



# Gunnison County Environmental Health Board

## MEETING AGENDA ENVIRONMENTAL HEALTH BOARD

November 18, 2024

Blackstock Government Center, 220 N. Wisconsin Street, STE D, Gunnison, Colorado and virtual through information below

TIME	TOPIC
1:30pm	Call to order and determine quorum
1:35pm	Approval of March 21, 2024 meeting minutes
1:40pm	Public Comment-unscheduled citizens Administrative updates
1:45pm	John Mortell-Public Hearing for a variance to the Gunnison County OWTS regulations for a reduced setback distance from a septic tank to a wetland boundary
Adjourn	

Zoom link:

Gunnison Com Dev is inviting you to a scheduled Zoom meeting.

Topic: EH Board Meeting

Time: Nov 18, 2024 01:30 PM Mountain Time (US and Canada)

Join Zoom Meeting

<https://gunnisoncounty-org.zoom.us/j/86044949253?pwd=Y6nft3bnaZzHqKJebnZLW13FTA5a5i.1>

Meeting ID: 860 4494 9253

Passcode: 345006

ADA Accommodations: Anyone needing accommodations as determined by the *American Disabilities Act* may contact the Community Development Department prior to the day of the hearing.

## Gunnison County Environmental Health Board Minutes

March 21, 2024

The March 21, 2024, Gunnison County Environmental Health Board meeting was conducted in the Blackstock Meeting Room at 221 N Wisconsin St Gunnison, CO. 81230 and by ZOOM virtual online meeting.

### **Board Members Present:**

Bill Barvitski, EH Board Member  
Brooke Zanetell, EH Board Member  
Lynn Cudlip, EH Board Member

### **Staff Present:**

Crystal Lambert, Building and EH Official  
Rebecca Ricord, Community Development  
David Holt, Community Development  
Misty Castillo, Community Development

Other attendees as listed in text.

**Call to order:** Meeting called to order at 1:31 by Cudlip

### **Approval of Minutes:**

Moved by Barvitski seconded by Zanetell to approve the February 15, 2024, minutes the motion passed unanimously, with Board members Cudlip, Barvitski and Zanetell voting yes. The April 28, 2022, and June 30, 2022, minutes could not be approved at this time.

Lambert gave the Board an update on the Harmel permit. Applicant plans on filing a Land Use Change application. They have requested an extension until June 30, 2025.

### **Unscheduled Citizens:**

None.

**Baker (OWTS-23-00146)** The Environmental Health Board continued the Public Hearing for consideration of an OWTS on a parcel less than one-acre at 20 Paul Pl.

**Voting Members:** Cudlip was seated as chair. Barvitski and Zanetell

With a quorum present Chairperson Cudlip opened the public hearing.

Ricord confirmed there was adequate public notice on February 19<sup>th</sup>, 2024, in the Gunnison Country Times, Crested Butte Newspaper, and on the Gunnison County website.

Ricord confirmed the address for the parcel is 44 Paul Pl.

**Application Presentation:**

Baker asked for clarity on when the OWTS system needed to be installed and Ricord referenced the OWTS regulations.

**Staff Comments:**

Ricord presented staff's draft action .

**Board Discussion:**

No further discussion needed.

**Public Comments:**

No public comments.

**Applicant response to Public Comments:**

No comments from applicant.

**Review Body Response to Public Comment:**

None

**EH Determination of Application:**

Moved by Barvitski **seconded by** Zanetell to approve the application for Joseph Baker (OWTS-23-00146) before the Gunnison County Environmental Health Board. The motion passed unanimously.

**ENVIRONMENTAL HEALTH BOARD VARIANCE REQUEST ACTION**

**APPLICANT:** Joseph Baker

**DATE:** March 21, 2024

**SITE LOCATION:** 44 Paul Pl, Lot 19, Mitzel's Green Acres

**ACTION:** Request for a variance to the Gunnison County OWTS Regulations for an OWTS on a parcel less than one-acre

**PREPARED BY:** Rebecca Ricord, Building & Environmental Health Inspector/Plans Examiner

**PROPOSED PROJECT:**

The applicant is requesting a variance to the Gunnison County OWTS Regulations for an OWTS on a parcel less than one acre to serve a future residence. The parcel is

currently vacant.

### **GUNNISON COUNTY ENVIRONMENTAL HEALTH OFFICE ACTION:**

The application and proposed design plans have been reviewed by the Environmental Health Office for compliance with the OWTS Regulations and the land use requirements of the County. The proposed septic design meets the design criteria of the Gunnison County OWTS Regulations and the minimum horizontal distance requirements from water features, pertinent physical features and property lines are met.

The OWTS application was denied by the Environmental Health Office because *Section 3.A.9. of the Gunnison County OWTS Regulations* states that an OWTS shall not be permitted to be installed on a parcel of land less than once acre in size.

### **APPLICANT'S REQUEST FOR A VARIANCE:**

A request for a Public Hearing with the Environmental Health Board for the consideration of a variance to *Section 3.A.9 of the Gunnison County OWTS Regulations* has been received and was prepared by the applicant.

### **PUBLIC HEARING:**

On February 15, 2024, the Gunnison County Environmental Health Board conducted a Public Hearing on this request for a variance.

### **FINDINGS:**

Based on a review of all the information included with the OWTS application, the request for a variance, and staff reports for this project and consideration of any and all testimony and public input received relative to this application, the Gunnison County Environmental Health Board finds that:

1. Action on this request for a variance from the *Gunnison County OWTS Regulations* is property-specific and limited to the circumstances unique to this application.
2. The applicant has demonstrated that the requested variance from the *Gunnison County OWTS Regulations* is warranted by unique and existing site-specific configuration and site size that make compliance with the Regulations technically infeasible.
3. The applicant has provided justification through specific conditions that exist which support a finding that approval of the requested variance will result in no greater risk than that associated with compliance with the requirements of the *Gunnison County OWTS Regulations*.

4. The applicant has demonstrated that approval of the requested variance will not be in violation of any minimum standards established in any other applicable federal or state rule or regulation.
5. The applicant has demonstrated that the proposed OWTS will not be a nuisance or injurious to public health, safety or welfare. The proposed development meets minimum horizontal distance requirements from water features, pertinent physical features and property lines.
6. The applicant has demonstrated that no substantial injury will result from the granting of the requested variance.
7. This review and decision incorporates, but is not limited to, all the documentation submitted to the County and included within the Department file relative to this application; including all exhibits, references and documents.

**DECISION:**

The Gunnison County Environmental Health Board, having reviewed the proposed application and supporting documentation, site observations and public testimony does approve the requested variance to Section 3.A.9 of the *Gunnison County OWTS Regulations* for Joseph Baker at his parcel, 44 Paul Pl, Lot 19, Mitzel's Green Acres, under OWTS application 23-00146, with the following conditions:

1. The OWTS shall be designed and installed in accordance with the *Gunnison County OWTS Regulations* and the *Gunnison County Land Use Resolution*, including but not limited to setback requirements, design standards, requirements for system components and general technical standards.
2. This approval is founded on each individual requirement. Should the applicant successfully challenge any such finding or requirement, this approval is null and void.
3. This permit may be revoked or suspended if Gunnison County determines that any material fact set forth herein or represented by the applicant was false or misleading, or that the applicant failed to disclose facts necessary to make any such fact not misleading.
4. Approval of this use is based upon the facts presented and implies no approval of similar use in the same or different location and/or with different impacts on the environment and community. Any such future application shall be reviewed and evaluated, subject to its compliance with current regulations, and its impact to the County.

**Meeting adjourned****Minutes by: Misty Castillo**

Senior Administrative Assistant  
Gunnison County Community and Economic Development



**GUNNISON COUNTY, COLORADO  
COMMUNITY DEVELOPMENT DEPARTMENT, ENVIRONMENTAL  
HEALTH OFFICE STAFF REPORT**

**John Mortell**

Application No: OWTS-24-00184  
Date application scheduled with EH Board: November 18, 2024  
Prepared by: Crystal Lambert, Building & EH Official

<b>APPLICANT/OWNER:</b>	John Mortell
<b>PROJECT DESCRIPTION:</b>	The applicant is proposing a variance for reduced horizontal setback distances from a septic tank to wetlands. The parcel is currently vacant.
<b>CURRENT STATUS OF OWTS APPLICATION:</b>	The OWTS application was denied by the Environmental Health Office because <i>Section 7.D. and Table 7-1</i> of the <i>Gunnison County OWTS Regulations</i> requires at least 100 feet between a septic tank and a wetlands boundary. The proposed minimum distance between the septic tank and the wetlands boundary is approximately 60 feet. The proposed location of the soil treatment area meets or exceeds the 100 foot distance setback to wetland boundaries.
<b>ENVIRONMENTAL HEALTH BOARD ACTION REQUESTED:</b>	A request for a Public Hearing with the Environmental Health Board for the consideration of a variance to <i>Section 7.D. and Table 7-1</i> of the <i>Gunnison County OWTS Regulations</i> has been received.
<b>PROPERTY LOCATION:</b>	475 Winze Road, Lot 15 Lost Miner Ranch Subdivision
<b>AREA DESCRIPTION:</b>	The parcel is 11.92 acres within the Lost Miner Ranch Subdivision located approximately 5 miles east of the City of Gunnison and adjacent to Tomichi Creek.

<b>ATTACHED EXHIBITS:</b>	<ul style="list-style-type: none"> <li>▪ OWTS application</li> <li>▪ Aerial view of parcel and surrounding parcels</li> <li>▪ Proposed design report and construction plan</li> <li>▪ Variance request submittal</li> <li>▪ Aquatic Resources Delineation report</li> <li>▪ Site Visit Inspection with photographs</li> <li>▪ Development Draft Action</li> </ul>
<b>ENVIRONMENTAL BOARD TASKS AT PUBLIC HEARING:</b>	<ul style="list-style-type: none"> <li>— Acknowledge receipt of application by applicant name, name of development (if applicable) and date of application</li> <li>— Confirmation of adequate public notice: <ul style="list-style-type: none"> <li>• Posting of legal notice in the County's official newspaper at least 20 days prior the hearing.</li> <li>• Posting of public hearing notice at the County posting locations.</li> <li>• Mailing of public hearing notice to all owners of properties who own surface rights within 500 feet of each boundary of the entire parcel at least 20 days prior to the hearing.</li> <li>• Posting of the public hearing notice in a conspicuous location at or near the parcel.</li> </ul> </li> <li>— Hear applicant presentation</li> <li>— Hear staff comments</li> <li>— Ask questions, identify and consider issues</li> <li>— Hear applicant response and staff response</li> <li>— Continue public hearing or close public hearing.</li> </ul>

<b>Variance Request Submittal Analysis</b>		
<b>Variance request submittals shall include the following items:</b>	<b>Applicant Submittal Summary</b>	<b>Staff Comments</b>
Site-specific request identifying the specific criteria from which a variance is being requested. Section 3.M.1.b(1)	The variance is being requested for a reduced horizontal setback distance from a septic tank to a wetland boundary.	<i>Section 7.D and Table 7-1 of the Gunnison County OWTS Regulations, require that septic tanks be at least 100 feet from a wetland boundary. This is a Gunnison County requirement that is more stringent than the State of Colorado's minimum setback</i>

		requirement of 50 feet.
Technical justification by a professional engineer or professional geologist, which indicates the specific conditions which exist and/or the measures which will be taken that support a finding that the variance shall result in no greater risk than that associated with compliance with the requirements of the OWTS Regulations. Section 3.M.1.b(2)	The property "Building Envelope" is surrounded with Delineated Wetlands and provides no alternative location for the septic tank. Meeting the State of Colorado's minimum setback distances of at least 50 feet ensures no greater risk.	Staff agrees the proposed design and location of the septic tank is the best layout of components given the building site, topography and surrounding Wetlands.
A discussion of alternatives considered in lieu of the requested variance. Section 3.M.1.b.(3)	There are no other "alternative" options for this parcel, due to the delineated wetlands which are within the property and surrounding areas.	
Technical documentation for selected alternative, which may include a testing program, which confirms that the variance does not increase the risk to public health and to the environment. Section 3.M.1.b.(4)	There is no technical documentation for a selected alternative as there are no alternatives.	
A statement of the hardship that created the necessity for the variance. Section 3.M.1.b.(5)	There is no hardship that created the necessity for this variance.	

