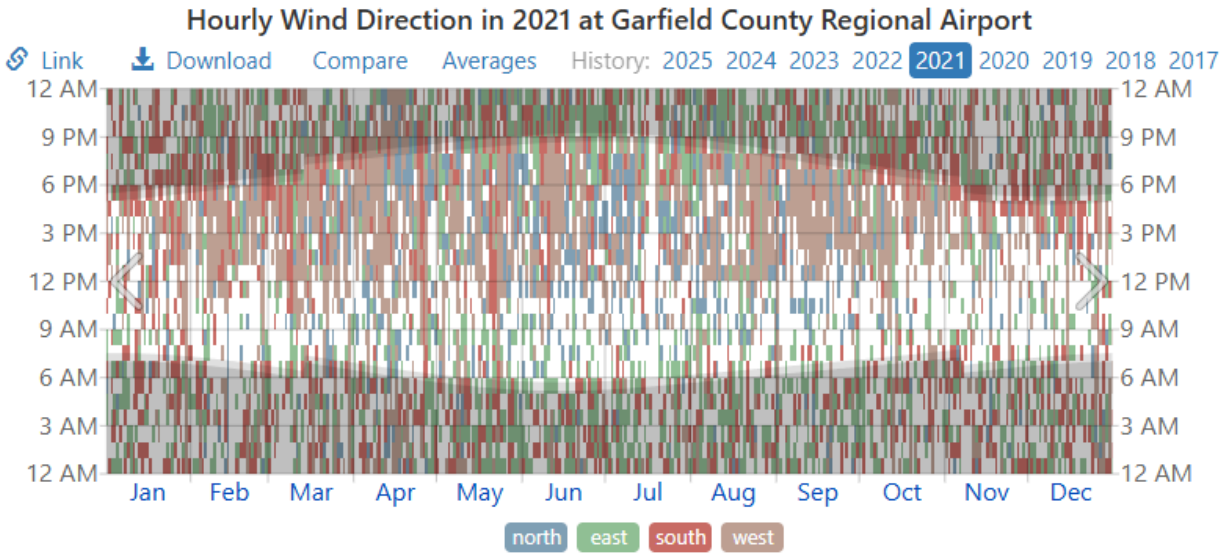
Hourly Wind Direction in 2024 at Garfield County Regional Airport



Hourly Wind Direction in 2023 at Garfield County Regional Airport







Resources

https://weatherspark.com/h/y/145602/2025/Historical-Weather-during-2025-at-Garfield-County-Regional-Airport-Colorado-United-States#Figures-Temperature

Exhibit L
Reclamation Costs

The reclamation cost estimate is included in Exhibit L-1.

Jackrabbit Gravel Quarry
Reclamation Estimate
2/20/2025

Max disturbance (acres) 5.96
Affected area (acres) 13.22

Item	Unit	Unit Cost	Quantity	Total Cost
Finish grading (Prep for decompaction)	Acre	$ 3,800.00	5.96	$ 22,648.00
Decompaction (Rome Disc)	Acre	$ 600.00	5.96	$ 3,576.00
Drill Seeding(Including supplements)	Acre	$ 9,500.00	5.96	$ 56,620.00
Highwall Slope Reduction (Cut/fill)	Cubic Yards	$ 2.30	12,844	$ 29,541.20
Weed Control	Acre	$ 200.00	5.96	$ 1,192.00
TOTAL DIRECT RECLAMATION COSTS				$ 113,577.20
Overhead, management, profit		5%		$ 5,678.86
TOTAL				**$ 119,256.06**

Exhibit M
Other Permits and Licenses

The operator has or will be seeking the following permits:

- Colorado Discharge Permit for Discharges from Sand and Gravel Mining and Processing (Stormwater ONLY), issued by Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD).
- This site has been managed under an active Master Plan of Development for Oil and Gas under the General Construction Stormwater Permit, issued by CDPHE WQCD.
- County Special Use permit from Garfield County, Colorado
- Other permits will be added as necessary.

Exhibit N
Source of Legal Right to Enter

The surface and mineral owner of the property is QB Energy Operating, LLC.

A Warranty Deed is included as Exhibit N-1.

999126 08/20/2024 09:43:00 AM Page 1 of 22
Jacklyn K. Harmon, Garfield County, Colorado
Rec Fee: $118.00 Doc Fee: $0.00 eRecorded

When recorded, please return to:

QB Energy Operating, LLC
1001 17th Street, Suite 1600
Denver, Colorado 80202
Attn: Roger Biemans

SURFACE FEE DEED

STATE OF COLORADO	§
	§
COUNTIES OF MESA,	§
GARFIELD AND RIO BLANCO	§

Caerus Piceance LLC, a Colorado limited liability company, with an address of 1001 17th Street, Suite 1600, Denver, Colorado 80202 ("**Grantor**"), for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby GRANT, BARGAIN, TRANSFER, SET OVER AND CONVEY, subject to the exceptions to the conveyance and disclaimers herein contained, unto QB Energy Operating, LLC, a Delaware limited liability company, whose address is 1001 17th Street, Suite 1600, Denver, Colorado 80202 ("**Grantee**"), all of Grantor's right, title, and interest in and to the surface estate of the lands situated in Mesa, Garfield and Rio Blanco Counties, Colorado, described more fully on Exhibit A, attached hereto and made a part hereof, as well as all fixtures and improvements located thereon, and together with all right, title, and interests appurtenant thereto (the "**Surface Fee**"). This Surface Fee Deed (this "**Deed**") is made subject to the terms, covenants, and conditions contained in that certain Purchase and Sale Agreement dated June 12, 2024, by and among Caerus Operating LLC, a Colorado limited liability company, Grantor, Grand Valley Mineral Company LLC, a Delaware limited liability company, Garden Gulch, LLC, a Colorado limited liability company, and Grantee (as the same may be amended or modified from time to time, the "**Purchase Agreement**"). Capitalized terms used but not otherwise defined in this Deed have the meanings given such terms in the Purchase Agreement. If there is a conflict between the terms of this Deed and the terms of the Purchase Agreement, the terms of the Purchase Agreement will control to the extent of the conflict. Grantor and Grantee intend that the terms of the Purchase Agreement not merge into the terms of this Deed. There are no oral agreements between the Parties not set out in writing with respect to the transactions contemplated hereby. **Notwithstanding the foregoing, third parties may conclusively rely on this Deed to vest title to the Surface Fee in Grantee without further recourse or reference to the Purchase Agreement.** The execution and delivery of this Deed by Grantor, and the execution and acceptance of this Deed by Grantee, shall not operate to release or impair any surviving rights or obligations of Grantor or Grantee under the Purchase Agreement.

EXCEPT AS AND TO THE EXTENT EXPRESSLY REPRESENTED OTHERWISE IN ARTICLE 4 OF THE PURCHASE AGREEMENT OR THE CERTIFICATE OF SELLER TO BE DELIVERED AT THE CLOSING PURSUANT TO SECTION 8.2(d) OF THE PURCHASE AGREEMENT, GRANTOR EXPRESSLY

DISCLAIMS, AND GRANTEE WAIVES ANY REPRESENTATION OR WARRANTY, EXPRESS, STATUTORY OR IMPLIED, IN THIS OR ANY OTHER INSTRUMENT, AGREEMENT, OR CONTRACT DELIVERED HEREUNDER OR IN CONNECTION WITH THE TRANSACTIONS CONTEMPLATED HEREUNDER OR THEREUNDER, INCLUDING ANY REPRESENTATION OR WARRANTY, ORAL OR WRITTEN, AS TO (I) TITLE TO ANY OF THE SURFACE FEE, (II) THE CONTENTS, CHARACTER, OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, ANY REPORT OF ANY PETROLEUM ENGINEERING CONSULTANT, OR ANY GEOLOGICAL, SEISMIC DATA, RESERVE DATA, RESERVE REPORTS, RESERVE INFORMATION (ANY ANALYSIS OR INTERPRETATION THEREOF) RELATING TO THE SURFACE FEE, (III) THE EXISTENCE OF ANY PROSPECT, RECOMPLETION, INFILL OR STEP-OUT DRILLING OPPORTUNITIES, (IV) ANY ESTIMATES OF THE VALUE OF THE SURFACE FEE OR FUTURE REVENUES GENERATED BY GRANTEE OR THE SURFACE FEE, (V) THE MAINTENANCE, REPAIR, CONDITION, QUALITY, SUITABILITY, DESIGN, OR MARKETABILITY OF THE SURFACE FEE, (VI) INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT OR (VII) ANY OTHER RECORD, FILES, OR MATERIALS OR INFORMATION (INCLUDING AS TO THE ACCURACY, COMPLETENESS OR CONTENTS OF THE RECORDS) THAT MAY HAVE BEEN MADE AVAILABLE OR COMMUNICATED TO GRANTEE OR ITS AFFILIATES, OR ITS OR THEIR EMPLOYEES, AGENTS, CONSULTANTS, REPRESENTATIVES, OR ADVISORS IN CONNECTION WITH THE TRANSACTIONS CONTEMPLATED BY THIS DEED, THE PURCHASE AGREEMENT OR ANY DISCUSSION OR PRESENTATION RELATING THERETO (INCLUDING ANY ITEMS PROVIDED IN CONNECTION WITH SECTION 6.1 OF THE PURCHASE AGREEMENT); AND EXCEPT AS AND TO THE EXTENT EXPRESSLY REPRESENTED OTHERWISE IN ARTICLE 4 OF THE PURCHASE AGREEMENT OR THE CERTIFICATE OF SELLER TO BE DELIVERED AT THE CLOSING PURSUANT TO SECTION 8.2(d) OF THE PURCHASE AGREEMENT, GRANTOR FURTHER DISCLAIMS, AND GRANTEE WAIVES, ANY REPRESENTATION OR WARRANTY, EXPRESS, STATUTORY OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR CONFORMITY TO MODELS OR SAMPLES OF MATERIALS OR ANY EQUIPMENT, IT BEING EXPRESSLY UNDERSTOOD AND AGREED BY THE PARTIES HERETO THAT EXCEPT AS AND TO THE EXTENT EXPRESSLY REPRESENTED OTHERWISE IN ARTICLE 4 OF THE PURCHASE AGREEMENT OR THE CERTIFICATE OF SELLER TO BE DELIVERED AT THE CLOSING PURSUANT TO SECTION 8.2(d) OF THE PURCHASE AGREEMENT, AND WITHOUT LIMITATIONS OF THE RIGHTS AND OBLIGATIONS IN ARTICLE 12 OF THE PURCHASE AGREEMENT AND ARTICLE 10 OF THE PURCHASE AGREEMENT, THE SURFACE FEE IS BEING TRANSFERRED "AS IS, WHERE IS," WITH ALL FAULTS AND DEFECTS, AND THAT, AS OF CLOSING, GRANTEE HAS MADE OR CAUSED TO BE MADE SUCH INSPECTIONS AS GRANTEE DEEMS APPROPRIATE.