**Section 3.M.2.: Prohibitions on the granting of variance requests**

<b>Prohibitions on the granting of variance requests:</b>	<b>Staff comments:</b>
No variance shall be issued where the property can accommodate a conforming OWTS. Section 3.M.2.a.	There are wetlands on and surrounding the parcel. The proposed development design plan appears to meet the minimum requirements as much as they can be met given the constraints. The design of the proposed system meets all the requirements except for the minimum setback distance to the wetland boundary.
No variance shall be issued to mitigate an error in construction involving any element of property improvements. Section 3.M.2.b.	N/A
No variance shall be allowed on the grounds of cost of compliance. Section 3.M.2.c.	N/A
No variance shall be issued if it will result in a setback reduction to an offsite physical feature that does not conform to the minimum setbacks defined in Table 7-1 of this regulation without proof of compliance of Section 3.M.5. Section 3.M.2.d.	The minimum setbacks to off-site physical features will be met with the proposed development plan.
No variance shall be issued if it reduces the separation to ground water or bedrock based on the level of treatment in Table 7-2. Section 3.M.2.e.	N/A
No variance from the horizontal setback from a well shall be issued unless it also meets the variance requirements of the Board of Examiners of Water Well Construction and Pump Installation Contractors. Section 3.M.2.f.	N/A
No variance shall be issued for the installation of a higher level treatment system based on sizing or separation reductions without the Department having a maintenance and oversight program. Section 3.M.2.g.	N/A

**Staff Recommendation on the application for a variance to the *Gunnison County OWTS Regulations*:**

The proposed development plan and location of the septic tank utilizes the parcel layout, topography, and physical features as much as possible to provide for the greatest degree of compliance with the Gunnison County OWTS Regulations. The proposed setback distance from the septic tank to the nearest Wetlands boundary is approximately 60 feet and does not meet the County minimum requirement for 100 feet, however, the State minimum of 50 feet is met. Additionally, the proposed location of the soil treatment area does meet or exceed the 100-foot minimum setback distance. Staff recommends approval of the application for a variance to the Gunnison County OWTS Regulations, Section 7.D. and Table 7-1, for the proposed design.



**Gunnison County, CO**  
**Community Development Department**  
 221 N. Wisconsin St. Ste. D, Gunnison, CO 81230  
 Phone: (970) 641-0360  
 Website: <https://www.gunnisoncounty.org/144/Community-and-Economic-Development>  
 Email: [planning@gunnisoncounty.org](mailto:planning@gunnisoncounty.org)

**OWTS PERMIT APPLICATION**

**SUBMIT COMPLETE APPLICATION PACKETS BY EMAIL TO [PERMIT@GUNNISONCOUNTY.ORG](mailto:PERMIT@GUNNISONCOUNTY.ORG)**

**OWNER:** John Mortell  
**MAILING ADDRESS:** P.O. Box 1804, Gunnison, 81230  
**EMAIL:** [jmortell@coburnpartners.com](mailto:jmortell@coburnpartners.com) **CELL PHONE:** 9702090461

**LICENSED SEPTIC CONTRACTOR:** JCI Excavation and Construction  
**EMAIL:** [jci@jicrestedbutte.com](mailto:jci@jicrestedbutte.com) **CELL PHONE:** 970-349-5486

**PRIMARY PROJECT CONTACT (GENERAL):** Tyler Arndt  
**EMAIL:** [tarndt@coburnpartners.com](mailto:tarndt@coburnpartners.com) **CELL PHONE:** 8168010716

**DESCRIPTION OF PARCEL** (legal description, site address):

LOT 15, LOST MINER RANCH SUBDIVISION

**PARCEL SIZE:** 11.92 ACRES

**HAVE YOU APPLIED FOR A LAND USE CHANGE PERMIT?** NO

- Is this application for a secondary residence?
- Do you need a lot cluster? (Do you own adjacent lots that are less than one acre, if so you may need a lot cluster)

**WHAT TYPE OF PERMIT ARE YOU REQUESTING?**

- New
- Alteration
- Repair

**Project Description** (Please identify all existing buildings/development and all proposed buildings/development on the parcel.):

NEW OWTS TO SERVE NEW 2,982 SF, 3BD RESIDENCE AND FUTURE 1BD ADU

**DESCRIBE THE TYPE AND USE THAT THIS SYSTEM WILL BE SERVING** (i.e. one-family dwelling, commercial, industrial, agricultural, recreational):

RESIDENTIAL, ONE-FAMILY DWELLING

**Description of the Proposed and/or Existing Water Source.** Description of proposed/existing water source; if such proposed source is by well, copy of the well permit may be required to verify the location of the well; and, if such source is a central system, documentation from the operator of that system that water will be supplied:

PROPOSED NEW WELL, TO BE APPLIED FOR.

**THE FOLLOWING INFORMATION IS NEEDED FOR THE SUBMITTAL OF ALL OWTS APPLICATIONS:**

- Report from Site and Soils Evaluation and Site Plan.** The report from the Site and Soil Evaluation and the Site Plan in accordance with Section 5 of the *Gunnison County OWTS Regulations*.
- Vicinity Map.** General area map showing the location of the proposal on a typical U.S. Geological Survey map, U.S. Forest Service map or County parcel map, available from the Gunnison County Geographic Information Services Department or the Gunnison County Assessor's Office.
- System Design.** The system design document shall contain all plan details necessary for permitting, installation and maintenance and shall include a brief description of the facility and its proposed use, basis and calculations of design flow, and influent strength in accordance with Section 5.F. of the *Gunnison County OWTS Regulations*.
- A copy of the recorded **Warranty Deed** is required for proof of ownership. This may be obtained from the Recorder's Office, located on the first floor of the Blackstock's Government Center. The Recorder's Office can be reached by phone at 970-641-2038.
- Letter of Consent.** If applicable, a letter from the property owner acknowledging a person other than the owner may apply for permits.
- Copy of **Well Permit**, if applicable
- Application Fee. Fees** are determined by type of OWTS permit and proposed use.
  - Residential New: \$1108
  - Commercial New or Replacement: \$1220
  - Residential Repair: \$685
  - Tank Replacement Only: \$408
  - System Alteration or Expansion: \$858

SIGNATURE OF OWNER OR CONTRACTOR: \_\_\_\_\_



DATE: 0715/2024

**Please be advised that the Community Development Department may require additional information.**



Scale = 1:5700

The data herein is general in nature and not assumed to be complete nor accurate in its entirety and is therefore to be used with all discretions necessary. The data portrayed should not be relied upon to establish legal title, boundary lines, the precise location of improvements, ownership, maintenance, easements or public right-of-ways.

Friday, November 1, 2024



# TROUT CREEK

## ENGINEERING

100 North Main Street  
Gunnison, CO 81230  
970-642-4110

### *O.W.T.S. Design Report*

***For:*** Mortell Residential OWTS  
475 Winze Road  
Gunnison County, Colorado

***Prepared By:*** Trout Creek Engineering L.L.C.  
100 North Main Street  
Gunnison, Colorado 81230  
970-642-4110

### ***I. Design Condition and Soils:***

This OWTS design addresses providing a new On-site Wastewater Treatment System for the proposed 3-bedroom residence, and future 1-bedroom A.D.U. above garage. A site visit to complete the required soils profile holes had been completed and were found to be soil type R-0. Ground water was encountered, and a raised bed system is being designed. Dispersal of the effluent to the surface of the unlined sand filter must be by a pressurized distribution system for equal distribution. A variance request through the Gunnison County Environmental Health Board will be required for this design.

### ***Legal Description:***

Parcel #: 378911002005  
Account #: R032767  
Lot 15 Lost Miner Ranch Subdivision  
11.92 Acres

## **Design Calculations:**

### ➤ **Wastewater Flow Calculations: Table 6-1**

**4 – TOTAL BEDROOMS = 525 G.P.D.**

- Total Design Flow: 525 GPD

### ➤ **Septic Tank Size: Table 9-1**

- 4 bedrooms = 1250 Gallons
  - Use 1500 gallon 3- compartment septic tank, with an effluent pump within the 3<sup>rd</sup> chamber

### ➤ **System Sizing:** Soil Type R-0, Pressure Dosed Bed, Chambers

- **10.C.4** - Flow = 525 GPD; L.T.A.R.
  - 11.C.3.b.2 “Maximum hydraulic loading rate for TL1 effluent applied to “Secondary Sand Media” in an unlined sand filter is 0.8 gal./sq.ft./day, OR the long term acceptance rate of the receiving soil for TL3 (Table 10-1) whichever results in the larger area.
  - Secondary Sand L.T.A.R. = 0.8
  - Receiving soil Type 1 (TL3) L.T.A.R. = 1.55
  - **USE L.T.A.R. of 0.80 gal./sq.ft./ day**
- $525 / 0.80 = 656.28 \text{ ft}^2$
- It is the responsibility of the installer to provide, to the Public Health Official, a gradation of the sand media to qualify as a “Secondary” sand media. The gradation date must be dated no more than one month prior to the installation date. However, a gradation of the actual material placed in the excavation is recommended. If this gradation cannot be met the Engineer SHALL be notified as the size of the soil treatment area must be adjusted prior to the installation of any components.
  - “Secondary” sand media requirements:
    - Effective Size: 0.15-0.60 mm
    - Uniformity Coefficient:  $\leq 7.0$
    - Percent fines passing #200 sieve:  $\leq 3.0$
- **Table 10-2** (pressure Dosed, Bed) = 1.0
  - $656.28 \text{ ft}^2 \times 1.0 \text{ ft}^2 = 656.26 \text{ ft}^2$

- **11.C.h** – Table 10-3 **MAY NOT BE USED** – per 11.C.2.h
  - 656.28 ft<sup>2</sup>
- Number of Infiltrator Quick 4 **Standard** chambers
  - $656.28 \text{ ft}^2 / 12 \text{ ft}^2 = 54.68$  (**Use 56**)
- Orenco PF3005 Effluent Pump & Distribution Lateral Calculations
  - Draw Down Per inch (3<sup>rd</sup> chamber of 1500T-3CP-HH)
    - 10.34 gallons (per inch)
  - Pump Rate = 31.3 g.p.m.
  - 12" Draw Down = 124.08 gallons
  - Pump time @ 31.3 g.p.m. = 3.96 minutes
  - Average pump cycles per day:  $525 / 124.08 = 4.2$
  - See Attached Orifice calculation and pump curve
    - Orifice Size = 1/8"
    - Orifice Spacing = 3.2' (3'-2 3/8")
  - Distal Head Pressure = 5'-0"
  - See Attached Orenco Pump Chart

➤ ***Design:***

Install 56 total Infiltrator Quick 4 **STANDARD** chambers in a 4 lateral, single "Mounded" bed. Install a minimum of 3'-0" "Secondary" (ASTM C-33) sand media under the entire bed with a minimum of 12" additional width of sand, around the perimeter, at the top infiltrative surface. Pressure dosed system with 4 laterals at 56 feet long, plus caps. Install a 1500-gallon 3 compartment pump vault tank with an Orenco PF3005 effluent pump in the 3<sup>rd</sup> chamber. (See construction drawings)

## ***II. Construction Drawing Date:***

Attached is a drawing titled "Mortell Residential - O.W.T.S." for the proposed new residence located within the Gunnison County Environmental Health District, dated June 19, 2024, which sets forth the details for construction of the system.

# 1500 Gallon Top Seam Three Compartment with High Head Pump

**Item #**  
**1500T-3CP-HH**

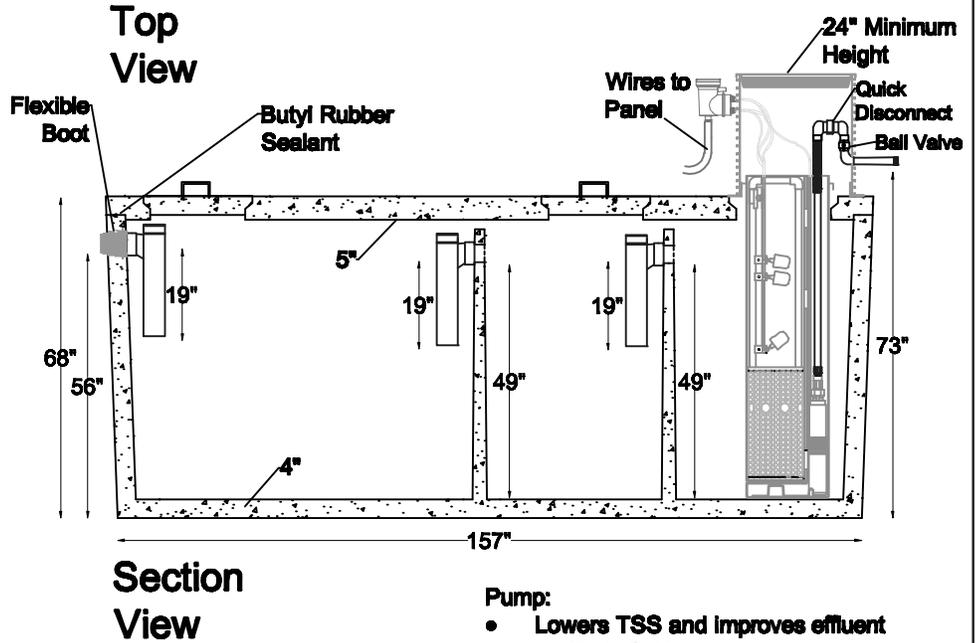
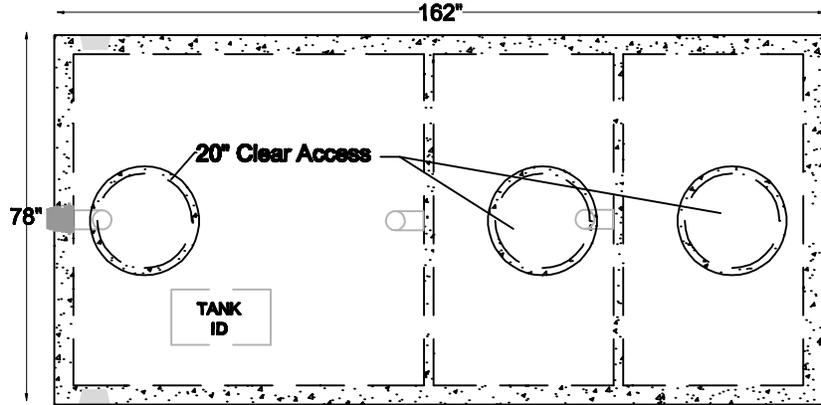
**(2000 Gallon Total Volume)**

**DESIGN NOTES**

- Design per performance test per ASTM C1227
- Top surface area 87.75 ft<sup>2</sup>
- f'c @ 28 days; concrete = 6,000 PSI Min.