EXCEPT AS AND TO THE EXTENT EXPRESSLY SET FORTH IN THE PURCHASE AGREEMENT, GRANTOR SHALL NOT HAVE ANY LIABILITY IN CONNECTION WITH AND HAS NOT AND WILL NOT MAKE (AND HEREBY DISCLAIMS) ANY REPRESENTATION OR WARRANTY REGARDING ANY

MATTER OR CIRCUMSTANCE RELATING TO ENVIRONMENTAL LIABILITIES, COMPLIANCE WITH ENVIRONMENTAL LAWS, THE RELEASE OF HAZARDOUS SUBSTANCES, HYDROCARBONS OR NORM INTO THE ENVIRONMENT OR THE PROTECTION OF HUMAN HEALTH, SAFETY, NATURAL RESOURCES OR THE ENVIRONMENT, OR ANY OTHER ENVIRONMENTAL CONDITION OF THE SURFACE FEE, AND NOTHING IN THIS DEED, THE PURCHASE AGREEMENT, OR OTHERWISE SHALL BE CONSTRUED AS SUCH A REPRESENTATION OR WARRANTY, AND GRANTEE SHALL BE DEEMED TO BE TAKING THE SURFACE FEE "AS IS, WHERE IS" FOR PURPOSES OF ITS ENVIRONMENTAL CONDITION. EXCEPT AS AND TO THE EXTENT EXPRESSLY SET FORTH IN THE PURCHASE AGREEMENT, GRANTEE HAS INSPECTED, OR WAIVED (AND SHALL BE DEEMED TO HAVE WAIVED) ITS RIGHT TO INSPECT THE SURFACE FEE FOR ALL PURPOSES, AND GRANTEE HAS SATISFIED ITSELF AS TO ITS PHYSICAL AND ENVIRONMENTAL CONDITION, INCLUDING CONDITIONS SPECIFICALLY RELATING TO THE PRESENCE, RELEASE, OR DISPOSAL OF HAZARDOUS SUBSTANCES, SOLID WASTES, ASBESTOS, AND NORM. GRANTEE IS RELYING SOLELY UPON THE TERMS OF THE PURCHASE AGREEMENT, EACH TRANSACTION DOCUMENT, AND ITS OWN INSPECTION OF THE SURFACE FEE. GRANTEE HAS HAD AN OPPORTUNITY TO MAKE ALL SUCH REVIEWS AND INSPECTIONS OF THE SURFACE FEE AND THE RECORDS AS GRANTEE DEEMS NECESSARY OR APPROPRIATE TO CONSUMMATE THE TRANSACTIONS CONTEMPLATED BY THIS DEED.

GRANTOR AND GRANTEE AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE OR ENFORCEABLE, THE DISCLAIMERS OF CERTAIN REPRESENTATIONS AND WARRANTIES CONTAINED IN THIS DEED ARE "CONSPICUOUS" DISCLAIMERS FOR THE PURPOSE OF ANY APPLICABLE LAW.

EXCEPTIONS FROM CONVEYANCE AND WARRANTY: This Deed is made and accepted subject to the following matters: (a) all presently recorded and validly existing easements, rights-of-way, and prescriptive rights, (b) all presently recorded and validly existing restrictions, reservations, covenants, conditions, oil and gas leases, mineral interests, and water interests outstanding in Persons other than Grantor, and (c) all presently unrecorded and validly existing easements and rights-of-way created by Grantor for the benefit of its Affiliates, copies of which have been provided to Grantee prior to the date hereof.

TO HAVE AND TO HOLD the Surface Fee unto Grantee, its successors and assigns, forever, subject, however, to all the terms and conditions of this Deed. This Deed shall be binding upon and inure to the benefit of Grantor and Grantee, and their respective successors and permitted assigns.

Subrogation. To the extent permitted by applicable Law, Grantee shall be and is subrogated to Grantor's and its Affiliates' rights in and to all representations, warranties, and covenants given by Third Parties with respect to the Surface Fee acquired by Grantee. Grantor (on behalf of itself and its Affiliates) hereby grants and transfers to Grantee, its successors and assigns, to the extent so transferable and permitted by Law, the benefit of and the right to enforce the covenants,

representations, and warranties, if any, which Grantor or its Affiliates are entitled to enforce against Third Parties with respect to the Surface Fee acquired by Grantee.

Separate Assignments. The Surface Fee covered by this Deed shall not include the properties and interests covered by that certain (a) Quitclaim Deed (Water Rights) between Grantor and Grantee executed contemporaneously herewith and dated effective as of the Effective Time (the "**Water Deed**"), (b) Assignment and Assumption Agreement between Caerus Operating and Grantee executed contemporaneously herewith and dated effective as of the Effective Time (the "**Equity Assignment**"), or (c) Assignment, Bill of Sale, and Conveyance by and among Caerus Operating LLC, Grantor, Grand Valley Mineral Company LLC, Garden Gulch, LLC, and Grantee executed contemporaneously herewith and dated effective as of the Effective Time (the "**ABOS**", and together with this Deed, the Equity Assignment and the Water Deed, the "**Instruments of Conveyance**"). Grantor and Grantee acknowledge and agree that the Instruments of Conveyance (including any and all recorded counterparts thereof) are intended to COLLECTIVELY convey to Grantee all of the "**Assets**" as defined and described in the Purchase Agreement. Grantor and Grantee acknowledge and agree that the Instruments of Conveyance are not intended to effect multiple conveyances of the same properties or interests in such properties covered hereby or thereby or multiple assumptions by Grantee of the same Assumed Liabilities as described in the Purchase Agreement. Further, Grantor and Grantee acknowledge and agree that they may be required to execute and record separate deeds, assignments and/or other instruments covering certain of the Surface Fee conveyed hereby on forms approved by Governmental Authorities or other Persons to effect the conveyances of such Surface Fee. Any such separate deed, assignment or other instrument (a) shall evidence this Deed and conveyance of the applicable Surface Fee herein made and shall not constitute any additional conveyance of any of the Surface Fee, (b) is not intended to modify, and shall not modify, any of the terms, covenants and conditions or limitations on warranties set forth in this Deed or the Purchase Agreement and is not intended to create, and shall not create, any additional representations, warranties or covenants of or by Grantor or Grantee, and (c) shall be deemed to contain all of the terms and provisions of this Deed, as fully and to all intents and purposes as though the same were set forth at length in such separate deed or assignment.

Assumption. Subject to the terms and conditions of the Purchase Agreement, Grantee does hereby assume and agree to pay, perform, fulfill and discharge (or cause to be paid, performed, fulfilled and discharged) all Assumed Liabilities relating to the Surface Fee acquired by Grantee under this Deed.

Further Assurances. From time to time, Grantor and Grantee shall each execute, acknowledge, and deliver to the other such further instruments and take such other action as may be reasonably requested in order to accomplish more effectively the purposes of this Deed.

Counterparts. This Deed may be executed by Grantor and Grantee in any number of counterparts, each of which shall be deemed an original instrument, but all of which together shall constitute but one and the same instrument.

Miscellaneous. The provisions of Sections 13.3 (Governing Law), 13.5 (Waivers) 13.8 (Amendment) 13.10 (Construction), and 13.15 (Severability) of the Purchase Agreement are hereby incorporated into this Deed by references, and shall apply *mutatis mutandis* as a part hereof.

[Signature Page Follows]

EXECUTED as of the dates of the respective acknowledgments below, but effective for all purposes as of 12:01 a.m. (Mountain Time) on October 1, 2023 (the "**Effective Time**").

GRANTOR:

Caerus Piceance LLC

By: _____
Name: **David H. Keyte**
Title: **Chief Executive Officer**

GRANTEE:

QB Energy Operating, LLC

By: _____
Name: **Roger Biemans**
Title: **President and Chief Executive Officer**

ACKNOWLEDGMENTS

STATE OF COLORADO §
§
CITY AND COUNTY §
OF DENVER §

The foregoing instrument was acknowledged before me on August 15, 2024, by David H. Keyte, as Chief Executive Officer, of Caerus Piceance LLC, a Colorado limited liability company, on behalf of said company.

(Seal)

SAM NIEBRUGGE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20124001146
MY COMMISSION EXPIRES JANUARY 13, 2028

Notary Public in and for the State of Colorado

ACKNOWLEDGMENTS

STATE OF COLORADO §
§
CITY AND COUNTY §
OF DENVER §

The foregoing instrument was acknowledged before me on August 15, 2024, by Roger Biemans as President and Chief Executive Officer of QB Energy Operating, LLC, a Delaware limited liability company, on behalf of said company.

(Seal)

SAM NIEBRUGGE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20124001146
MY COMMISSION EXPIRES JANUARY 13, 2026

Notary Public in and for the State of Colorado

EXHIBIT A

Surface Fee

[See Attached]

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.1771.000	EL PASO PRODUCTION OIL AND GAS COMPANY FKA COSTAL OIL & GAS CORPORATION	FORT COLLINS CONSOLIDATED ROYALTIES INC	1/1/2002			604838	CO	Garfield	Township 6 South, Range 99 West, 6th P.M. Section 31: NESW,NE,N2SE,E2NW,L10,L11,L5,L6,L7,L8,L9 Section 32: N2,N2S2,L1,L2,L3,L4 Section 33: N2S2,N2,L1,L2,L3,L4 Section 34: N2S2,S2N2,NENW,SWNWNW,E2NWNW,NENE,W2NWNE,SENWNE,L1,L2,L3,L4 Section 35: NWNW,N2S2,NE,SENENW,S2NW,L1,L2,L3,L4 Section 36: E2NWNW,N2S2,S2N2,W2NENW,S2N2NE,L1,L2,L3,L4	TAX PARCEL NO 241504100001
CO.004.1771.000	EL PASO PRODUCTION OIL AND GAS COMPANY FKA COSTAL OIL & GAS CORPORATION	FORT COLLINS CONSOLIDATED ROYALTIES INC	1/1/2002			604838	CO	Garfield	Township 7 South, Range 98 West, 6th P.M. Section 5: SW Section 6: SENW,E2SW,SE,L3,L4,L5,L6,L7 Section 7: N2SE,E2NW,NE,NESW,N2S2SE,N2SESW,L1,L2,L3,L4 Section 8: N2SW,NW	TAX PARCEL NO 241504100001
CO.004.1771.000	EL PASO PRODUCTION OIL AND GAS COMPANY FKA COSTAL OIL & GAS CORPORATION	FORT COLLINS CONSOLIDATED ROYALTIES INC	1/1/2002			604838	CO	Garfield	Township 7 South, Range 99 West, 6th P.M. Section 1: SWNE,S2NW,SW,W2SE,L10,L11,L12,L13,L14,L15,L7,L8,L9 Section 2: S2,S2N2,L5,L6,L7, NENW Section 3: N2S2S2SW,S2N2,N2SW,N2S2SW,N2SE,SWSE,SESE,L10,L11,L5,L6,L8,L9 Section 4: S2N2,SW,N2SE,N2S2SE,N2S2S2SE,L10,L11,L6,L7,L8,L9 Section 5: S2,S2N2,L5,L6,L7,L8 Section 6: S2NE,SENW,E2SW,SE,L10,L11,L12,L13,L14,L8,L9 Section 7: N2NE,NENW,L5 Section 8: NWNE,N2NW Section 9: NWNW,NENW Section 10: N2NE,SENE Section 11: N2S2N2,NENW,N2NE,NWNW,N2S2S2N2 Section 12: NW,W2SE,W2NE,L1,L2,L3,L4	TAX PARCEL NO 241504100001
CO.004.1820.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655349	CO	Garfield	Township 7 South, Range 95 West, 6th P.M Section 6: THOSE LANDS DESCRIBED IN THAT DEED RECORDED AS RECEPTION NO. 655349 Section 7: THOSE LANDS DESCRIBED IN THAT DEED RECORDED AS RECEPTION NO. 655349	TAX PARCEL NO 240706400002
CO.004.2505.000	EXXON MOBIL CORPORATION	ENCANA OIL & GAS (USA) INC	7/1/2006			887706	CO	Garfield	Township 4 South, Range 97 West, 6th P.M. Section 32: N2N2 TAX PARCEL NO 191332100008, E2NE Section 33: W2NW, NWSW Section 34: ALL Section 35: ALL Section 36: S2,N2N2	TAX PARCEL NO'S 191332100008 & 191335100007