**Installation:**

- Tank to be set on 5" min. sand bed or pea gravel
- Tank to be backfilled uniformly on all sides in lifts less than 24" and mechanically compacted
- Excavated material may be used for backfill, provided large stones are removed
- Excavation should be dewatered and tank filled with water prior to being put in service for installation with water table less than 2' below grade
- Meets C1644-06 for resilient connectors
- Inlet and Outlet identified above pipe
- Delivered complete with internal piping
- Secondary safety screen available with PVC riser



ALLOWABLE BURY (Based on Water Table)	
WATER TABLE	ALLOWABLE EARTH FILL
0' - 0"	3' - 0"
1' - 0"	3' - 0"
2' - 0"	4' - 0"
3' - 0"	4' - 0"
DRY	4' - 0"

**Pump:**

- Lowers TSS and improves effluent quality to field
- Easiest pump system to maintain on the market
- Complete installation (wiring, panel, mounting and start-up procedures)
- Complete warranty

**\*Service contracts available for maintenance\***

Digging Specs	Invert		Dimensions			Net Capacity				Net Weight		
	Inlet	Outlet	Length	Width	Min. Height	Inlet Side	Middle	Outlet	Total	Lid	Tank	Total
15' Long x 8' Wide												
56" below inlet	56"	73"	162"	78"	92"	1016 gal	505 gal	507 gal	2028 gal	5420 lbs	16240 lbs	21860 lbs



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**Fax: (719) 395-3727**

**Website: www.valleyprecast.com**

**Email: frontdesk@valleyprecast.com**

**28005 Co. Rd. 317**  
**P.O. Box 925**  
**Buena Vista, CO 81211**

# Pump Selection for a Pressurized System - Single Family Residence Project

#922 Mortell

## Parameters

Discharge Assembly Size	1.25	inches
Transport Length	150	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	None	
Max Elevation Lift	15	feet
Manifold Length	8.5	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.25	inches
Number of Laterals per Cell	4	
Lateral Length	56	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.25	inches
Orifice Size	1/8	inches
Orifice Spacing	3.2	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

## Calculations

Minimum Flow Rate per Orifice	0.43	gpm
Number of Orifices per Zone	72	
Total Flow Rate per Zone	31.3	gpm
Number of Laterals per Zone	4	
% Flow Differential 1st/Last Orifice	1.7	%
Transport Velocity	6.7	fps

## Frictional Head Losses

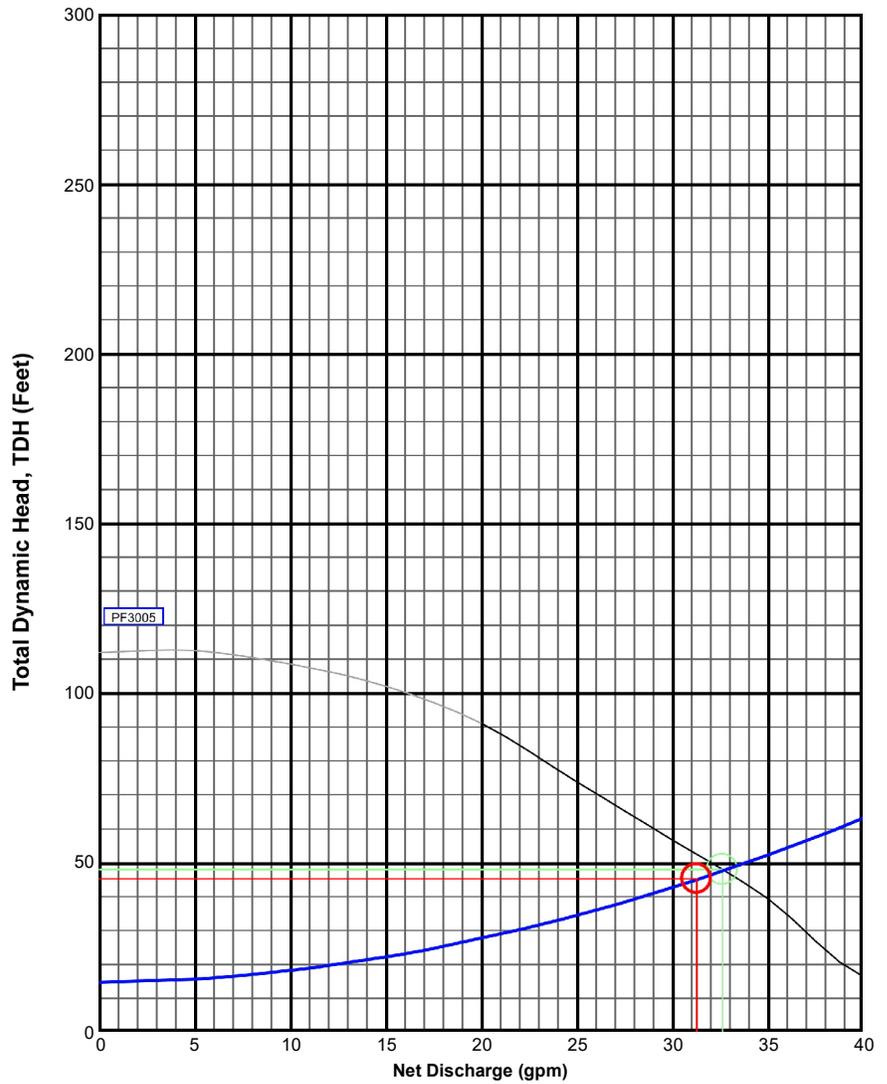
Loss through Discharge	6.9	feet
Loss in Transport	17.9	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.3	feet
Loss in Laterals	0.2	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

## Pipe Volumes

Vol of Transport Line	11.7	gals
Vol of Manifold	0.7	gals
Vol of Laterals per Zone	17.4	gals
Total Volume	29.7	gals

## Minimum Pump Requirements

Design Flow Rate	31.3	gpm
Total Dynamic Head	45.3	feet



## PumpData

PF3005 High Head Effluent Pump  
 30 GPM, 1/2HP  
 115/230V 1Ø 60Hz, 200V 3Ø 60Hz

## Legend

System Curve:	
Pump Curve:	
Pump Optimal Range:	
Operating Point:	
Design Point:	

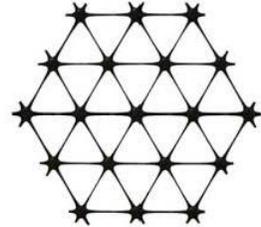


# TriAx® TX140 Geogrid

## Product Specification

### General

1. The geogrid is manufactured from a punched polypropylene sheet, which is then oriented in three substantially equilateral directions so that the resulting ribs shall have a high degree of molecular orientation, which continues at least in part through the mass of the integral node.
2. The properties contributing to the performance of a mechanically stabilized layer include the following:



<u>Index Properties</u>	Longitudinal	Diagonal	Transverse	General
Rib pitch (2), mm (in)	40 (1.60)	40 (1.60)		
Mid-rib depth (2), mm (in)		1.2 (0.05)	1.2 (0.05)	
Mid-rib width (2), mm (in)		1.1 (0.04)	1.1 (0.04)	
Rib shape				rectangular
Aperture shape				triangular
<u>Structural Integrity</u>				
Junction efficiency (3), %				93
Aperture stability (4), kg-cm/deg @ 5.0kg-cm (2)				3.00
Radial stiffness at low strain (5), kN/m @ 0.5% strain				225
(lb/ft @ 0.5% strain)				(15,430)
<u>Durability</u>				
Resistance to chemical degradation (6)				100%
Resistance to ultra-violet light and weathering (7)				100%

### NOTES:

- 1) Unless indicated otherwise, values shown are minimum average roll values determined in accordance with ASTM D4759-02. Brief description of test procedures are given in the following notes.
- 2) Nominal dimensions.
- 3) Load transfer capability determined in accordance with GRI-GG2-87 and GRI-GG1-87 and expressed as a percentage of ultimate tensile strength.
- 4) In-plane torsional rigidity measured by applying a moment to the central junction of a 225 mm x 225 mm specimen restrained at its perimeter in accordance with the U.S. Army Corps of Engineers methodology for measurement of Torsional Rigidity, (Kinney, T. C. Aperture stability Modulus ref 3.3.1.2000).
- 5) Radial stiffness is determined from tensile stiffness measured in any in-plane axis from testing in accordance with ASTM D6637-01.
- 6) Resistance to loss of load capacity or structural integrity when subjected to chemically aggressive environments in accordance with EPA 9090 immersion testing.
- 7) Resistance to loss of load capacity or structural integrity when subjected to 500 hours of ultraviolet light and aggressive weathering in accordance with ASTM D4355-05.

TX geogrid comes in a roll measuring 13.1 feet wide by 246 feet long. Valley Precast, Inc. will cut to the length needed per customer request.



**Phone: 719-395-6764**  
**Fax: 719-395-3727**  
**Website: www.valleyprecast.com**  
**Email: frontdesk@valleyprecast.com**



**INTEGRATOR®**  
systems inc.

**Quick4®**  
CHAMBER SYSTEMS

## The Quick4® Standard Chamber

### Quick4® Series



The Quick4® Standard Chamber fits in a 36" wide trench and is ideal for curved or straight systems. It features the patent-pending Contour Swivel Connection™ which permits turns up to 15°, right or left. The MultiPort™ endcap allows multiple piping options and eliminates pipe fittings. The chamber's four-foot length provides optimal installation flexibility.

### Chamber Benefits:

- Advanced contouring connections swivel up to 15°, right or left
- Latching mechanism allows for quick installation
- Four-foot chambers are easy to handle and install
- The Quick4 Standard Chamber supports wheel loads of 16,000 lbs/axle with only 12" of cover
- Certified by the International Association of Plumbing and Mechanical Officials (IAPMO)



### MultiPort Endcap Benefits:

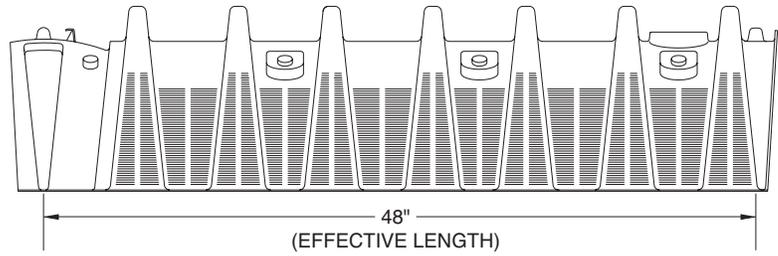
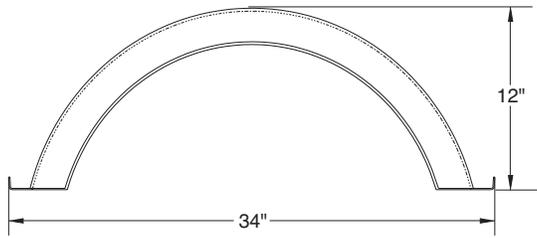
- Tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Eliminates pipe fittings
- Fits on either end of the Quick4 Standard Chamber

APPROVED in \_\_\_\_\_

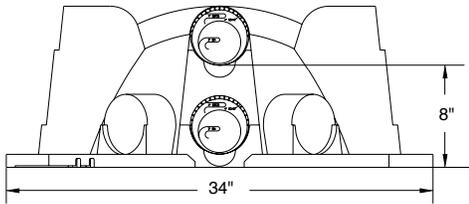
### Quick4® Series

**Because installations are faster with Quick4 chambers, you save on heavy equipment operation and labor.**

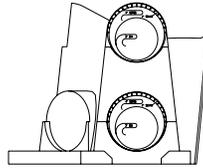
**Quick4 Standard Chamber**



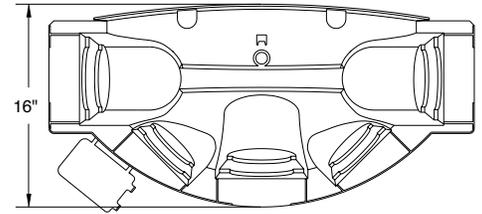
**MultiPort EndCap**



FRONT VIEW

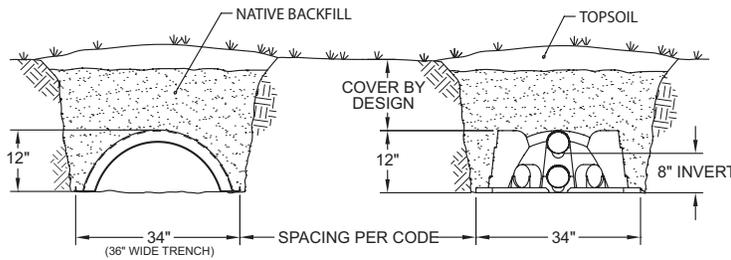


SIDE VIEW



TOP VIEW

**Typical Trench View**



**INFILTRATOR SYSTEMS, INC. STANDARD LIMITED WARRANTY**

(a) The structural integrity of each chamber, endcap and other accessory manufactured by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by Infiltrator to be covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the chamber system is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

**Quick4® Standard Chamber Specifications**

<b>Size</b>	34"W x 53"L x 12"H (864 mm x 1346 mm x 305 mm)
<b>Effective Length</b>	48" (1219 mm)
<b>Louver Height</b>	8" (203 mm)
<b>Storage Capacity</b>	43 gal (163 L)
<b>Invert Height</b>	8" (203 mm)



4 Business Park Road  
P.O. Box 768  
Old Saybrook, CT 06475  
860-577-7000 • Fax 860-577-7001  
**1-800-221-4436**  
[www.infiltratorsystems.com](http://www.infiltratorsystems.com)

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Systems Inc. Infiltrator is a registered trademark in France. Infiltrator Systems Inc. is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Systems Inc. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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Q25 0813

**Contact Infiltrator Systems' Technical Services Department for assistance at 1-800-221-4436**



**1** SITE PLAN  
1/32" = 1'-0"

**GUNNISON COUNTY MINIMUM SETBACK REQUIREMENTS**

	Spring Well(1), Suction line, Potable Water Supply Cistern(4)	Potable Water Supply Line(2)	Structure without crawl space or footing drains	Structure without basement crawl space or footing drains	Property Lines, Piped or Lined Irrigation Ditch, upslope curtain drain	Subsurface Drain, Intermittent Irrigation Lateral, Drywell, Stormwater Structure	Lake, Water Course, Irrigation Ditch, Stream, Wetland	Dry Gulch, Cut Bank, Fill Area (from Crest)	Septic Tank, Higher Level treatment Unit, Dosing Tank, Vault or Privy
Septic Tank, Higher Level Treatment Unit, Dosing Tank, Vault or Vault Privy	50 (2)	10 (2)	5	5	10	10	100	10	--
Building Sewer or Effluent Line	50 (2)	5 (6)	0	0	10 (2)	10 (2)	50 (2)	10 (2)	--
STA Trench, STA Bed, Unlined Sand Filter, Sub-surface Dispersal System, Seepage Pit	100 (3)	25 (2)	20	10	10	25	100 (3)	25	5

NOTE: The minimum Distances shown above must be maintained between the O.W.T.S. components and the features described. Where soil, geological or other conditions warrant, greater distances may be required by the local board of health or by the Water Quality Control Commission pursuant to section 25-8-205, C.R.S. and applicable regulations. For repair or upgrading of existing O.W.T.S. where the size of lot precludes adherence to these distances, a repaired O.W.T.S. must not be closer to setback features than the existing O.W.T.S., as reviewed and approved by the local public health agency. Components that are not watertight should not extend into areas of the root system of nearby trees.

- Includes potable wells, irrigation wells and monitoring wells set within a potable aquifer and infiltration galleries permitted as wells by the Division of Water Resources.
- Crossings or encroachments may be permitted at the points as noted above provided that the water or wastewater conveyance pipe is encased for the minimum setback distance on each side of the crossing. A length of pipe with a minimum Schedule 40 rating [ASTM Standard D 3034-16 (2016 version)] of sufficient diameter to easily slide over and completely encase the conveyance must be used. Rigid end caps of at least Schedule 40 rating [ASTM Standard D 3034-16 (2016 version)] must be glued or secured in a watertight fashion to the ends of the encased pipe. A hole of sufficient size to accommodate the pipe must be drilled in the lowest section of the rigid cap so that the conveyance pipe rests on the bottom of the encasement pipe. The area in which the pipe passes through the end caps must be sealed with an approved underground sealant compatible with the piping used. Other methods of encasement that provide equal protection are allowed. These methods must be reviewed and approved by the local public health agency.
- Add eight feet additional distance for each 100 gallons per day of design flows between 1,000 and 2,000 gallons per day, unless it can be demonstrated by a professional engineer or geologist by a hydrologic analysis or the use of a barrier, consisting of a minimum 30 mil PVC liner or equivalent, that contamination will be minimized. If effluent meets Treatment Level 3N and the local public health agency has a maintenance oversight program in accordance with section 14.D. of this regulation, the distance addition is not required. Flows greater than 2,000 gallons per day must be hydrologically analyzed for flow, velocity, hydraulic head, and other pertinent characteristics as means of estimating distances required to minimize contamination as part of the Division site application and permitting process.
- All horizontal setbacks to a potable water supply cistern must be met unless a variance by the Board of Examiners of Water Well Construction and Pump Installation Contractors is granted per section 18.2 of the Water Well Construction Rules, 2 C.R. 402-2. Setback requirements which may necessitate a variance are found within section 10.2 or 11.4 of the Water Well Construction Rules, as applicable. The minimum horizontal setback that may be granted through a variance is 25 feet.
- If the structure is not used as a habitable unit, the isolation may be reduced by the local board of health to no less than 50 feet.
- Building sewer installations shall meet the design requirements of the Colorado Plumbing Code.

**GENERAL O.W.T.S. NOTES:**

- IT IS SOLELY THE RESPONSIBILITY OF THE INSTALLER TO VERIFY THAT ALL HORIZONTAL SETBACK DISTANCES CAN BE MET BEFORE THE INSTALLATION OF ANY COMPONENTS, AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- NO CHANGES TO THE PLANS SHALL BE MADE WITHOUT FULL APPROVAL BY THE ENGINEER.
- IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO FOLLOW ALL THE COMPONENTS INSTALLATION INSTRUCTIONS AND MANUALS.
- THE ENGINEER AND THE LOCAL ENVIRONMENTAL HEALTH OFFICIAL MUST BE NOTIFIED FOR INSPECTION PRIOR TO BACKFILLING.
- NOTIFY ENGINEER IF CHANGES TO THE SOILS OR GROUND WATER IS ENCOUNTERED OTHER THAN WHAT WAS INVESTIGATING DURING THE PROFILE HOLE INVESTIGATION.
- IF SAND MEDIA IS USED: IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO PROVIDE THE LOCAL HEALTH OFFICIAL A GRADATION OF THE SAND MEDIA USED PER REGULATION 43.11.C(2.4)(4).
- IF THE SAND MEDIA GRADATION FOR THE DESIGN CAN NOT BE MET THE ENGINEER MUST BE NOTIFIED BEFORE ANY COMPONENTS ARE INSTALLED AS THE SOIL TREATMENT AREA WILL BE REQUIRED TO BE ADJUSTED.

**INSPECTION REQUIREMENTS:**

- A FINAL INSPECTION IS REQUIRED PRIOR TO BACKFILLING BY TROUT CREEK ENGINEERING L.L.C. AND THE LOCAL PUBLIC HEALTH OFFICIAL TO CONFIRM THE SYSTEM OPERATION AND ESTABLISH MEASUREMENTS FOR THE REQUIRED AS BUILT DRAWINGS.
- IT IS REQUIRED TO NOTIFY TROUT CREEK ENGINEERING 7 DAYS PRIOR TO ALL REQUIRED INSPECTIONS FOR SCHEDULING.
- ALL SYSTEM COMPONENTS SHALL BE INSTALLED PRIOR TO CALLING FOR FINAL INSPECTION.
- IF THE O.W.T.S. DESIGN IS A PRESSURIZED SYSTEM THE PUMP CONTROL BOX AND ALARM MUST BE PERMANENTLY INSTALLED AND WIRED BY A LICENSED ELECTRICIAN IN ORDER TO CYCLE THE SYSTEM DURING THE FINAL INSPECTION.
- IF THE O.W.T.S. DESIGN IS A PRESSURIZED SYSTEM THE PUMP VAULT MUST BE FILLED WITH WATER IN ORDER TO CYCLE THE SYSTEM DURING THE FINAL INSPECTION.

SURVEY AND PLAT  
COMPLETED BY OTHERS

06/19/2024

ISSUED FOR PERMIT									
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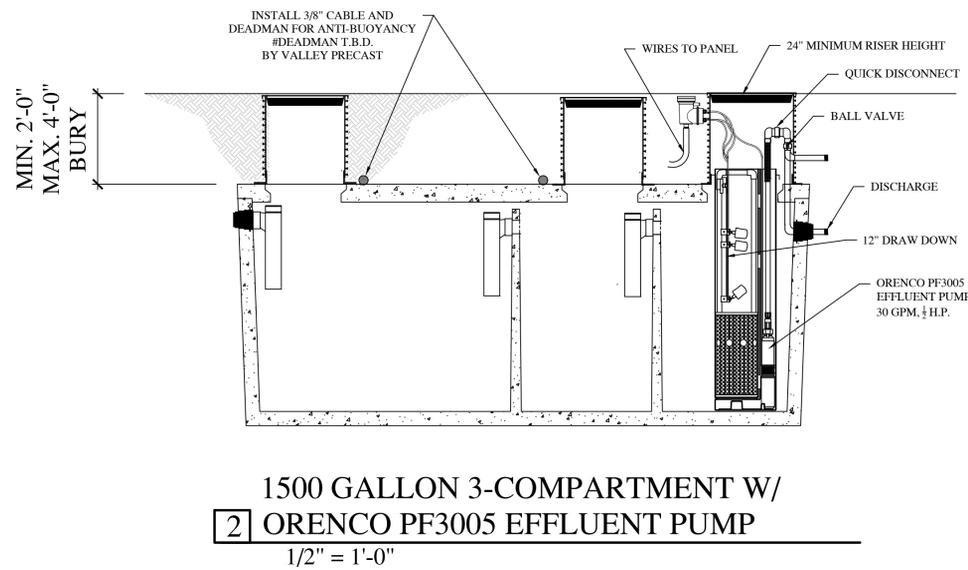
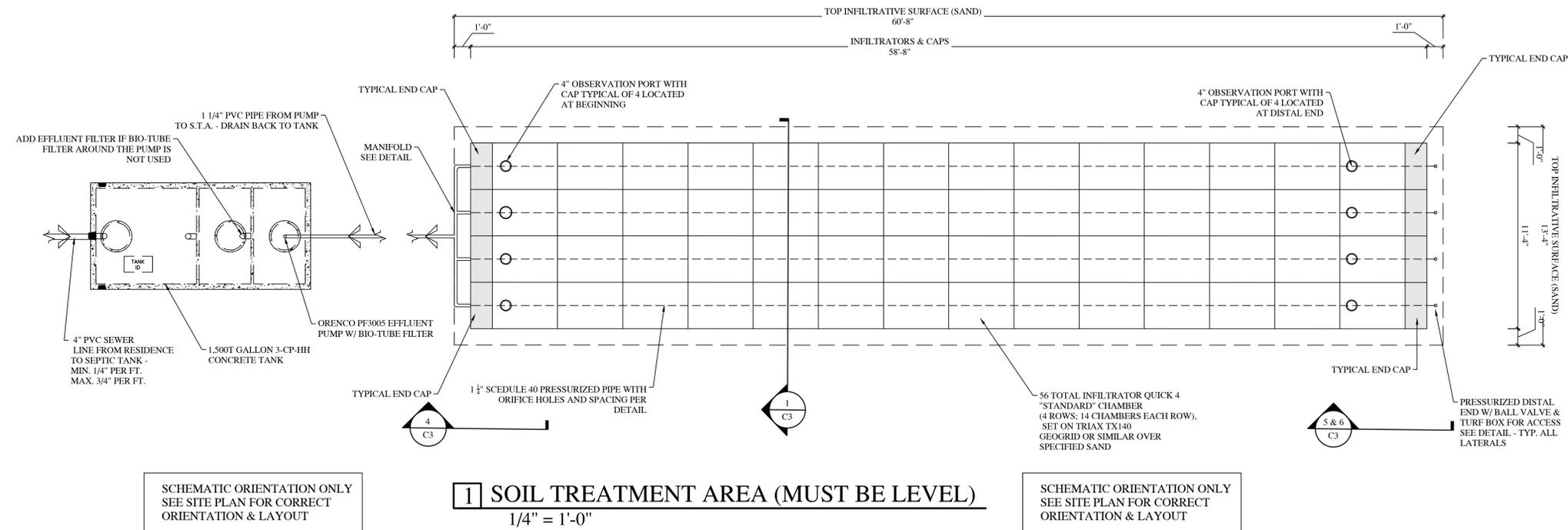
**TROUT CREEK**  
ENGINEERING