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO.	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 4 South, Range 95 West, 6th P.M. Section 19: ALL EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 22: E2 Section 23: E2, E2W2, NENW Section 24: ALL Section 25: ALL Section 26: ALL Section 27: E2, ALL OF W2 EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 29: ALL EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 30: ALL EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 31: ALL Section 32: ALL Section 33: ALL EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 34: E2, NW EXCEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 35: N2 Section 36: N2NE, NW, N2S2NE	TAX PARCEL NO 191727400012 & 191724100016
CO.004.2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 4 South, Range 96 West, 6th P.M. Section 22: LOTS 1(NWNE 40.44), 2(SWNE 40.34), 3(NESE 42.09), 4(NWSE 41.59), 5(NESW 40.87), 6(NWSW 40.37), NW, S2S2 Section 23: LOTS 1(NENW 40.50), 2(SENW 40.37), 4(NWSE 42.81), 5(NESW 42.78), 6(NWSW 42.52), 7(NESE 45.24), 8(SESE 42.29), NE, S2SW, SWSE Section 24: LOTS 1(NENE 40.49), 2(NWNE 40.66), 3(NENW 40.83), 4(NWNW 41.00), S2N2, S2 Section 25: ALL Section 26: ALL Section 27: ALL Section 28: E2 Section 33: THAT PORTION THAT FALLS WITHIN TAX PARCEL NO 191727400012 Section 34: LOTS 1(SWSW 42.70), 2(SESW 42.57), 3(SWSE 42.45), 4(SESE 42.32), N2, N2S2 Section 35: LOTS 1(SWSW 42.19), 2(SESW 42.06), 3(SWSE 41.92), 4(SESE 41.79), N2, N2S2 Section 36: LOTS 1(NENE 40.85), 2(NWNE 41.10), 3(NENW 41.34), 4(NWNW 41.60), 5(SWSW 40.12), 6(SESW 40.12), S2N2, N2SW	TAX PARCEL NO 191727400012

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO 004 2560 001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/1/2004			655347	CO	Garfield	Township 5 South, Range 95 West, 6th P.M. Section 4: LOTS 1(NENE) 56.67), 4(NWNW 56.71), 5(NWNE 36.68), 6(NWNE 20.00), 7 (NENW 36.70), 8(NENW 20.00), S2N2 Section 15: S2, S2N2, MORE PARTICULARLY DESCRIBED AS: A TRACT LYING WITH SECS 15 & 22 MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS (SEE PAGE A-56 OF EXHIBIT-SCHEDULE 1-A47) Section 16: N2S2, S2N2, MORE PARTICULARLY DESCRIBED AS ALL THAT PART LYING SOUTH OF THE SOUTHERNMOST MAHOGANY MARKER, a.k.a HOFFMAN PLACER MINING CLAIM no. 34, HOFFMAN no. 35 (N2S2 OF SEC 16 BEING A PORTION THEREOF), no. 36 (S2N2 OF SEC 16, BEING A PORTION THEREOF) CONTAINING 386 ACRES Section 17: N2S2, ALL THAT PART OF THE N2S2 LYING SOUTH OF THE SOUTHERNMOST MAHOGANY MARKER, aka HOFFMAN PLACER MINING CLAIM #50 (N2S2); HOFFMAN #51 (S2S2) CONTAINING 201.00 ACRES Section 19: LOTS 1(NENE 40.00), 2(NWNW 40.00), 3(NWNW 21.41), 4(SWNW 21.42), 5 (SWNW 40.00), 6(SENW 40.00), 7(NESW 40.00), 8(NWSW 40.00), 9(NWSW 21.43), 10(SWSW 21.35), 11(SWSW 40.00), 12(SESW 40.00), E2 Section 20: ALL Section 21: ALL Section 22: ALL Section 27: ALL Section 28: ALL Section 29: ALL Section 30: ALL THAT PART OF SECTION LYING IN TAX PARCEL NO 213527400015 Section 31: LOTS 1(NENW 40.00), 2(NWNW 40.00), 3(NWNW 21.79), 4(SWNW 21.93), 5 (SWNW 40.00), 6(SENW 40.00), 7(NESW 40.00), 8(NWSW 40.00), 9(NWSW 22.07), 10(SWSW 22.21), 11(SWSW 40.00), 12(SESW 40.00), E2	213527300015

Exhibit A-6 - Fee Surface

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SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO 004 2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 5 South, Range 96 West, 6th P.M. Section 2: LOT 4(NWNW 41.03), SW, LESS AND EXCEPT THOSE PORTIONS CONVEYED TO EXXON SWD RECORDED IN Bk. 640, Pg. 869, Entry 348389 Section 3: ALL Section 4: ALL Section 5: ALL Section 9: ALL Section 8: ALL Section 10: ALL Section 11: W2, W2SE LESS AND EXCEPT THOSE PORTIONS CONVEYED TO EXXON BY SWD RECORDED IN BK 640, PG 869, ENTRY 348389 Section 14: W2NE, SENE, W2, SE Section 15: NW, S2, NENE, W2NE Section 16: ALL Section 17: E2 Section 21: ALL Section 22: ALL Section 23: ALL Section 24: ALL Section 25: LOTS 1(SWNE 37.84), 2(SENE 37.42), 3(4.78 SENE & SWNE), 4(NESE 10.03), 5(NWSE 33.48), 6(NWSE 6.55), W2, N2NE, SWSE Section 26: ALL Section 27: ALL Section 28: ALL Section 33: N2N2 LESS AND EXCEPT THW WEST 34 RODS OF THE NWNW CONTAINING 16 ACRES, MORE OR LESS Section 34: SENW, NE, N2NW Section 35: N2	TAX PARCEL NO 213527300015

Exhibit A-6 - Fee Surface

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SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 1: LOTS 3(NENE 43.51), 4(NWNE 43.51), 5(NENW 43.31), 6(NWNW 43.21), 7 (NWNW 40.00), 8(NENW 40.00), 9(NWNE 40.00), 10(NENE 40.00), 11(SENE 40.00), 12(SWNE 40.00), 13(SENW 40.00), 14(SWNW 40.00) Section 2: LOTS 1(NENE 43.12), 2(NWNW 43.05), 3(NENW 42.97), 4(NWNW 42.90), 5 (NWNW 40.00), 6(NENW 40.00), 7(NWNE 40.00), 8(NENE 40.00), 9(SENE 40.00), 10(SWNE 40.00), 11(SENW 40.00), 12(SWNW 40.00), S2 Section 3: LOTS 1(NENE 42.81), 2(NWNE 42.72), 3(NENW 42.63), 4(NWNW 20.87), 5 (NWNW 19.63), 6(NENW 40.00), 7(NWNE 40.00), 8(NENE 40.00), 9(SENE 40.00), 10(SWNE 40.00), 11(SENW 40.00), 12(SWNW 19.85), 13(NWSW 19.67), 14(SWSW 19.69), SE, E2SW Section 4: E2 THAT PORTION LYING WITHIN TAX PARCEL NO 213527300015 Section 9: LOTS 1(NENE 44.30), 2(NWNE 44.01), 3(NENW 42.51), 4(NWNW 42.21), 5 (SENW 42.40), 6(SWNE 43.67), 7(SENE 43.95), 8(NESE 40.60), 9(NWSE 40.85), 10(NESW 40.51), 11(NWSW 40.77), 12(SWSW 40.86), 13(SESW 40.63), 14(SWSE 40.53), 15(SESE 40.28), SWNW (ALL) EXCEPT THAT PORTION OF COUNTY ROAD 215 THAT CROSSES THE SUBJECT PROPERTY (SEE EXHIBIT A "RESERVOIR PARCEL") Section 10: ALL Section 15: W2E2, W2 Section 16: LOTS(1(NWNW 19.70), 2(SWNW 19.72), 3(NWSW 19.72), 4(SWSW 27.46), E2, E2W2, EXCEPT THAT PORTION OF COUNTY ROAD 215 THAT CROSSES THE SUBJECT PROPERTY (SEE EXHIBIT A "RESERVOIR PARCEL") Section 21: LOTS 5(SESW 26.95), 6(SWSE 26.97), 7(SESE 26.99), E2NW, NE, N2SE Section 22: LOTS 1(SWSW 27.02), 2(SESW 27.07), N2, N2SW Section 27: LOTS 4(NWNW 40.89), 5(SWNW 41.32), 12(NWSW 40.71) Section 28: LOTS 1(NENE 42.24), 2(NWNE 42.19), 3(NENW 40.60), 5(SWNE	TAX PARCEL NO 213527300015
CO.004.3721.000	Erwin P Knirlberger and Elke M Knirlberger	EnCana Oil & Gas (USA) Inc.	6/1/2011			803426	CO	Garfield	Township 6 South, Range 98 West, 6th P.M Section 33: AS DESCRIBED IN THAT SURVEY PLAT RECORDED AS RECEPTION NUMBER 801646	TAX PARCEL NO 241304200003
CO.004.3721.000	Erwin P Knirlberger and Elke M Knirlberger	EnCana Oil & Gas (USA) Inc.	6/1/2011			803426	CO	Garfield	Township 7 South, Range 98 West, 6th P.M Section 4: AS DESCRIBED IN THAT SURVEY PLAT RECORDED AS RECEPTION NUMBER 801646	TAX PARCEL NO 241304200003
CO.004.3881.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC.	6/11/2004			655348	CO	Garfield	Township 4 South, Range 95 West, 6th P.M. Section 22: EXEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126 Section 23: SENW, E2SW Section 34: SW EXEMPTING THOSE LANDS DESCRIBED IN THE DEED RECORDED AS RECEPTION NO. 893126	TAX PARCEL NO 191722300013, 191723300014 & 191734300015
CO.004.3881.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC.	6/11/2004			655348	CO	Garfield	Township 5 South, Range 95 West, 6th P.M. Section 4: LOTS 5, 7 Section 30: LOTS 10, 11, 13, 13, 14 Section 31: LOTS 2, 3, 4, 9, 10	TAX PARCEL NO 213304100010 & 217104100021
CO.004.3881.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC.	6/11/2004			655348	CO	Garfield	Township 5 South, Range 96 West, 6th P.M. Section 25: LOTS 7, 8 Section 36: N2, SE LESS AND EXCEPT THAT PART OF THE SOUTH 949.99 FEET LYING WEST OF THE CENTERLINE OF PARACHUTE CREEK	TAX PARCEL NO 217104100021
CO.004.3881.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC.	6/11/2004			655348	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 4: LOTS 4, 10, 12, 1, 11 LYING EAST OF THE CENTERLINE OF PARACHUTE CREEK, SENW, SWNW, NWSW Section 9: LOTS 3, 4, 5, 11, SWNW	TAX PARCEL NO 217104100021