100 North Main Street  
Gunnison, CO 81230  
(970) 642-4110

**MORTELL RESIDENTIAL O.W.T.S.**  
**475 WINZE ROAD**  
**GUNNISON COUNTY, CO**

MOST CURRENT DATE:  
06/19/2024  
JOB NO:  
925  
SHEET:

C1



**DESIGN NOTES**

- Design per performance test per ASTM C1227
- Top surface area 23.4 ft<sup>2</sup>
- f'c @ 28 days; concrete = 6,000 PSI Min.
- Installation:
  - Tank to be set on 5" min. sand bed or pea gravel
  - Tank to be backfilled uniformly on all sides in lifts less than 24" and mechanically compacted
  - Excavated material may be used for backfill, provided large stones are removed
  - Excavation should be dewatered and tank filled with water prior to being put in service for installation with water table less than 2' below grade
  - Meets C1644-06 for resilient connectors
  - Inlet and Outlet identified above pipe
  - Delivered complete with internal piping
  - Control Panel to be mounted in sight line of tank
  - 4' Maximum bury depth

ALLOWABLE BURY (Based on Water Table)	
WATER TABLE	ALLOWABLE EARTH FILL
0' - 0"	3' - 0"
1' - 0"	4' - 0"
2' - 0"	4' - 0"
3' - 0"	4' - 0"
DRY	4' - 0"

Digging Specs	Invert		Dimensions			Net Capacity				Net Weight		
	Inlet	Outlet	Length	Width	Min. Height	Inlet	Middle	Outlet	Total	Lid	Tank	Total
15' Long x 8' Wide 56" below inlet	56"	54" or 73"	162"	78"	92"	1016 gal	505 gal	507 gal	2028 gal	5420 lbs	16240 lbs	21860 lbs

**3 TANK SPECIFICATIONS**

ISSUED FOR PERMIT

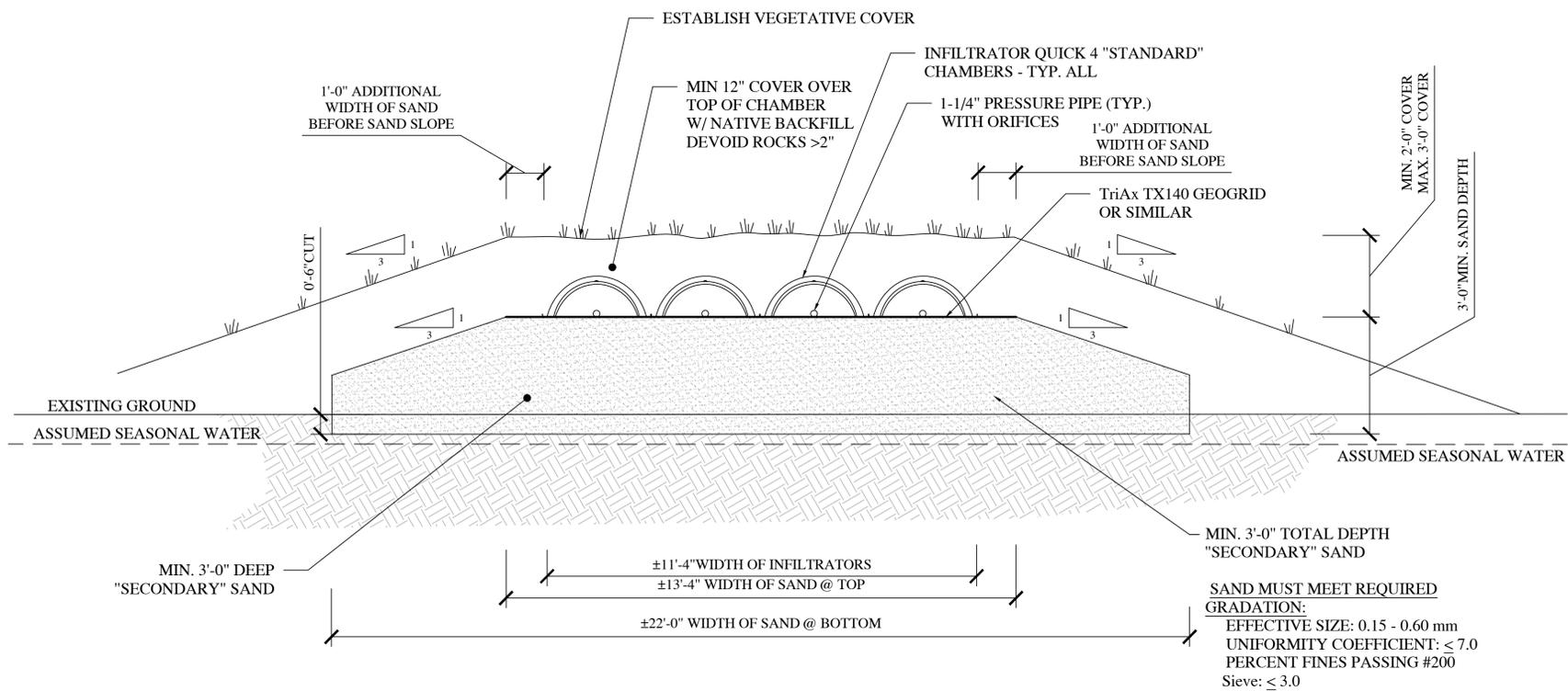


**TROUT CREEK**  
ENGINEERING

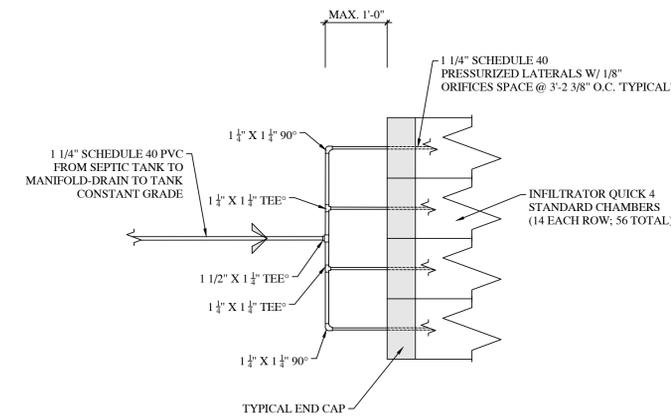
100 North Main Street  
Gunnison, CO 81230  
(970) 642-4110

MORTELL RESIDENTIAL OWTS  
475 WINZE ROAD  
GUNNISON COUNTY, CO

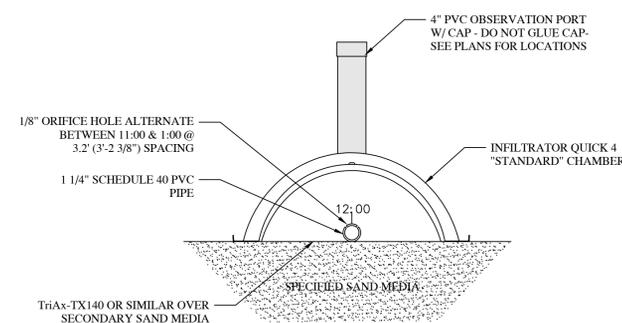
MOST CURRENT DATE:  
06/19/2024  
JOB NO:  
925  
SHEET:



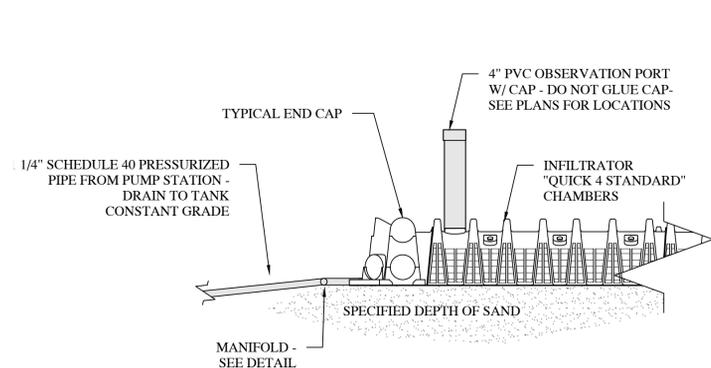
**1** CROSS SECTION DETAIL  
1/2" = 1'-0"



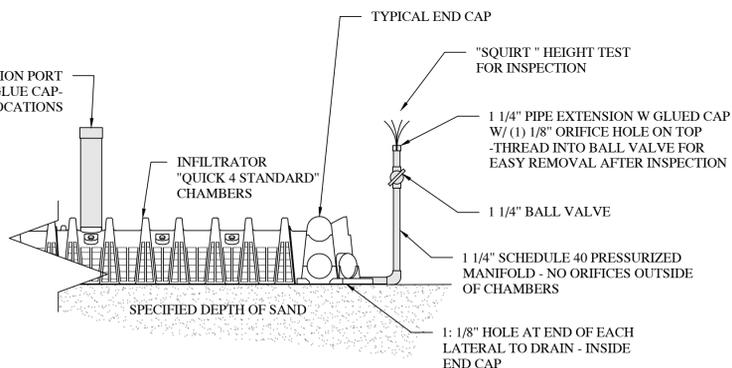
**2** MANIFOLD DETAIL  
1/4" = 1'-0"



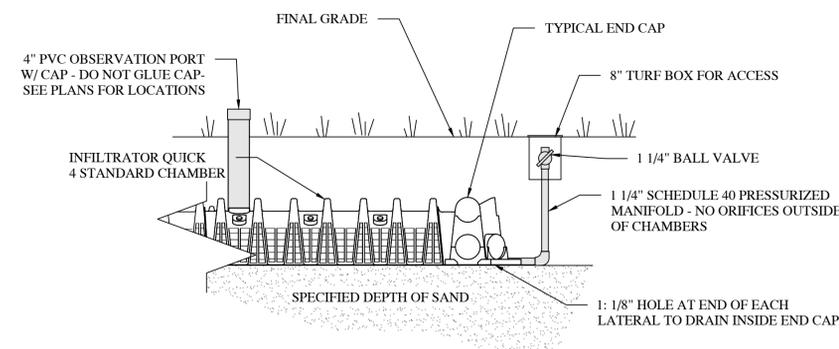
**3** ORIFICE SIZE & SPACING  
1: 1/8" ORIFICE HOLE EVERY 3.2' (3'-2 3/8")  
ROTATING BETWEEN 11:00 & 1:00 O'CLOCK



**4** BEGINNING OF SOIL TREATMENT AREA  
3/4" = 1'-0"



**5** DETAIL FOR INSPECTION ONLY  
3/4" = 1'-0"



**6** DETAIL AFTER INSPECTION (FINAL)  
3/4" = 1'-0"

ISSUED FOR PERMIT	



100 North Main Street  
Gunnison, CO 81230  
(970) 642-4110

MORTELL RESIDENTIAL OWTS  
475 WINZE ROAD  
GUNNISON COUNTY, CO

MOST CURRENT DATE:	06/19/2024
JOB NO.:	925
SHEET:	C3

# TROUT CREEK ENGINEERING

100 North Main Street  
Gunnison, CO 81230  
970-642-4110

## O.W.T.S. Variance Request

**For:** John Mortell  
Lot 15 Lost Miner Ranch Subdivision  
Gunnison County, Colorado

**Prepared By:** Trout Creek Engineering L.L.C.  
100 North Main Street  
Gunnison, Colorado 81230  
970-642-4110

### **I. Summary**

The applicant is requesting a variance through the Gunnison County Environmental Health Board to allow a County reduction of a horizontal distance between the proposed septic tank location and the delineated wetlands per Section 7.D & Table 7-1 of the Gunnison County OWTS regulations. This reduction would meet the State of Colorado's Regulation 43 horizontal setback requirement.

Gunnison County O.W.T.S. Regulations Section 7.D.1 states "*Components of an OWTS listed in Table 7-1 shall be installed or located in accordance with the minimum distance requirements provided in the table.*"

*Gunnison County O.W.T.S. Regulations Table 7-1 States "A Septic Tank shall be a minimum of 100' from a lake, water course, irrigation ditch, stream or wetland"*

### **The Following is being submitted in reference to Gunnison County Regulation 3.M.1.b Variance Procedure:**

1. This variance is being requested for the installation of an O.W.T.S. on the 11.92-acre property, with the proposed septic tank to be located +/- 60' from the edge of the delineated wetlands, while all other horizontal setbacks requirements can be met. The property "Building Envelope" is surrounded with Delineated Wetlands and provides no alternative location for the septic tank. It should be noted that this variance request meets all State of Colorado Regulation 43 horizontal distance requirements.

2. Colorado Department of Public Health and Environment Regulation #43 was adopted by the State of Colorado and required local boards of health, within 1 year, to update their local regulations which must meet, at a minimum, that regulation, however allowing a more stringent regulation if desired.
  - Within the current State Regulation #43 the Minimum Horizontal Distance requirement between a Septic tank and a Lake, Water Course, Irrigation Ditch, Stream and Wetlands is 50', where Gunnison County had elected this to be 100'.
  - It is my professional opinion that the installation of a Septic tank with the horizontal distance of +/- 60' from the delineated wetlands will result in no greater risk than that associated with compliance with the requirements of the Gunnison County Regulations.
  - It should be noted that within Both the current Gunnison County and the State's Regulation 43 (Table 7-1) ONLY requires a minimum horizontal setback distance of 50'-0" between a Septic Tank and a Spring, Well, Suction Line, Potable Water Supply. It is my professional opinion that if this were a serious risk to public health and safety then the State of Colorado AND Gunnison County would not have this minimum setback requirement of 50' as a potable well is directly related to public health.
  - As shown within the submitted Site Plan All other horizontal setback requirements, as indicated in the Gunnison County O.W.T.S. Regulations can and will still be met if this variance is to be granted.
3. There are no alternatives for this property in order to have the Septic Tank meet the 100' horizontal setback requirements between the wetlands.

Thank you



Bill Barvitski, P.E.

Trout Creek Engineering L.L.C.

970-642-4110

**475 Winze Rd. Project Area-Lost Miner Ranch  
Aquatic Resources Delineation  
TABLE OF CONTENTS**

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3.0 BACKGROUND INFORMATION..... 4

4.0 SITE INVESTIGATION AND DESCRIPTION .....6

5.0 JURISDICTIONAL ANALYSIS..... 9

6.0 SUMMARY AND CONCLUSIONS ..... 10

FIGURES

APPENDIX A      PHOTOGRAPHS

APPENDIX B      DATA FORMS

## **Aquatic Resources Delineation Report – 475 Winze Rd Project Area-Lost Miner Ranch**

### **1.0 INTRODUCTION**

Bio-Environs was contracted by the property owner, John Mortell, to perform a delineation of the boundaries of aquatic resources, including wetlands that occur within an approximately 9.5 acre project area established within the approximately 12.0-acre 475 Winze Road-Mortell property in Gunnison County, CO. The 475 Winze Rd. parcel is a deeded agricultural property within the Lost Miner subdivision located southeast of Gunnison, Colorado along Tomichi Creek. The investigation was performed on April 18, 2024. The project area is at the following location:

475 Winze Rd  
Lot 15 Lost Miner Ranch Subdivision  
Section 11 T49 N R1 E P.M. 6<sup>th</sup> PM  
38.52400° N, -106.83512° W NAD83 (Center of Property)  
Gunnison County, Colorado  
Elevation: 7775'  
(Figure 1)

The Aquatic Resources Delineation has been completed for planning and Gunnison County land development requirements associated with potential development of the property.

This 2024 study identifies aquatic resources that include two wetland areas and one irrigation ditch within the project area (Figure 2). Wetlands A, B (1.55 ac) are emergent wetlands associated with low lying swale features One irrigation ditch that includes an OHWM (500 LF) is identified as non-wetland water feature within the property boundaries. Wetlands A and B are supported with hydrology provided by low lying geomorphic position, drainage of the surrounding irrigated pasture a well as a seasonally high-water table. The aquatic resources identified in this report have a surface connection to Tomichi Creek which is a main tributary to the Gunnison River. The Gunnison River is a main tributary to the Colorado River at Grand Junction, CO. The Colorado River is considered a “waters of the US.”

This report identifies the aquatic resources, including wetlands, of the project area based on our professional understanding and interpretation of the *Corps of Engineers Wetland Delineation Manual (1987)*, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)*, 2010, and Corps of Engineers guidance documents and regulations. Review of other “waters of the United States” on site were made based on definitions and guidance found in 33 CFR 328.3, Corps Regulatory Guidance Letters, and the wetland delineation manual. The Corps of Engineers administers Section 404 of the Clean Water Act which regulates the discharge of fill or dredged material into all “waters of the United States,” and is the

regulatory authority that must make the final determination as to the jurisdictional status of the project area.

## **2.0 REGULATORY DEFINITIONS**

### **2.1 Waters of the United States**

“Waters of the United States” are within the jurisdiction of the Corps of Engineers under the Clean Water Act. “Waters of the United States” is a broad term which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the “Ordinary High Water Mark (OHWM)”, Also included are manmade water bodies such as quarries and ponds which are no longer actively being mined or constructed.

Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of “waters of the United States” can be found in the Federal Register (33 CFR 328.3), and will be interpreted from a regulatory standpoint based on a most recent Supreme Court decision

### **2.2 Wetlands**

Wetlands are a category of “waters of the United States” for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual (1987)* and its supplements, wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

### **2.3 Other Waters of US**

Detection of aquatic resources or non-wetland water features, also referred to as “other waters of US” in this report was based on *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States (2008)*. “Other waters” for this study include rivers, streams, arroyos, drainages or other features that convey water and may support an active floodplain. The OHWM is used to identify the lateral limits of non-wetland waters under Section 404 of the Clean Water Act (33 USC 1344). Federal jurisdiction over “other waters of the US” can extend to the ordinary high water mark (OHWM) as defined in 33 CFR Part 328.3.

In the mountain west, clear natural scour lines impressed on the bank, recent erosion, destruction of native terrestrial vegetation, and the presence of litter and debris are the most commonly used physical features to indicate the OHWM (US Army Corps of Engineers, South Pacific Division, 2001). Lichvar and Wakeley (2004) continue to refine OHWM indicators and delineation methods, and have developed lists of geomorphic and vegetative indicators. These have been used to aid in defining the OHWM within the project area.

Other terms used to identify waters in this report are “non-wetland water feature” which may indicate the presence of ditches, streams, rivers or water bodies that are not wetlands.

## 2.4 Wetland Vegetation

In the course of developing the wetland determination methodology the Corps, in cooperation with the U.S. Fish and Wildlife Service, Environmental Protection Agency, and the Soil Conservation Service, compiled a comprehensive list of wetland vegetation. The indicator status of plant species is expressed in terms of the estimated probabilities of that species occurring in wetland conditions within a given region. The indicator categories as defined by the Corps are:

Obligate Wetland (OBL) occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW) usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

Facultative (FAC) equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Facultative Upland (FACU) usually occur in non-wetlands, but occasionally found in wetlands (estimated probability 1%-33%).

Obligate Upland (UPL) occur almost always (estimated probability >99%) in uplands.

The percentage of the dominant wetland species in each of the vegetation strata in the sample area determines the hydrophytic, or wetland status of the plant community. Soil type and hydroperiod are two factors important in controlling species composition.

## 2.5 Hydric Soils

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA Soil Conservation Service, 1994). Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation for more than a few days. Saturation or inundation, when combined with microbial activity in the soil, causes the depletion of oxygen. This anaerobiosis promotes certain biogeochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils in the field (USDA Natural Resources Conservation Service, 2006). The indicators that we use are a subset of the NTCHS *Field Indicators of Hydric soils in the United States, Version 7.0 (2010)* that are commonly found in the Western Mountains. Indicators are presented in three groups. Indicators for “All

Soils” include eight indicators of hydric soil regardless of soil texture. There are five indicators for “Sandy Soils” for use in soil layers with a texture of loamy fine sand or coarser. There are six indicators for “Loamy and Clayey Soils” in the Western Mountains region for use in soil layers with a loamy very fine sand or finer texture.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma, which are combined in that order to form the color designation. The *hue* notation of a color indicates its relation to red, yellow, green, blue, and purple; the *value* notation indicates its lightness; and the *chroma* notation indicates its strength or departure from a neutral of the same lightness.

The symbol for *hue* consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for *value* consists of numbers from 0 for absolute black, to 10 for absolute white. The notation for *chroma* consists of numbers beginning with 10 for neutral grays and increasing at equal intervals. Soil color, texture and depth provide the basis for assigning a hydric soil indicator.

## **2.6 Wetland Hydrology**

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Wetland hydrology indicators for the Western Mountain Region include primary and secondary indicators grouped as: A) Observation of Surface Water or Saturated Soils B) Evidence of Recent Inundation C) Evidence of Current or Recent Soil Saturation and D) Evidence of Other Site Conditions or Data. One primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

## **2.7 Wetland Definition Summary**

In general, an area must meet all three criteria to be classified as a wetland. In certain problem areas such as seasonal wetlands which are not wet at all times, or in recently disturbed (atypical) situations, an area may be considered a wetland if only two criteria are met. In special situations, an area which meets the wetland definition may not be within the Corps of Engineers jurisdiction due to a specific regulatory exemption.

## **3.0 BACKGROUND INFORMATION**

### **3.1 Existing Maps**

Several sources of information were consulted to identify potential wetlands and wetland soil units on the site. These include the U.S. Fish and Wildlife Service's *National Wetland Inventory* (NWI) and the Natural Resources Conservation Service's (NRCS) *Soil Map-Gunnison Area, Colorado, Parts of Gunnison, Hinsdale, and Saguache Counties*. These

maps identify *potential* wetlands and wetland soil units on the site. The NWI maps were prepared from high altitude photography and in most cases were not field checked. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the Corps of Engineers. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The mapping units are often generalized based on topography, and many mapping units contain inclusions of other soil types for up to 15% of the area of the unit. FEMA mapping of the area was also used to identify any potential areas of concern within the project area

### **3.2 National Wetland Inventory Map**

The *National Wetland Inventory* (NWI) map of the area (Figure 3) identifies two wetland types within the project area. Portions of two separate swales are identified as emergent, persistent, seasonally flooded, palustrine (PEM1C). Three isolated depressional features that are within the project area are identified as emergent, persistent, temporarily flooded, palustrine (PEM1A). These depressional features are likely to be identified erroneously as wetlands on the NWI Map due to historic irrigation influence to hydrology that is common to this area.

### **3.3 Soil Survey**

Soil information for this area is available on the NRCS Websoil survey. According to the (NRCS) *Soil Map- Gunnison Area, Colorado, Parts of Gunnison, Hinsdale, and Saguache Counties*, the property generally includes two soil types (Figure 4). The northern piece of the property is comprised of the Gas Creek sandy loam, 0 to 1 percent slopes (GaA). The southern portion of the parcel is situated on the Irim loam, 1 to 5 percent slopes (IrB) soil series. A description of these soil types is included as Figure 5. Both the Gas Creek and Irim soil types are considered hydric.

### **3.4 FEMA Mapping**

Current FEMA Mapping indicates that the majority of the property is associated with the 100-yr floodplain (Figure 6).

### **3.5 Remote Sensing**

Current Google Earth and World Imagery Aerial photography, the National Wetland Inventory Mapper and NRCS soils mapping were used in the preliminary and field assessment of the site. Current World Imagery (ESRI) is utilized for the base map in the delineation map. LIDAR [United States Elevation Data (NED) (1m Resolution)] and USGS topography information was accessed for elevation and topographical data. USGS and stream flow gauging stations were used to assess current and historical stream flows to provide hydrologic data.

### **3.6 USGS Topography**

Signal Peak, Colorado

## **4.0 SITE INVESTIGATION AND DESCRIPTION**

### **4.1 Investigation Methodology**

The delineation of wetlands and non-wetland water features on the site was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)*, 2010 as required by current Corps of Engineers policy.

Prior to the field work, the background information was reviewed to establish the probability and approximate location of wetlands on the site. In addition, a delineation completed in 1996 was reviewed. Next a general reconnaissance of the project area was made to determine site conditions. The site was walked with the specific intent of determining wetland boundaries. Paired data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology, and dominant vegetation. Note that no attempt was made to examine a full soil profile to confirm any soil series designations. However, soils were examined to a depth of 16 inches where possible to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for the Taylor River area.

#### **4.1.1 Site Photographs**

Photographs of the site are in Appendix A. These photographs are the visual documentation of site conditions at the time of inspection. The photographs are intended to provide representative visual samples of any wetlands or other special features found on the site.

#### **4.1.2 Delineation Data Forms**

Where stations represent a wetland boundary point, they are presented as paired data sheets, documenting the upland and wetland sides of the wetland boundary. The data forms used in the jurisdictional delineation process are in Appendix B. These forms are the written documentation of how representative sample stations meet or do not meet each of the wetland criteria. Other points were also inspected during the delineation process but were not specifically recorded on data sheets.

#### **4.1.3 GPS Survey of Wetland Boundary**

The data points and boundaries of wetlands and other water features were surveyed using a Trimble Geo XT-Explorer GPS unit that has advertised sub-meter accuracy.

### **4.2 General Site Conditions**

The 9.5-acre project area is established within the southern portion of the 12.0-acre 475 Winze Rd. parcel for planning purposes and site configuration associated with development of a private residence (Figure 2). The designated agricultural property is currently undeveloped except for a driveway access located in the far southern portion of the project area. Other private parcels and Lost Miner property bound the parcel to the west and east, Tomichi Creek to the north and BLM lands to the south. The property is situated on a terrace that extends south from the stream channel to the toe of the foothills

that bound the property to the south. The parcel and project area are comprised of relatively level, irrigated hay meadow that comprises the valley floor in this area. The hay meadow has been subject to over 100 years of irrigation practices for hay production as is common in Gunnison Valley. The on-going, seasonal irrigated conditions have influenced the hydrology, vegetation, and soils in the meadows. Two identified swale features that transect the project area from east to west support natural wetland conditions. The two swales join to the west of the parcel to enter Tomichi Creek and provide a continuous surface connection of the swales to Tomichi Creek. An irrigation ditch that services the area and includes an OHWM is identified in the far southern section of the property. Soils associated with the hay meadow terrace were dry to depths of 19 inches in depth prior to the onset of seasonal irrigation on the day of investigation. This investigation was timed to assess the area before the initiation of irrigation to reveal natural hydrologic conditions before the influence of irrigation waters. The northern portion of the area was not included in the study area as no development is proposed in this portion of the parcel.