Exhibit A-6 - Fee Surface

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SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.3882.000	SLASH EV RANCH LLLP	ENCANA OIL & GAS (USA) INC.	2/12/2014			846361	CO	Rio Blanco	Township 3 South, Range 97 West, 6th P.M. Section 4: W2SW, W2NESW Section 5: SE	TAX PARCEL NO 188305400013 & 191116300009 SEE EXHIBIT "B" - EXCEPTIONS - TO SPECIAL WARRANTY DEED AND BILL OF SALE
CO.004.3882.000	SLASH EV RANCH LLLP	ENCANA OIL & GAS (USA) INC.	2/12/2014			846361	CO	Garfield	Township 4 South, Range 97 West, 6th P.M Section 19: NENENE, E2SWNENE, N2SENENE, N2S2SENENE, N2S2SENENE, S2SWSENENE Section 20: NWNENWNW, NWNWNW, NWSWNWNW, N2SWSWNWNW	TAX PARCEL NO 191319100002
CO.004.3882.000	SLASH EV RANCH LLLP	ENCANA OIL & GAS (USA) INC.	2/12/2014			846361	CO	Rio Blanco	Township 4 South, Range 98 West, 6th P.M Section 16: N2N2SW AKA TAX PARCEL NO 191116300009	TAX PARCEL NO 188305400013 & 191116300009 SEE EXHIBIT "B" - EXCEPTIONS - TO SPECIAL WARRANTY DEED AND BILL OF SALE
CO.004.4133.000	PICEANCE CREEK RANCH LTD	EnCana Oil & Gas (USA) Inc.	3/6/2017			314653	CO	Rio Blanco	Township 4 South, Range 96 West, 6th P.M. Section 14: NW, N2SW, SWSW, NWSE, SWNE Section 15: SESE	TAX PARCEL NO 191514200004
CO.004.4133.000	PICEANCE CREEK RANCH LTD	ENCANA OIL & GAS (USA) INC	3/6/2017			893123	CO	Garfield	Township 4 South, Range 96 West, 6th P.M Section 22: E2NE Section 23: W2NW	TAX PARCEL NO 191523200001
CO.004.4226.000	Marathon Oil Company	Caerus Piceance LLC	5/1/2016			902342	CO	Garfield	Township 5 South, Range 96 West, 6th P.M. Section 29: S2S2 Section 32: NENE, NW, N2SW, SESW, W2NE, SE Section 33: SW	TAX PARCEL NO 213532100009
CO.004.4226.000	Marathon Oil Company	Caerus Piceance LLC	5/1/2016			902342	CO	Garfield	Township 6 South, Range 97 West, 6th P.M Section 1: Lot 10, 11, 12, 15, 17, 18, 19, 22, 23, 24	TAX PARCEL NO 216901100027
CO.004.4415.000	El Paso Production Oil & Gas Company	McMurry Oil Company	1/1/2002	578	598		CO	Rio Blanco	Township 1 North, Range 97 West, 6th P.M. Section 26: PART OF W2 & S2 THAT FALLS INTO TAX PARCEL NO 140335400005 Section 27: PART OF THE E2 THAT FALLS INTO TAX PARCEL NO 140335400005 Section 35: W2NW, W2SW, SESW, LOT 19 (9.03 ACS), LOT 18 (4.16), LOT 16 (12.94) Section 36: S2SW	TAX PARCEL NO 140335400005 FOOTE PROPERTY
CO.004.4415.000	El Paso Production Oil & Gas Company	McMurry Oil Company	1/1/2002	578	598		CO	Rio Blanco	Township 1 South, Range 97 West, 6th P.M. Section 2: LOT 2 Section 28: W2SW Section 29: E2SE Section 32: E2E2 Section 33: W2W2, LESS AND EXCEPT THAT 1.15 ACRE PARCEL (KNOWN AS TAX PARCEL 163133300015)	TAX PARCEL NO 163102100005

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO.	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.4415.000	El Paso Production Oil & Gas Company	McMurry Oil Company	1/1/2002	578	598		CO	Rio Blanco	Township 2 South, Range 97 West, 6th P.M. Section 4: LOT 4, SWNW, W2SW Section 5: LOT 1, SENE, NESE	TAX PARCEL NO 163133300006
CO.004.4416.000	Shell Frontier Oil & Gas Inc.	McMurry Oil LLC	12/1/2004			280548	CO	Rio Blanco	Township 2 South, Range 96 West, 6th P.M. Section 31: S2S2 AS IT FALLS INTO TAX PARCEL NO 188104200306 Section 32: S2S2 Section 33: SWSW	TAX PARCEL NO 188104200306
CO.004.4416.000	Shell Frontier Oil & Gas Inc.	McMurry Oil LLC	12/1/2004			280548	CO	Rio Blanco	Township 2 South, Range 97 West, 6th P.M. Section 27: THAT PART IN THE NE LYING WITHIN TAX PARCEL NO 166127100031	TAX PARCEL NO 166127100031
CO.004.4416.000	Shell Frontier Oil & Gas Inc.	McMurry Oil LLC	12/1/2004			280548	CO	Rio Blanco	Township 3 South, Range 96 West, 6th P.M. Section 3: N2SE, SESE, S2NW, NESW Section 4: LOTS 1 (40.16 ACRES), 2 (40.20 ACRES), 3 (40.18 ACRES), 4 (40.20 ACRES), S2N2, SWSW Section 5: LOT 1 (40.19 ACRES), SENE, E2SE Section 9: W2SE, NWNW Section 10: NENE Section 11: W2NE, N2NW Section 16: W2N Section 26: W2SW Section 33: SENE, E2SE Section 35: N2SW, NW	TAX PARCEL NO 188104200306
CO.004.4416.000	Shell Frontier Oil & Gas Inc.	McMurry Oil LLC	12/1/2004			280548	CO	Rio Blanco	Township 3 South, Range 97 West, 6th P.M. Section 4: LOT 1 (40.24 ACRES), LOT 2 (40.20 ACRES), NWSE, SWNE, SESW Section 8: SESE Section 9: N2NW, SWNW, W2SW Section 17: N2SE, E2NE,SWSE	TAX PARCEL NO 188304100011
CO.004.4426.000	XTO ENERGY INC, EXXON MOBIL CORPORTATION, EXXON ASSET MANAGEMENT COMPANY LLC SURFACE ESTATE	CAERUS CROSS TIMBERS LLC	6/15/2021			958346	CO	Garfield	Township 4 South, Range 96 West, 6th P.M. Section 36: SE	TAX PARCEL NO 191536400004
CO.004.4426.000	XTO ENERGY INC, EXXON MOBIL CORPORTATION, EXXON ASSET MANAGEMENT COMPANY LLC SURFACE ESTATE	CAERUS CROSS TIMBERS LLC	6/15/2021			958346	CO	Garfield	Township 5 South, Range 95 West, 6th P.M. Section 3: S2 EXCEPT THE NORTH 245.44 FEET Section 5: ALL EXCEPT LOT 1 AND LOT 5 Section 6: S2NE, SE, LOT 1, LOT 2, LOT 3, LOT 5, LOT 6, LOT 7, LOT 8, LOT 9, LOT 10, LOT 11, LOT 12, LOT 13, LOT 14, LOT 15, LOT 16, LOT 17, LOT 18 Section 7: NWNE, NWSE, S2NE, S2SE, W2NENE, E2NENE, E2NESE, LOT 1, LOT 2, LOT 3, LOT 4, LOT 5, LOT 6, LOT 7, LOT 8, LOT 9, LOT 10, LOT 11, LOT 12, W2NESE Section 8: ALL Section 9: ALL Section 10: ALL Section 15: N2N2 Section 16: ALL, EXCEPT THAT PART LYING SOUTH OF THE SOUTHERN MOST MAHOGANY MARKER Section 17: N2, N2S2, EXCEPT THAT PART LYING SOUTH OF THE SOUTHERN MOST MAHOGANY MARKER Section 18: ALL	TAX PARCEL NO 213308400006

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.4426.000	XTO ENERGY INC, EXXON MOBIL CORPORATION, EXXON ASSET MANAGEMENT COMPANY LLC SURFACE ESTATE	CAERUS CROSS TIMBERS LLC	6/15/2021			958346	CO	Garfield	Township 5 South, Range 96 West, 6th P.M. Section 1: ALL Section 2: E2SE, SENE, LOT 2 (41.63 NWNE),W2E2, PORTIONS OF W2 Section 11: SESE, W2NE, W2SE, E2W2 Section 12: ALL Section 13: ALL THAT PART LYING EAST OF MAHOGANY MARKER Section 14: NENE	TAX PARCEL NO'S 213308400006 & 213501200013
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 1 South, Range 97 West, 6th P.M. Section 10: SESE Section 11: W2SW Section 15: NE, W2SE, E2SW, NWSW, SWNW Section 21: E2NE, SWNE, W2SE Section 22: N2NW Section 28: E2NW, NWNE Section 33: NW PART OF DESCRIBED ON EXHIBIT A IN THAT CERTAIN SPECIAL WARRANTY DEED DTD DECEMBER 31, 2007 FROM ENCANA OIL & GAS USA INC. TO EXXON MOBIL CORPORATION RECORDED AT DOCUMENT 291241 DEED RECORDS IN RIO BLANCO COUNTY, CO	TAX PARCEL NO 163115100901
CO.004.4427.000	XTO ENERGY INC	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 2 South, Range 97 West, 6th P.M Section 16: NW, E2SW, W2SE EXCEPTING A TRACT APPROXIMATELY ONE ACRE LOCATED IN THE W2SE	TAX PARCEL NO 166109300002
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 2 South, Range 97 West, 6th P.M. Section 9: SW LESS AND EXCEPT A 3.12 ACRE TRACT ON EXHIBIT A TO QCD DTD 9/30/11 BTW EXXON MOBIL CORP. AS GRANTOR AND MEEKER CEMETERY DISTRICT AS GRANTEE RECORDED AT 302600 RIO BLANCO COUNTY RECORDS, S2NW, NWNW, NWSE Section 19: SESW, S2SE, LOT 4 (40.40) Section 20: SWSW, NESW, NWSE, S2NE Section 21: NENW Section 26: S2NW, PART OF THE NESW Section 29: NWNW Section 30: E2NE, NESE, NENW, W2SE, SESW Section 31: NENW, LOT 2 (40.59), LOT 3 (40.45)	TAX PARCEL NO 165923300308
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 2 South, Range 98 West, 6th P.M. Section 23: S2S2 Section 24: S2S2 Section 26: NWNW Section 27: NESW, NWSE, S2NE,W2SW Section 28: SESE Section 32: S2SE, NESE Section 33: S2NW, NENW, N2NE Section 36: E2SE	TAX PARCEL NO 165923300308
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 3 South, Range 97 West, 6th P.M. Section 19: SESE Section 20: NWSW Section 27: SESW, W2SE Section 30: E2NE, SWNE, E2SW, NWSE Section 31: NENW, LOT 2 (39.75), LOT 3 (39.72), LOT 4 (39.69) Section 34: E2NW, SWNW	TAX PARCEL NO 188330300004

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 3 South, Range 98 West, 6th P.M. Section 5: S2NW, NWSW, NWNE, LOT 3 (40.01), LOT 4 (39.95) Section 6: S2NE, W2SE, LOT 1 (39.93), E2SE LESS AND EXCEPT 17.496 ACRES IN TAX ID NO 188506400020, PART OF THE E2SE LESS AND EXCEPT 62.504 ACRES IN TAX PARCEL NO 165923300308 Section 7: NENE, SENE, NESE, W2E2, E2SW, LOT 4 (39.72) Section 22: SWNE, E2SW, NWSE, NENE Section 27: E2NW	TAX PARCEL NO 188522100313
CO.004.4427.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	1/1/2021			322554	CO	Rio Blanco	Township 4 South, Range 97 West, 6th P.M. Section 4: NWSE, S2NE, LOT 1 (40.25)	TAX PARCEL NO 191304100001
CO.004.5109.000	BERRY PETROLEUM COMPANY LLC	CAERUS PICEANCE LLC	8/1/2021			970242	CO	Garfield	Township 5 South, Range 96 West, 6th P.M. Section 32: NENE, NW, N2SW, SESW, W2NE, SE Section 33: SW	TAX PARCEL NO'S 213532100009, PART OF 216901100027 SEE DEED FOR SUBJECT TO AND GRANTOR NON-EXCLUSIVE ROW RESERVATION
CO.004.5109.000	BERRY PETROLEUM COMPANY LLC	CAERUS PICEANCE LLC	8/1/2021			970242	CO	Garfield	Township 6 South, Range 97 West, 6th P.M. Section 1: LOTS 10, 11, 12, 15, 17, 18, 19, 22, 23, 24	TAX PARCEL NO'S 213532100009, PART OF 216901100027 SEE DEED FOR SUBJECT TO AND GRANTOR NON-EXCLUSIVE ROW RESERVATION
CO.004.5120.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 6 South, Range 95 West, 6th P.M. Section 10: S2 AND N2 AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163	TAX PARCEL NO 217112300003

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO.	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.5120.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 6 South, , Range 95 West, 6th P.M. Section 3: SW, W2SE Section 4: E2SE Section 7: E2E2 AND PORTION OF THE S2 AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163 Section 8: S2 AND A PORTION OF THE N2 AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163 Section 9: S2 AND A PORTION OF THE N2 AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163 Section 11: S2 AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163 Section 12: SW AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 832163 Section 13: NWSW AND W2NW A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT NO 837163 AND W2SW A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 14: W2SE, S2SW, N2, NESE, SW A PORTION OF THE SHERIDAN PLACER MINGING CLAIMS NO 1-21 PATENT NO 832163 AND SE A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 15: N2NW, NE, SE, ALL BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT 832163 AND W2NE, SE, NW, AND E2SW BEING A PORTION OF THE LAPAZ MINING CLAIMS NO 1-14	TAX PARCEL NO 217112300003
CO.004.5120.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 6 South, Range 95 West, 6th P.M. Section 16: N2NE, N2NW, AND NWSW ALL BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS 1-21 PATENT NO 832163 AND N2 AND N2S2 AND BEING A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 17: N2NE, N2NW AND SWSE ALL BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT 832163 AND W2 AND E2 AND BEING A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 18: SE, SW, AND A PORTION OF THE N2 AND N2SE AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIMS NO 1-21 PATENT 832163 AND A PORTION OF THE E2NE BEING A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT 767401 Section 19: E2W2 AND A PORTION OF THE N2SW, SESE, NW AND BEING A PORTION OF THE SHERIDAN PLACER MINING CLAIM NO'S 1-21 PATENT NO 832163 AND A PORTION OF THE 22 OF THE LAPAZ PLACER MINING CLAIM NO 1-14 PATENT NO 767401 Section 20: NWNE AND A PORTION OF THE NW AND BEING A PART OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 22: N2SE AND A PORTION OF THE N2SE BEING A PART OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT 767401 Section 23: NWSW, NW, W2NE AND NENE BEING A PORTION OF THE LAPAZ PLACER MINING CLAIMS NO 1-14 PATENT NO 767401 Section 24: NWNW AND BEING A PORTION OF THE LAPAZ PLACER MINING CLAIM NO 1-14 PATENT NO 767401	TAX PARCEL NO 217112300003

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.5120.000	XTO ENERGY INC	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 1: S2 Section 11: ALL Section 12: ALL Section 13: ALL Section 14: ALL Section 15: ALL Section 22: N2SE, LOT 3 (27.11), LOT 4 (27.16) Section 23: ALL Section 24: N2, SW Section 26: LOT 1 (32.21), LOT 3 (32.26), LOT 4 (22.42), NESW, N2NE Section 27: LOT 1 (41.26), LOT 2 (41.34), LOT 3 (40.80), LOT 6 (41.24), LOT 7 (40.91), LOT 8 (40.84), LOT 9 (39.95), LOT 10 (39.86), LOT 11 (40.79), LOT 14 (39.44), SESW Section 34: NWNE, NENW AND A TRACT CONTAINING 5.208 ACRES AS DESCRIBED IN DEED	TAX PARCEL NO 2171123000003
CO.004.5120.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 7 South, Range 95 West, 6th P.M. Section 6: 86.64 ACRES OF LAND MORE OR LESS SITUATED IN LOTS 6, 9, & 10 AND IN THE SESW AND NWSE. A 25 ACRE TRACT SITUATED IN THE NWSE, SESW, AND IN LOTS 8 AND 9, ALL OF LOT 5, AND THAT PART OF LOTS 6 AND 10 LYING NORTHWESTERLY OF THE WILCOX CANAL. A 268,329 SQUARE FOOT TRACT IN THE SESW & LOT 10 ALSO A TRACT AS DESCRIBED IN DEED BOOK 830, PAGE 895 TAX PARCEL 2407063O0157 Section 7: .29 ACRES MORE OR LESS BEING A PORTION OF A TRACT OF LAND CONTAINING 1.97 ACRES SITUATED IN LOT 3, 40.24 ACRES OF LAND AS DESCRIBED IN DEED RECORDED IN GARFIELD COUNTY RECORDS AT REC. NO 328722 BOOK 601, PAGE 626 Section 12: A TRACT IN THE NE, AKA LOT 2 KOA ADDITION, EXCEPTING A TRACT OF LAND CONTAINING .276 ACRES AS DESCRIBED IN BOOK 1392, PAGE 38 TAX PARCEL 240912100031	TAX PARCEL NO 2407063O0157 & 240706400001
CO.004.5120.000	XTO ENERGY INC.	CAERUS CROSS TIMBERS LLC	6/1/2021			958345	CO	Garfield	Township 7 South, Range 96 West, 6th P.M. Section 1: 10.27 ACRES, M-L AS DESCRIBED IN DEED RECORDED IN GARFIELD COUNTY RECORDS AT RECEPTION NO 306157 BOOK 553 PG 55, 9.21 ACRES, M-L BEING PART OF THE SWSW AND AS DESCRIBED IN WARRANTY DEED DTD 11/15/74 RECORDED BOOK PG 466/545, SESW Section 12: 1.5430, A PORTION OF 12.89 ACRES IN THE NENE AND FURTHER DESCRIBED IN DEED, 2.681 ACRES IN THE EAST TEN ACRES OF THE NENE AS DESCRIBED ON EXHIBIT A TO DEED, 3.55 ACRES BEING A PORTION OF A 7.19 ACRE TRACT BEING PART OF THE EAST 10 ACRES OF THE NENE AS FURTHER DESCRIBED IN DEED, 4.214 ACRES IN THE W2W2NENE AND AS FURTHER DESCRIBED IN DEED, NWNE, AND 16.28 ACRES AS DESCRIBED IN DEED, 11.21 ACRES BEING A PORTION OF THE SENW AND SWNE, 53.67 ACRES BEING ALL THAT PART OF THE NENW, S2NW,SWNE, SENE LYING NORTHERLY OF THE NORTHEASTERLY ROW LINE OF COUNTY ROAD AND FURTHER DESCRIBED IN DEED	TAX PARCEL NO 240901300001
CO.004.2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 27: LOTS 4(NWNW), 5(SWNW), 12(NWSW) Section 28: LOTS 1(NENE), 2(NWNE), 3(NENW), 5(SWNE), 6 (SENE), 7(NESE)	TAX PARCEL NO 217128100018