The area was investigated at the beginning of the growing season making the identification of some vegetation identifiable although some species were not identifiable beyond genus level on the day of investigation. The wetland areas are dominated by Northwest territory sedge (*Carex utriculata*, OBL), with narrow-leaf willow (*Salix exigua*, FACW) established on the edges of the swales in various locations.

As of May 1, 2024 the Gunnison basin experienced above average precipitation over the 2023-2024 winter resulting in over 104% of average snowpack for the upper Gunnison Basin which includes Tomichi Creek. The area received seasonal precipitation events throughout the spring prior to the 2024 investigation with flows steadily increasing due to the beginning of spring runoff. USGS streamflow gauging site Tomichi Creek at Gunnison, CO – 09119000, located approximately 7.0 miles west, provides relative information for streamflow trends in the vicinity of the project area. According to this site flows within Tomichi Creek were 192 cfs on April 14, 2024. This flow is higher than the median of approximately 185 cfs for this date.

### **4.3 Results**

Results are presented for the 475 Winze Rd project area below, and in Figure 2 and Table 1.

#### **Wetlands A and B (total 1.55 ac)**

Two wetland areas are identified within the project area. Wetland A and B are similar low-lying swale features that support generally emergent vegetation and exhibit a continuous vegetated surface connection to Tomichi Creek (Figure 2).

#### **Wetland A (0.90 ac)**

##### **Sample point A-14 wet**

Sample Pt. A-14 wet is in a swale that is associated with an abandoned ox-bow in the southern portion of the project area (Figure 2, Photograph 1). After transecting the parcel from east to west the swale joins the swale that represents Wetland B to join Tomichi

Creek to the west. Vegetation in the swale is dominated by Northwest territory sedge (OBL) and includes narrow-leaf willow (FACW) growing intermittently along the edges of the swale. The wetland in this area supports a silty clay loam from 0 to 14 inches in depth showing a color of 10YR2/2 with 10% 5YR4/6 concentrations in the matrix. Soils from 14 to 19 inches in depth are a 10YR2/1 sandy clay loam with no redox features. The presence of saturated soils at the surface and the presence of surface water satisfies the wetland hydrology criterion on the day of investigation. All three wetland criteria are met at this site (see data form A-14 wet in Appendix B).

#### Sample point A-14 upl

The adjacent upland to Wetland A at this site is the terrace and irrigated hay meadow that comprise most of the project area and property (Figure 2, Photograph 2). Vegetation in the hay meadow is dominated by wetland and upland vegetation including common timothy (*Phleum pratense*, FAC) and common dandelion (*Taraxacum officinale*, FACU). Other pasture grasses were present but not identifiable due to earliness of season. Soils at this site are a 10YR2/2 sandy clay loam with 5% concentrations in the matrix with a color of 5YR4/6 from 0 to 12 inches in depth. From 12 to 18 inches in depth soils are a 10YR3/2 silty clay loam with 5% concentrations with a color of 5YR4/6 in the matrix. The presence of hydric soil indicators is likely due to the historical irrigation influence to the area. No wetland hydrology indicators were observed on the day of investigation. A lack of a dominance of wetland vegetation and wetland hydrology on the day of investigation distinguish the uplands from the wetland area (see data form A-14 upl in Appendix B).

#### **Wetland B (0.65 ac)**

##### Sample point B-22 wet

Sample Pt. B-22 wet is in the swale in the northern portion of the project area and supports similar conditions to that of the swale that comprises Wetland A (Figure 2, Photograph 3). Wetland B also transects the project area from east to west to connect to Wetland A just east of where the features join Tomichi Creek. Like Wetland A, vegetation in the swale is dominated by Northwest territory sedge (OBL) but does not include willow along its edges. Wetland B in this area supports a silty clay loam from 0 to 14 inches in depth with a color of 10YR2/2 with 10% 5YR4/6 concentrations in the matrix. Soils from 14 to 19 inches in depth are a 10YR2/1 sandy clay loam with no redox features. The presence of saturated soils at the surface and surface water satisfies the wetland hydrology criterion on the day of investigation. All three wetland criteria are met at this site (see data form B-22 wet in Appendix B).

##### Sample point B-22 upl

The adjacent upland to Wetland B at this site is the irrigated hay meadow that comprise much of the project area and property (Figure 2, Photograph 4). Vegetation in the hay meadow is dominated by common timothy (*Phleum pratense*, FAC). Other pasture grasses were present but not identifiable due to earliness of season. Soils at this site are a 10YR2/2 sandy clay loam with 5% concentrations in the matrix with a color of 5YR4/6 from 0 to 12 inches in depth. From 12 to 18 inches in depth soils are a 10YR3/2 silty clay loam with 5% concentrations with a color of 5YR4/6 in the matrix. The presence of a

dominance of wetland vegetation and hydric soil indicators is likely due to the historical irrigation influence to the area. No wetland hydrology indicators were observed on the day of investigation. A lack of a dominance of wetland vegetation and wetland hydrology on the day of investigation distinguish the uplands from the wetland area (see data form B-22 upl in Appendix B).

**Non-wetland water feature**

One irrigation ditch that includes an OHWM is identified within the project area.

**Irrigation ditches** (total 500 LF)

An irrigation ditch located along Winze Rd is part of the Lost Miner Ranch irrigation system that services the property. This feature is identified as a non-wetland water feature. The ditch is culverted underneath the existing driveway access to the property. The ditch is generally associated with irrigation supply to local pasture land and includes control features within the irrigation system.

**Depressional features**

There are two and a portion of an additional lower lying depressional feature within the project area. These areas are subject to ponding of seasonal irrigation waters during the irrigation season. Water enters these areas as surface irrigation and the features do not include a continuous surface connection to Tomichi Creek. The low-lying areas include irrigated conditions and are not associated solely with natural hydrology. As such, they are not identified as natural features in this investigation.

**Table 1**  
**Wetland Area**  
**and non-wetland water feature**

	Wetland Type	Acres/Linear feet
Wetland A	PEM1C	0.90 ac
Wetland B	PEM1C	0.65 ac
Irrigation Ditch	Non-wetland water feature	500 LF
<b>Totals</b>		<b>1.55 ac Wetland 500 LF Irrigation ditch</b>

**5.0 JURISDICTIONAL ANALYSIS**

**5.1 Corps of Engineers**

The Corps of Engineers has authority over the discharge of fill or dredged material into “waters of the United States.” This includes authority over any filling, mechanical land clearing, or construction activities that occur within the boundaries of any “water of the United States”. A permit must be obtained from the Corps of Engineers before any of

these activities occur. Permits can be divided into three general categories: the Regional General Permit for Colorado, Nationwide Permits, and Individual Permits.

*Nationwide Permits* have been developed for projects which meet specific criteria and are deemed to have minimal impact on the aquatic environment.

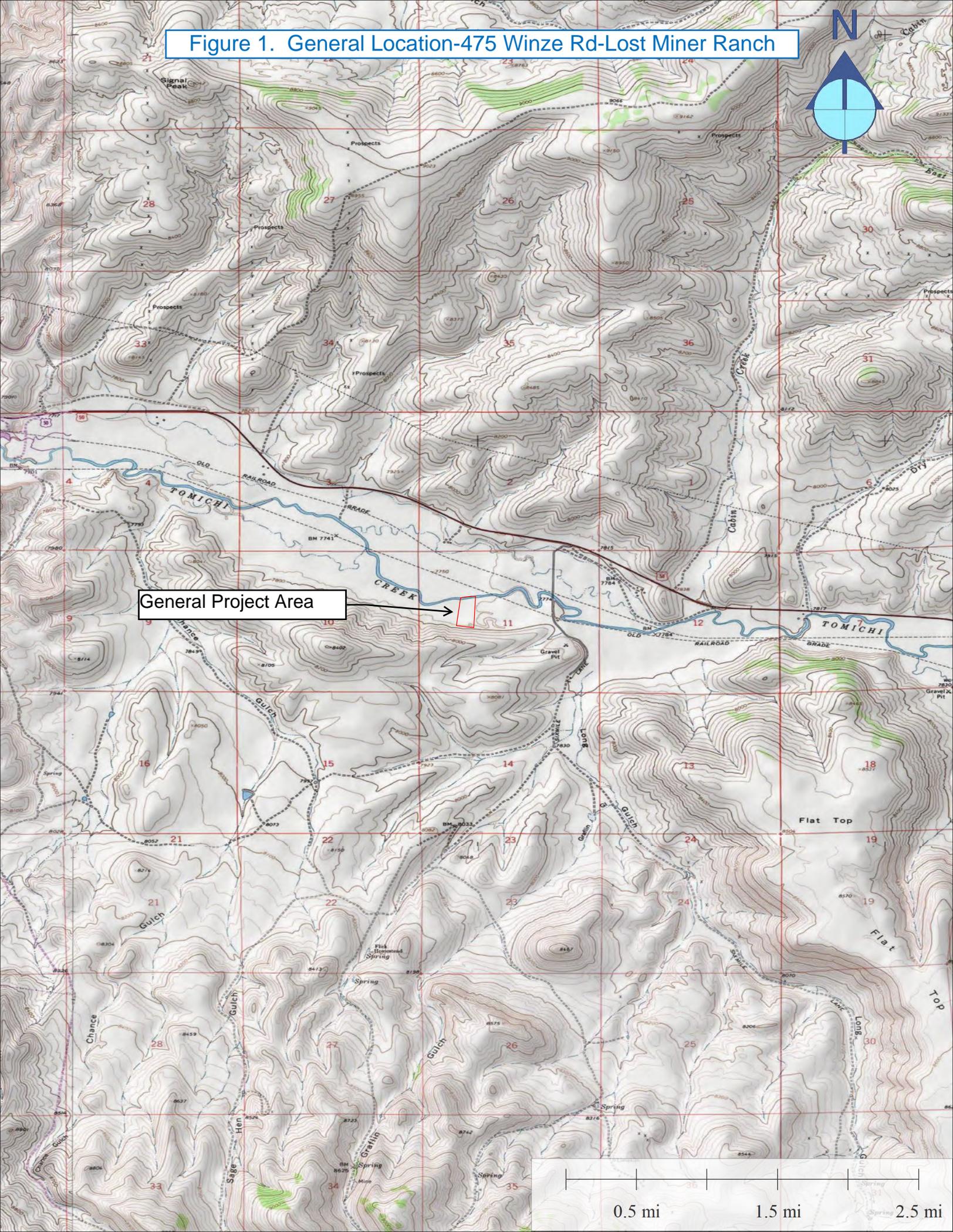
*Individual Permits* are required for projects that do not fall into one of the specific Nationwide Permits or the Regional General Permit or that are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency and public scrutiny and may require several months to more than a year for processing.

## **6.0 SUMMARY AND CONCLUSIONS**

On April 14, 2024, Bio-Environs inspected the approximately 9.5-acre 475 Winze Rd Project Area within the 12.0-acre Mortell property near Gunnison, CO. Two emergent wetland areas totaling 1.55 acre and 500 LF of irrigation ditch are identified within the project area. The wetlands and water features identified in this study exhibit a connection to the Gunnison River through a continuous surface connection to Tomichi Creek. The Corps of Engineers provides the final approved aquatic resources boundary confirmation and approved jurisdictional determination as requested. Gunnison County, through their Land Use Resolution (LUR), can utilize information from these aquatic reports to determine if features of a planned building and its other features meet conditions of Section 11-107: Protection of Water Quality of the LUR. Section 11-107 of the LUR establishes setbacks from water features and wetlands. Gunnison County provides the final evaluation of a building and its features with respect to setbacks from water resources.