Exhibit A-6 - Fee Surface

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SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO.004.2560.001	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655347	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 33: LOT 5(SENE) Section 34:LOTS 3(SWNW), 10(NWSW)	TAX PARCEL NO 217133100020
CO.004.3881.000	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	6/11/2004			655348	CO	Garfield	Township 5 South, Range 93 West, 6th P.M. Section 4: LOTS 5 & 7	TAX PARCEL NO 213304100010
CO.004.2560.001 & CO.004.2560.001A	UNION OIL COMPANY OF CALIFORNIA	TOM BROWN INC	9/21/2004			660301 & 655347	CO	Garfield	Township 6 South, Range 96 West, 6th P.M. Section 4: A TACT BEGINING AT THE NW CORNER OF THE SW SEC 4(6-96). THIS CORNER IS LOCATED ON THE SOUTH SIDE OF A GULCH RUNNING DOWN THE GULCH SOUTH OF EAST 582' TO THE CREEK THENCE DOWN THE CREEK WEST OF S 207,THENCE W 336' THENCE N 363' TO THE POINT OF BEGINNING	TAX PARCEL NO 217104300015
CO.004.3071.000	FINANCIAL LAND INVESTMENT CORP	TBI PRODUCTION CO INC	9/30/1997			510857	CO	Garfield	Township 7 South, Range 96 West 6TH P.M. Section 36: S2NE, E2NW, NESW, N2SE	240936100001
CO.004.1511.000	Manuel Abt	EnCana Oil & Gas (USA) Inc.	12/31/2002	1424	622	618225	CO	Garfield	Township 6 South, Range 93 West, 6TH P.M. Section 33: SESE TAX PARCEL NO 217733400380	217733400380
CO.004.786.000	Snyder Oil Corporation	Ballard Petroleum LLC	1/1/1999	1110	569	539204	CO	Garfield	Township 6 South, Range 93 West, 6TH P.M. Section 21: E2SENE, E2NESE TAX PARCEL NO 217721100355	217721100355
CO.004.1510.000	Jerry D Galemore	EnCana Oil & Gas (USA) Inc.	10/29/2002	1401	751	613767	CO	Garfield	Township 7 South, Range 93 West, 6TH P.M. Section 4: NESW,L2 TAX PARCEL 240304200054	240304200054
CO.004.1007.000	Gail Hughes	EnCana Oil & Gas (USA) Inc.	4/12/2002	1345	890	601253	CO	Garfield	Township 7 South, Range 93 West, 6TH P.M. Section 9: SESW TAX PARCEL 240309300043	240309300043
CO.004.1008.000	Craig W Peterson and Cheri D Peterson	EnCana Oil & Gas (USA) Inc.	5/17/2002	1356	856	603841	CO	Garfield	Township 7 South, Range 93 West, 6TH P.M. Section 3: SWSW TAX PARCEL 240303300040	240303300040
CO.004.4413.000	DIETER SANDER AND CARINA SANDER	TOM BROWN INC	9/1/2004			659422	CO	Garfield	Township 7 South, Range 95 West, 6TH P.M. Section 21: NW TAX PARCEL NO 240721200051	240721200051
CO.004.121.000	SHEILA A WALLING	NOBLE ENERGY INC	12/8/2011			811959	CO	Garfield	Township 8 South, Range 96 West, 6TH P.M. Section 1: NWSE TAX PARCEL NO 244701400025	244701400025
CO.004.4111.000	WILLIAM R PATTERSON ET AL	ENCANA OIL & GAS (USA) INC	7/24/2013			838542	CO	Garfield	Township 7 South, Range 96 West, 6TH P.M. Section 27: A PART OF SESW TAX PARCEL NO. 240927311001	240927311001
CO.004.5127.000	Dennis R Cadman and David Terpstra	Tom Brown, Inc.	1/21/2004	3575	972	217837	CO	Mesa	Township 10 South, Range 96 West, 6TH P.M. Section 21: THAT PART OF THE NWSW LYING WEST OF THE COUNTY ROAD ROW DESCRIBED BY METES AND BOUNDS ON EXHIBIT A TO WARRANTY DEED	271321300514
CO.004.5128.000	WILDHORSE ENERGY PARTNERS LLC	TBI FIELD SERVICES INC	11/17/2000			1978161	CO	Mesa	Township 10 South, Range 96 West, 6TH P.M. Section 21:SEE DEED FOR M&B DESCRIPTION TAX PARCEL 271321300430	271321300430
CO.004.2856.000	MICHAEL A KYNE	ENCANA OIL & GAS (USA) INC	10/30/2008	4749	285	2464115	CO	Mesa	Township 10 South, Range 96 West, 6TH P.M. Section 1: S2N2SE EXCEPT THE NORTH 24 FEET THEREOF TAX PARCEL NO. 2713-014-00-591 "SUNNY SIDE PROPERTY"	271301400591
CO.004.4112.000	DAYBREAK REALTY LLC	ENCANA OIL & GAS USA INC	8/19/2015			866998	CO	Garfield	Township 7 South, Range 96 West, 6TH P.M. Section 36: NWNE	240936100003
CO.004.1821.000	UMETCO MINERALS CORPORATION	ENCANA GATHERING SERVICES (USA) INC	6/16/2003	1486	491	630589	CO	Garfield	Township 6 South, Range 94 West, 6TH P.M. Section 13: PARCEL B , CAERUS EXEMPTION, AS DESCRIBED IN THE PLAT RECORDED JANUARY 17, 2023 AT RECEPTION 982842	217513100208

Exhibit A-6 - Fee Surface

Attached to and made a part of that certain Surface Fee Deed effective October 1, 2023 by and between Caerus Piceance LLC, Caerus Operating LLC, Garden Gulch LLC, and Grand Valley Mineral Company LLC, as Assignor, and QB Energy Operating, LLC, as Assignee

SURFACE DEED NO	GRANTOR	GRANTEE	DATE	BOOK	PAGE	ENTRY	STATE	COUNTY	LEGAL	TAX PARCEL NO.
CO 004 1523 000	PETER S SHEROWSKI AND NANCY SHEROWSKI	ENCANA OIL & GAS (USA) INC	8/7/2003	1604	295	633882	CO	Garfield	Township 7 South, Range 92 West, 6TH P.M. Section 2: THAT PART OF SW AS DESCRIBED BY METES AND BOUNDS ON EXHIBIT A TO WARRANTY DEED	2401112000219
									Section 3: THAT PART OF SE AS DESCRIBED BY METES AND BOUNDS ON EXHIBIT A TO WARRANTY DEED	
									Section 10: THAT PART OF NE AS DESCRIBED BY METES AND BOUNDS ON EXHIBIT A TO WARRANTY DEED	
									Section 11: THAT PART OF N2 AS DESCRIBED BY METES AND BOUNDS ON EXHIBIT A TO WARRANTY DEED	
CO 004 4422 000	SUNNYSIDE POOL A JOINT VENTURE	ENCANA OIL & GAS (USA) INC	12/14/2006	4317	782	2354338	CO	Mesa	Township 8 South, Range 98 West, 6TH P.M. Section 29: E2E2, W2SE	2447323000024
									Section 32: N2, N2SW	

Exhibit O
Owners of Affected Land (Surface Area) and Owners of Substance to be Mined

No other landowners will be affected by the operation, see Exhibit C-1 Pre-Mining/Mining Plan. The surface and mineral owners of the property are QB Energy Operating, LLC.

There are no owners of Record within 200 feet of the affected lands. No notices were sent to adjacent landowners because they are outside of the 200 feet buffer.

Exhibit P
Municipalities Within Two Miles

There are no municipalities within two miles of the proposed mining area.

Exhibit Q
Proof of Mailing of Notices to County Commissioner and Conservation District

Exhibit Q-1: The application was mailed to the Garfield County Board of County Commissioners on March 7th, 2025, via certified mail.

Exhibit Q-2: The application was mailed to the Bookcliff Conservation District on March 7th, 2025, via certified mail.

Exhibit Q-3: Certified Mailing Receipts.

Exhibit Q-4: Domestic Return Receipts were received on March 11th, 2025.

RIVERCITY CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

Exhibit Q-1

Garfield County
Board of Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL®

7021 1970 0002 2636 4169

7021 1970 0002 2636 4169

U.S. Postal Service™
CERTIFIED MAIL® R
Domestic Mail Only

For delivery information, visit our w

OFFICIA

Certified Mail Fee

Extra Services & Fees (check box, add fee as appro
- Return Receipt (hardcopy)
- Return Receipt (electronic)
- Certified Mail Restricted Delivery
- Adult Signature Required
- Adult Signature Restricted Delivery

Postage

Total Postage and Fees

Garfield County
Board of Commissioner
108 8th Street, Suite 10
Glenwood Springs, CO

PS Form 3800, April 2015 PSN 7530-02-000-9

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Garfield County
Board of Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

9590 9402 8620 3244 2008 70

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4169

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

RIVERCITY CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

Exhibit Q-2

Bookcliff Conservation District
258 Center Drive
Glenwood Springs, CO 81601

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL®

7021 1970 0002 2636 4176

7021 1970 0002 2636 4176

OFFICIAL

Certified Mail Fee $

Extra Services & Fees (check box, add fee as appropriate) $
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $

Total Postage and Fees $

Sent To

Bookcliff Conservation District
258 Center Drive
Glenwood Springs, CO 81601

PS Form 3800, April 2015 PSN 7530-02-000-9047

U.S. Postal Service™
CERTIFIED MAIL® RECEI
Domestic Mail Only

For delivery information, visit our website at w

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bookcliff Conservation District
258 Center Drive
Glenwood Springs, CO 81601

9590 9402 8620 3244 2008 63

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4176

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

ail
ail Restricted Delivery
(over $500)

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Exhibit Q-3

UNITED STATES POSTAL SERVICE.

GRAND JUNCTION
241 N 4TH ST
GRAND JUNCTION, CO 81501-9998
(800)275-8777

03/07/2025 10:16 AM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Glenwood Springs, CO 81601 Weight: 0 lb 2.80 oz Estimated Delivery Date Mon 03/10/2025	1		$2.04
Certified Mail® Tracking #: 70211970000226364169			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2008 70			$4.10
Total			$10.99
First-Class Mail® Large Envelope Glenwood Springs, CO 81601 Weight: 0 lb 2.80 oz Estimated Delivery Date Mon 03/10/2025	1		$2.04
Certified Mail® Tracking #: 70211970000226364176			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2008 63			$4.10
Total			$10.99
Grand Total:			$21.98
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX7507 Approval #: 03137G Transaction #: 128 AID: A0000000031010 Contactless AL: VISA CREDIT			$21.98

Text your tracking number to 28777 (2USPS)

7021 1970 0002 2636 4176

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Glenwood Springs, CO 81601 OFFICIAL USE

Certified Mail Fee $4.85
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $2.04
Total Postage and Fees $10.99

0501 56
MAIN POST OFFICE GRAND JUNCTION, CO 81501
Postmark Here
MAR - 7 2025
03/07/2025

Sent To
Bookcliff Conservation District
258 Center Drive
Glenwood Springs, CO 81601

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 1970 0002 2636 4169

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Glenwood Springs, CO 81601 OFFICIAL USE

Certified Mail Fee $4.85
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $2.04
Total Postage and Fees $10.99

0501 56
MAIN POST OFFICE GRAND JUNCTION, CO 81501
Postmark Here
MAR - 7 2025
03/07/2025

Garfield County
Board of Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Exhibit Q-4

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Garfield County
Board of Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

9590 9402 8620 3244 2008 70

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4169

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Vola Mercer ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Vola Mercer

C. Date of Delivery 3-10-25

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
MAR 11 2025
BY:

3. Service Type

☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Mail
☐ Mail Restricted Delivery
(over $500)

☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bookcliff Conservation District
258 Center Drive
Glenwood Springs, CO 81601

9590 9402 8620 3244 2008 63

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4176

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Emily Schwalle

C. Date of Delivery 03/10/2025

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
MAR 11 2025
BY:

3. Service Type

☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Mail
☐ Mail Restricted Delivery
(over $500)

☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Exhibit R
Proof of Filing with County Clerk and Recorder

Included as Exhibit R-1 is a receipt indicating proof of filing with the Garfield County Clerk and Recorder for public review, pursuant to Rule 1.6.2(1)(c).

Exhibit R-1

RIVERCITY CONSULTANTS

215 PITKIN AVENUE, UNIT 201
GRAND JUNCTION, CO 81501

970-241-4722
970-241-8841 FAX
Email: info@rccwest.com

LETTER OF TRANSMITTAL

To: Garfield County Clerk & Recorder From: Courtney Patch – River City Consultants	Date: April 29, 2025 RE: Jackrabbit Gravel Querry Division of Mining & Safety 112 Application

- **We are delivering:**

Copies	Description
1	Copy of the Construction Material Regular (112) Operation Reclamation Permit Application Package for Public Review.

- **Transmitted as checked below:**

☐ For your information ☐ As requested ☑ Other (see remarks)

☐ For your approval ☐ Approved

☐ For your use ☐ Returned as requested

- **Remarks:**

As required per the application (Rule 1.6.2(1)(c)), a copy is on file with the Garfield County Clerk and Recorder's office for Public Review.

RECEIVED BY: Edna E. Place DATE: 4-29-2025

PRINTED NAME: Edna E Place

GARFIELD COUNTY CLERK AND RECORDER

S:\PROJECTS\1770 Caerus Oil & Gas\034 P17 Rock Quarry Permit\Design\Permit\Exhibit R - Proof of Filing with County Clerk\RCC-Transmittal Clerk & Recorder.doc

Exhibit S
Permanent Man-Made Structures

There are no permanent man-made structures on or near this proposed mining area. Therefore, no structure agreements are included in this application.

Addendum 1
Notice Requirements

Attached are copies of:

Notice posted at the site and Certification

There are 5 Owners of Record within 200 feet of the parcel boundary, but none of the adjacent properties are within 200 feet of the affected land. Public notices were sent via certified mail to adjacent owners of record.

Proof of Public Notice publication per section 1.6.5(2).

For copies of notifications provided to the Garfield County Board of County Commissioners and Bookcliff Conservation District, see Exhibit Q.

For a copy of the receipt of filing with the Garfield County Clerk and Record, see Exhibit R-1.

Notice Posted on Site

NOTICE

This site is the location of a proposed mining operation. QB Energy Operating, LLC, whose address and phone number is 143 Diamond Avenue, Parachute, CO 81635, (970)852-9819, has applied for a Reclamation Permit with the Colorado Mined Land Reclamation Board. Anyone wishing to comment on the application may view the application at the Garfield County Clerk and Recorder's Office, 195 West 14th Street, Building D. Rifle, CO 81650, and should send comments prior to the end of the public comment period to the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, Colorado 80203.

Certification:

I, Ed Seymour, hereby certify that I posted a sign containing the above notice for the proposed permit area known as the Jackrabbit Gravel Quarry, on 2/24/2025 (Date Posted).

SIGNATURE

3/4/2025
DATE

Proof of Mailing to Owners of Record
within 200 feet of Parcel Boundary

6298 1770-034

UNITED STATES POSTAL SERVICE.

GRAND JUNCTION
241 N 4TH ST
GRAND JUNCTION, CO 81501-9998
www.usps.com

07/07/2025 04:32 PM

TRACKING NUMBERS
70211970000226364336
70211970000226364299
70211970000226364329
70211970000226364312
70211970000226364305

TRACK STATUS OF ITEMS WITH THIS CODE
(UP TO 25 ITEMS)

TRACK STATUS BY TEXT MESSAGE
Send tracking number to 28777 (2USPS)
Standard message and data rates may apply

TRACK STATUS ONLINE
Visit https://www.usps.com/tracking
Text and e-mail alerts available

PURCHASE DETAILS

Product	Qty	Unit Price	Price
First-Class Mail® Letter Washington, DC 20585 Weight: 0 lb 0.50 oz Estimated Delivery Date Mon 07/14/2025	1		$0.73
Certified Mail® Tracking #: 70211970000226364336			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2007 88			$4.10
Total			$9.68
First-Class Mail® Letter Rifle, CO 81650 Weight: 0 lb 0.50 oz Estimated Delivery Date Fri 07/11/2025	1		$0.73
Certified Mail® Tracking #: 70211970000226364299			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2008 25			$4.10
Total			$9.68
First-Class Mail® Letter Englewood, CO 80111 Weight: 0 lb 0.50 oz Estimated Delivery Date Fri 07/11/2025	1		$0.73
Certified Mail® Tracking #: 70211970000226364329			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2007 95			$4.10
Total			$9.68
First-Class Mail® Letter Parachute, CO 81635 Weight: 0 lb 0.50 oz Estimated Delivery Date Fri 07/11/2025	1		$0.73
Certified Mail® Tracking #: 70211970000226364312			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2008 01			$4.10
Total			$9.68
First-Class Mail® Letter Silt, CO 81652 Weight: 0 lb 0.50 oz Estimated Delivery Date Fri 07/11/2025	1		$0.73
Certified Mail® Tracking #: 70211970000226364305			$4.85
Return Receipt Tracking #: 9590 9402 8620 3244 2008 18			$4.10
Total			$9.68
Grand Total:			$48.40
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX7507 Approval #: 03789G Transaction #: 790 AID: A0000000031010 Contactless AL: VISA CREDIT			$48.40

TO REPORT AN ISSUE
Visit https://emailus.usps.com

RIVERCITY CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

CERTIFIED MAIL®

7021 1970 0002 2636 4305

7021 1970 0002 2636 4305

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

9590 9402 8620 3244 2008 18

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4305

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Certified Mail s
- A receipt (this portion of
- A unique identifier for yo
- Electronic verification of delivery.
- A record of delivery (incl signature) that is retaine for a specified period.

Important Reminders:
- You may purchase Certifi First-Class Mail®, First-C or Priority Mail® service.
- Certified Mail service is international mail.
- Insurance coverage is *no* with Certified Mail servic of Certified Mail service Insurance coverage auto certain Priority Mail item
- For an additional fee, and endorsement on the mail the following services:
  - Return receipt service, of delivery (including th You can request a hard electronic version. For complete PS Form 381 *Receipt*; attach PS Form

PS Form **3800**, April 2015

7021 1970 0002 2636 4305

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Silt, CO 81652

OFFICIAL USE

Certified Mail Fee
$ $4.85

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $ $0.00

Postage
$ $0.73

Total Postage and Fees
$7.88

$4.10

0501
13

JUL - 7 2025
Postmark Here

07/07/2025

Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

RIVERCITY CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

CERTIFIED MAIL®

7021 1970 0002 2636 4312

7021 1970 0002 2636 4312

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Chevron USA Inc.
Attn: Nate McCorkell
8311 County Road 215
Parachute, CO 81635

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Chevron USA Inc.
Attn: Nate McCorkell
8311 County Road 215
Parachute, CO 81635

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Chevron USA Inc.
Attn: Nate McCorkell
8311 County Road 215
Parachute, CO 81635

9590 9402 8620 3244 2008 01

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4312

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

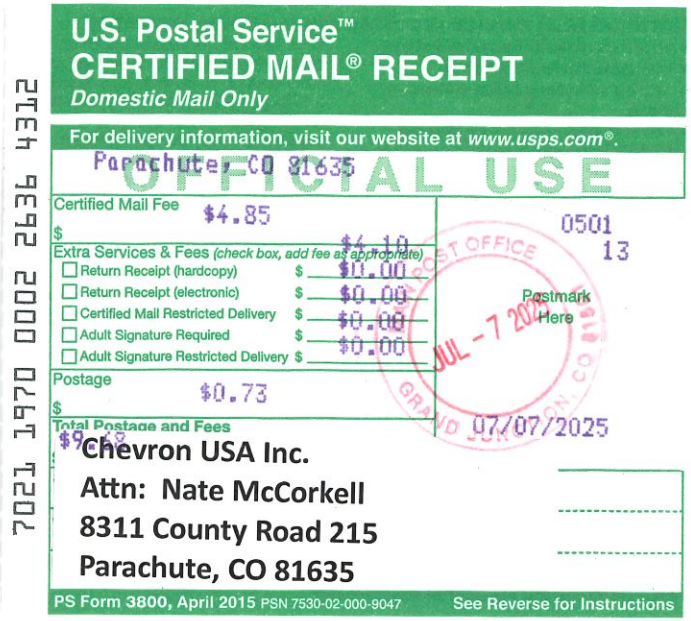
Certified Mail

- A receipt (this portion
- A unique identifier for
- Electronic verification
- delivery.
- A record of delivery (in
- signature) that is retai
- for a specified period.

Important Reminders

- You may purchase Cer
- First-Class Mail®, First
- or Priority Mail® servic
- Certified Mail service i
- international mail.
- Insurance coverage is
- with Certified Mail ser
- of Certified Mail servic
- insurance coverage au
- certain Priority Mail ite
- For an additional fee, a
- endorsement on the m
- the following services:
- Return receipt servic
- of delivery (including
- You can request a ha
- electronic version. F
- complete PS Form 3
- *Receipt*; attach PS F

PS Form **3800**, April 20



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Parachute, CO 81635

OFFICIAL USE

Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate) $4.10
- ☐ Return Receipt (hardcopy) $0.00
- ☐ Return Receipt (electronic) $0.00
- ☐ Certified Mail Restricted Delivery $0.00
- ☐ Adult Signature Required $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $9.68

0501
13

POST OFFICE
GRAND JUNCTION, CO
JUL - 7 2025
Postmark Here

07/07/2025

7021 1970 0002 2636 4312

Chevron USA Inc.
Attn: Nate McCorkell
8311 County Road 215
Parachute, CO 81635

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

RIVERCITY
CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

CERTIFIED MAIL

7021 1970 0002 2636 4329

7021 1970 0002 2636 4329

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com*®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Puckett Land Company
5460 S. Quebec Street, Suite 250
Greenwood Village, CO 80111-1917

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Puckett Land Company
5460 S. Quebec Street, Suite 250
Greenwood Village, CO 80111-1917

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Englewood, CO 80111

OFFICIAL USE

Certified Mail Fee	$4.85
Extra Services & Fees *(check box, add fee as appropriate)*	$4.10
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.73
Total Postage and Fees	$9.68

MAIN POST OFFICE GRAND JUNCTION, CO 81501
JUL – 7 2025
Postmark Here
0501
13
07/07/2025

7021 1970 0002 2636 4329

Puckett Land Company
5460 S. Quebec Street, Suite 250
Greenwood Village, CO 80111-1917

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Puckett Land Company
5460 S. Quebec Street, Suite 250
Greenwood Village, CO 80111-1917

9590 9402 8620 3244 2007 95

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4329

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

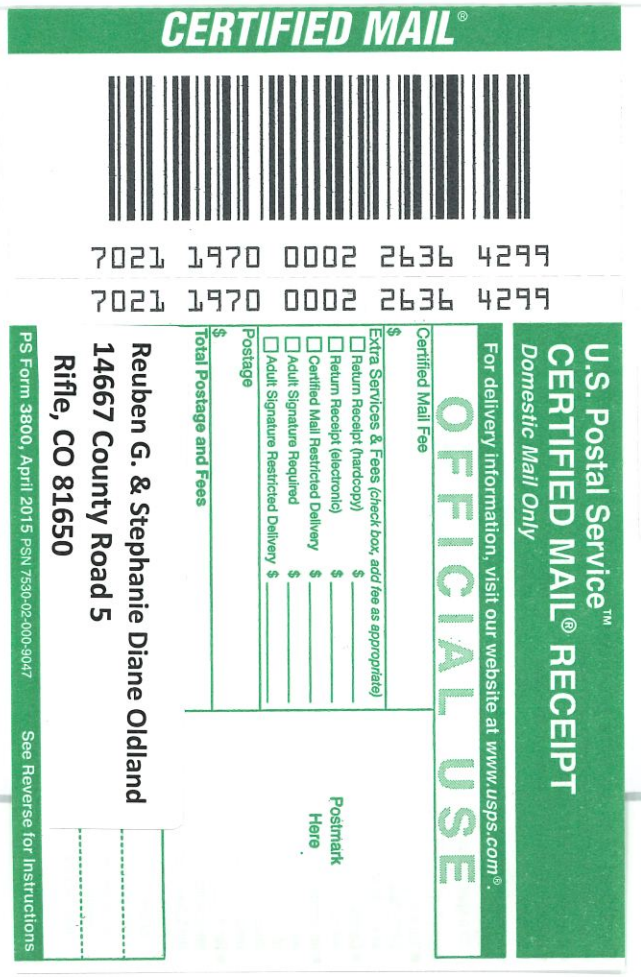
Certified Mail
- A receipt (this portion
- A unique identifier for
- Electronic verification
delivery.
- A record of delivery (
signature) that is reta
for a specified period.

Important Reminder
- You may purchase Ce
First-Class Mail®, Firs
or Priority Mail® servic
- Certified Mail service
international mail.
- Insurance coverage is
with Certified Mail ser
of Certified Mail servic
insurance coverage a
certain Priority Mail ite
- For an additional fee, a
endorsement on the m
the following services:
- Return receipt servic
of delivery (including
You can request a ha
electronic version. Fo
complete PS Form 3
Receipt; attach PS F

PS Form **3800**, April 20

RIVERCITY
CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501



Reuben G. & Stephanie Diane Oldland
14667 County Road 5
Rifle, CO 81650

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Reuben G. & Stephanie Diane Oldland
14667 County Road 5
Rifle, CO 81650

9590 9402 8620 3244 2008 25

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4299

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Certified Mail s

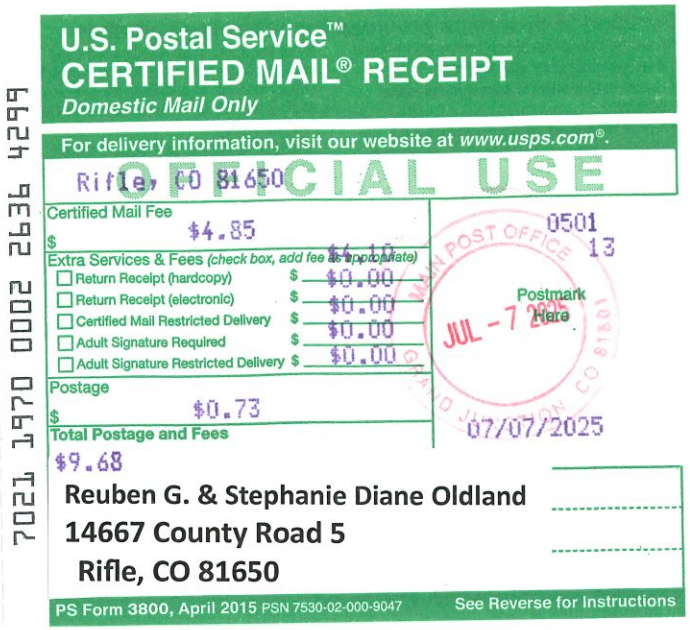
- A receipt (this portion of
- A unique identifier for yo
- Electronic verification of delivery.
- A record of delivery (incl signature) that is retaine for a specified period.

Important Reminders:

- You may purchase Certifi First-Class Mail®, First-C or Priority Mail® service.
- Certified Mail service is international mail.
- Insurance coverage is *no* with Certified Mail servic of Certified Mail service insurance coverage auto certain Priority Mail item
- For an additional fee, and endorsement on the mail the following services:
  - Return receipt service, of delivery (including t

You can request a hard electronic version. For complete PS Form 381 *Receipt*; attach PS For

PS Form **3800**, April 2015



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Rifle, CO 81650

OFFICIAL USE

Certified Mail Fee
$ $4.85

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $ $0.00

Postage
$ $0.73

Total Postage and Fees
$9.68

0501
13

MAIN POST OFFICE
RIFLE CO 81601

Postmark Here
JUL - 7 2025

07/07/2025

7021 1970 0002 2636 4299

Reuben G. & Stephanie Diane Oldland
14667 County Road 5
Rifle, CO 81650

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

RIVERCITY CONSULTANTS

215 Pitkin Avenue, Unit 201
Grand Junction, CO 81501

CERTIFIED MAIL®

7021 1970 0002 2636 4336

7021 1970 0002 2636 4336

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

9590 9402 8620 3244 2007 88

2. Article Number *(Transfer from service label)*

7021 1970 0002 2636 4336

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

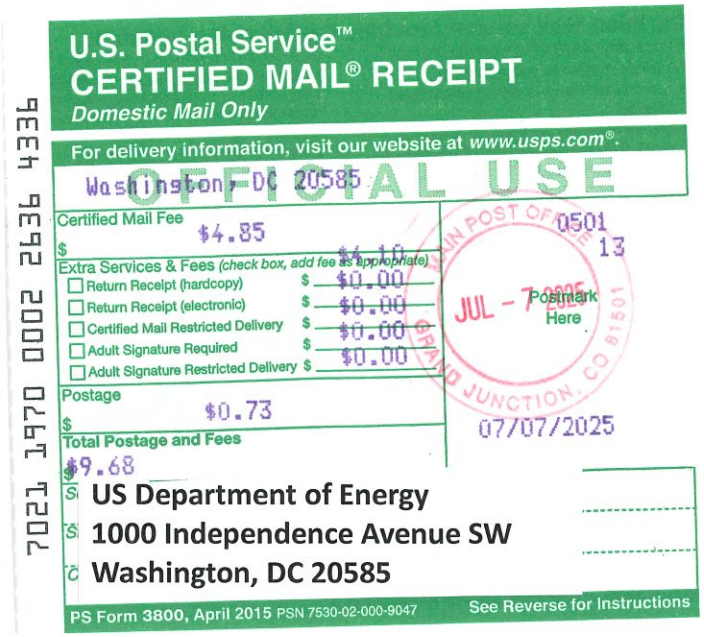
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Certified Mail
- A receipt (this portion o
- A unique identifier for y
- Electronic verification o delivery.
- A record of delivery (ina signature) that is retain for a specified period.

Important Reminders:
- You may purchase Certi First-Class Mail®, First- or Priority Mail® service
- Certified Mail service is international mail.
- Insurance coverage is n with Certified Mail servi of Certified Mail service insurance coverage aut certain Priority Mail iten
- For an additional fee, an endorsement on the ma the following services:
  - Return receipt service of delivery (including You can request a har electronic version. Fo complete PS Form 38 *Receipt*; attach PS Fo

PS Form **3800**, April 201



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Washington, DC 20585

OFFICIAL USE

Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $9.68

0501 13

JUL - 7 2025

Postmark Here

GRAND JUNCTION, CO 81501

07/07/2025

7021 1970 0002 2636 4336

US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Column

OFFICIAL AD PROOF

This is the proof of your ad scheduled to run in **Rifle Citizen Telegram** on the dates indicated below.
If changes are needed, please contact us prior to deadline at **(970) 625-3245**.

Notice ID: b0b1hTiiki6R7GIfGYkD | **Proof Updated: Jul. 07, 2025 at 03:24pm MDT**
Notice Name: 8CD09 DRMS Permit

See Proof on Next Page

This is not an invoice. Below is an estimated price, and it is subject to change. You will receive an invoice with the final price upon invoice creation by the publisher.

FILER	FILING FOR
Courtney Patch	Rifle Citizen Telegram
cpatch@rccwest.com	
(970) 241-4722	

Columns Wide:	1	**Ad Class:**	Legals
Total Column Inches:	4		
Number of Lines:	48		

07/10/2025: Other Notice	38.40
07/17/2025: Other Notice	38.40
07/24/2025: Other Notice	38.40
07/31/2025: Other Notice	38.40
Affidavit Fee	10.00
Subtotal	$163.60
Tax	$0.00
Processing Fee	$16.36
Total	**$179.96**

Public Notice

QB Energy Operating, LLC; whose address and phone number are 143 Diamond Avenue, Parachute, CO 81635, (970) 852-9819, has filed an application for a Regular (112) Hard Rock/Metal Mining Reclamation Permit with the Colorado Mined Land Reclamation Board under provisions of the Colorado Mined Land Reclamation Act. The proposed mine is known as the Jackrabbit Gravel Quarry, and is located at or near Section 17, Township 5, Range 96, Prime Meridian.

The proposed date of commencement is September 2025, and the proposed date of completion is December 2045. The proposed future use of the land is Rangeland.

Additional information and tentative decision date may be obtained from the Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567, or at the Garfield County Clerk and Recorder's office; 109 8th Street, Suite 200, Glenwood Springs, Colorado 81601, or the above-named applicant. A complete copy of the application is available at the above-named County Clerk and Recorder's office and at the Division's office.

Comments concerning the application and exhibits must be in writing and must be received by the Division of Reclamation, Mining and Safety by 4:00 p.m. on September 16, 2025.

Please note that under the provisions of C.R.S. 34-32.5-101 et seq. .comments related to noise, truck traffic, hours of operation, visual impacts, effects on property values and other social or economic concerns are issues not subject to this Office's jurisdiction. These subjects, and similar ones, are typically addressed by your local governments, rather than the Division of Reclamation, Mining and Safety or the Mined Land Reclamation Board.

PUBLISHED IN THE RIFLE CITIZEN TELEGRAM ON THURSDAY, JULY 10, 2025, THURSDAY, JULY 17, 2025, THURSDAY, JULY 24, 2025 AND THURSDAY, JULY 31, 2025.

THE CITIZEN TELEGRAM

Receipt

Column Software PBC
PO Box 208098
Dallas, TX 75320-8098
help.column.us

Paid by
Courtney Patch

Receipt number	
Invoice number	6SPRVXGZ-0001
Notice ID	b0b1hTiiki6R7GIfGYkD
Order Number	371389
Publisher	Rifle Citizen Telegram
Date paid	Jul 7, 2025
Payment method	VISA -

Description	Qty	Unit price	Amount
07/10/2025: Other Notice	1	38.40	38.40
07/17/2025: Other Notice	1	38.40	38.40
07/24/2025: Other Notice	1	38.40	38.40
07/31/2025: Other Notice	1	38.40	38.40
Affidavit Fee	1	10.00	10.00

=== Notes ===
Notice Name: 8CD09 DRMS Permit
Order Number: 371389

Net Subtotal	$163.60
Tax	0.00
Processing Fee	16.36
Amount paid	$179.96