## FIGURES

Figure 1. General Location-475 Winze Rd-Lost Miner Ranch



General Project Area

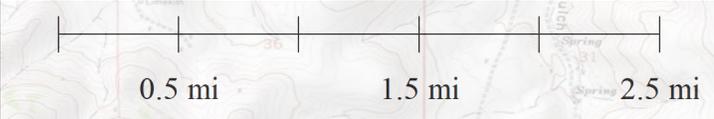


Figure 2. Aquatic Resource Delineation-475 Winze Rd. Project Area - Lost Miner Ranch



Sample Pt A-14 wet

Sample Pt A-14 upl

Sample Pt B-22 upl

Sample Pt B-22 wet

38.522627  
-106.836142

38.525624  
-106.834178

Area Not Delineated

Aquatic Resource Delineation-475 Winze Rd Project Area

- Wetland Area = 1.55 ac Emergent
- Limits of Project Area
- Non-wetland water feature - Irrigation ditch = 500 LF
- Property Boundary
- ◆ Culvert
- UPLAND SAMPLE POINT
- Wetland Data Point
- WETLAND SAMPLE POINT

Source: Current World Imagery

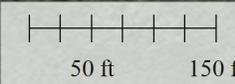
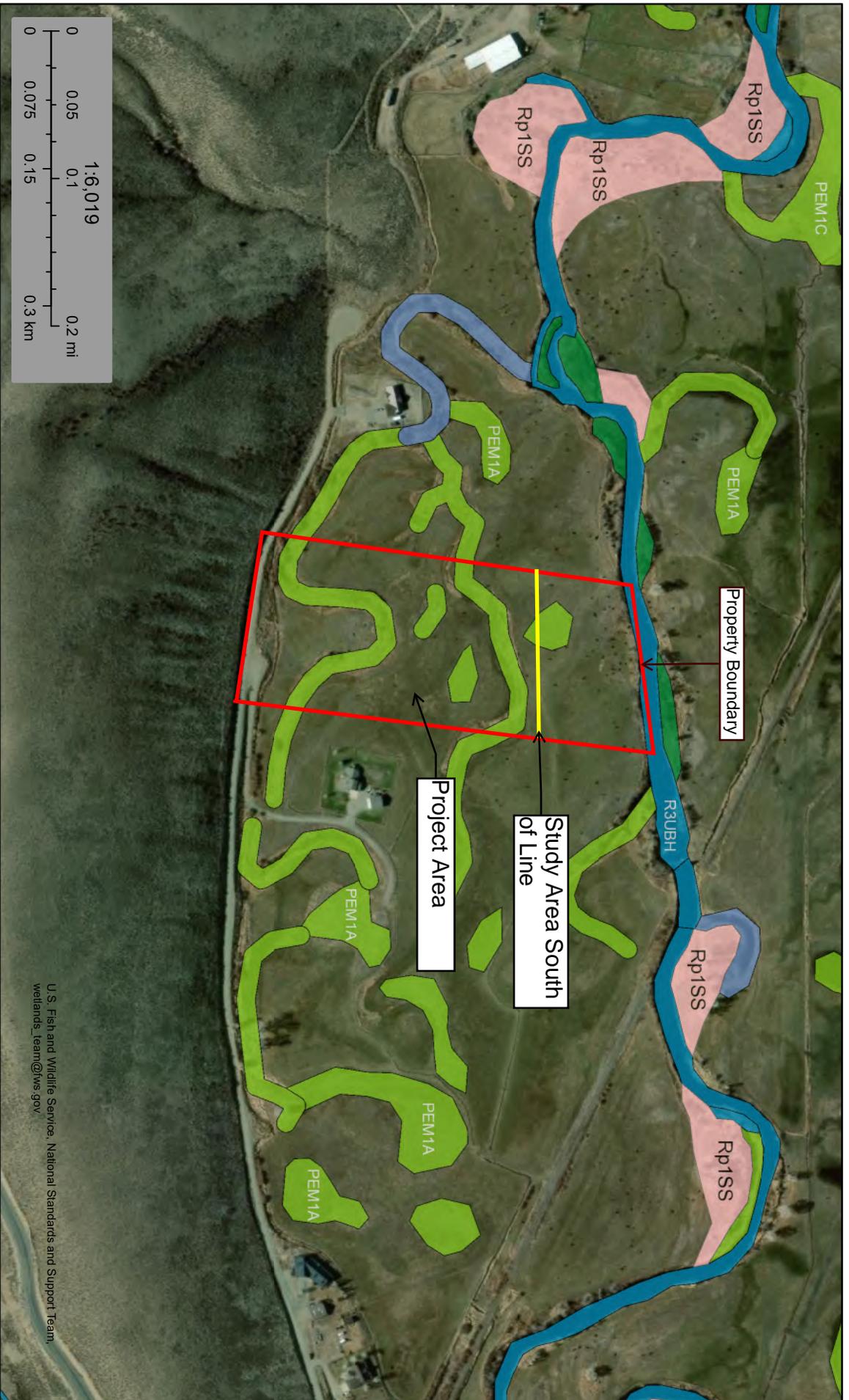


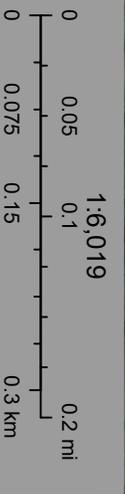
Figure 3. NWI Mapping-475 Winze Rd Project Area-Lost Miner Ranch



**Wetlands**

April 5, 2024

- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Lake
- Estuarine and Marine Wetland
- Freshwater Pond
- Other
- Riverine



U.S. Fish and Wildlife Service, National Standards and Support Team.  
wetlands\_team@fws.gov

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Figure 4. NRCS Soil Map-475 Winze Rd-Lost Miner Ranch

Soil Map—Gunnison Area, Colorado, Parts of Gunnison, Hinsdale, and Saguache Counties  
(475 Winze Rd)



Map Scale: 1:2,090 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2GB4	Duffson-Beenom, exposed complex, 5 to 40 percent slopes	0.2	1.6%
GaA	Gas Creek sandy loam, 0 to 1 percent slopes	1.9	15.5%
IrB	Irim loam, 1 to 5 percent slopes	10.1	83.0%
<b>Totals for Area of Interest</b>		<b>12.2</b>	<b>100.0%</b>

## Map Unit Description (Brief, Generated)

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 in this report, along with the maps, provide information on the composition of map units and properties of their components.

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.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

## Report—Map Unit Description (Brief, Generated)

### Gunnison Area, Colorado, Parts of Gunnison, Hinsdale, and Saguache Counties

**Map Unit:** 2GB4—Duffson-Beenom, exposed complex, 5 to 40 percent slopes

**Component:** Duffson (45%)

The Duffson component makes up 45 percent of the map unit. Slopes are 5 to 40 percent. This component is on hillslopes, mountains. The parent material consists of slope alluvium derived from rhyolite and/or sedimentary rock. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the R048AA231CO Dry Mountain Loam Gunnison Basin LRU ecological site. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 4 percent. The soil has a very slightly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 2 within 30 inches of the soil surface.

**Component:** Beenom, exposed (35%)

The Beenom, exposed component makes up 35 percent of the map unit. Slopes are 5 to 40 percent. This component is on hillslopes, mountains. The parent material consists of residuum weathered from granite. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the R048AA235CO Dry Exposure Gunnison Basin LRU ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

**Component:** Menbar (5%)

Generated brief soil descriptions are created for major soil components. The Menbar soil is a minor component.

**Component:** Lucky (5%)

Generated brief soil descriptions are created for major soil components. The Lucky soil is a minor component.

**Component:** Woodhall, extremely stony (5%)

Generated brief soil descriptions are created for major soil components. The Woodhall, extremely stony soil is a minor component.

**Component:** Rock outcrop (5%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop soil is a minor component.

**Map Unit:** GaA—Gas Creek sandy loam, 0 to 1 percent slopes

**Component: Gas Creek (85%)**

The Gas Creek component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains, side drainageways, major streams, stream terraces. The parent material consists of recent, cobbly, mixed parent alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches (depth from the mineral surface is 15 inches) during June, July, August, September. Organic matter content in the surface horizon is about 85 percent. Below this thin organic horizon the organic matter content is about 3 percent. This component is in the R048AA241CO Mountain Meadow Gunnison Basin LRU ecological site. Nonirrigated land capability classification is 7s. Irrigated land capability classification is 6s. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface.

**Component: Alluvial land (5%)**

Generated brief soil descriptions are created for major soil components. The Alluvial land soil is a minor component.

**Component: Irim (5%)**

Generated brief soil descriptions are created for major soil components. The Irim soil is a minor component.

**Component: Wet soils (5%)**

Generated brief soil descriptions are created for major soil components. The Wet soils soil is a minor component.

**Map Unit: IrB—Irim loam, 1 to 5 percent slopes**

**Component: Irim (90%)**

The Irim component makes up 90 percent of the map unit. Slopes are 1 to 5 percent. This component is on flood plains, major streams. The parent material consists of recent, mixed origin alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches (depth from the mineral surface is 10 inches) during April, May, June. Organic matter content in the surface horizon is about 85 percent. Below this thin organic horizon the organic matter content is about 3 percent. This component is in the R048AA241CO Mountain Meadow Gunnison Basin LRU ecological site. Nonirrigated land capability classification is 5w. Irrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface.

**Component: Big Blue (5%)**

Generated brief soil descriptions are created for major soil components. The Big Blue soil is a minor component.

**Component: Gas Creek (5%)**

Generated brief soil descriptions are created for major soil components. The Gas Creek soil is a minor component.

**Data Source Information**

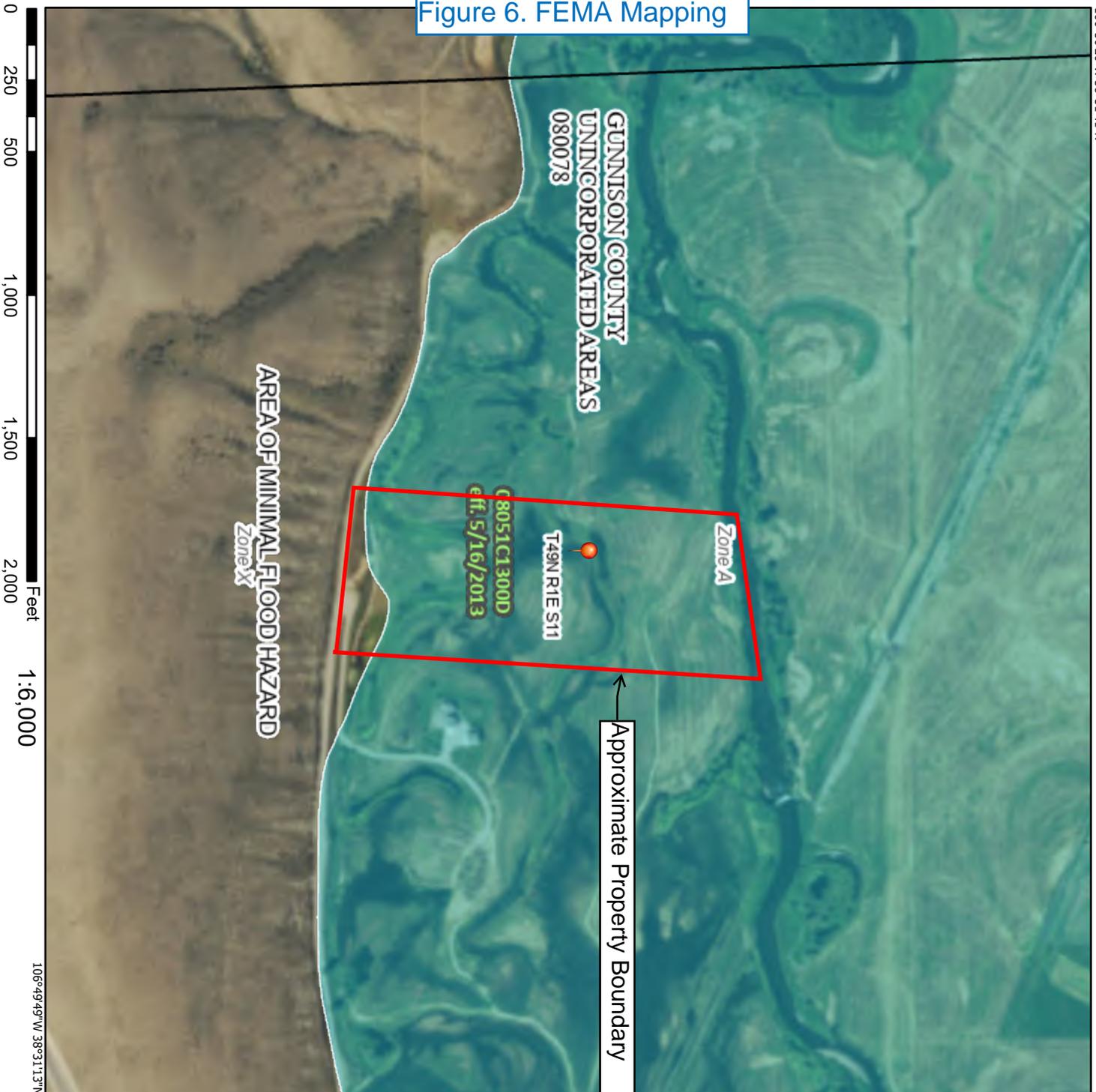
Soil Survey Area: Gunnison Area, Colorado, Parts of Gunnison, Hinsdale, and Saguache Counties

Survey Area Data: Version 16, Aug 22, 2023



106°50'26"W, 38°31'41"N

Figure 6. FEMA Mapping



## Legend

SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

<b>SPECIAL FLOOD HAZARD AREAS</b>	<p>Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway</p>
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<b>OTHER AREAS OF FLOOD HAZARD</b>	<p>0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X</p> <p>Future Conditions 1% Annual Chance Flood Hazard Zone X</p> <p>Area with Reduced Flood Risk due to Levee. See Notes. Zone X</p> <p>Area with Flood Risk due to Levee Zone D</p>
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<b>OTHER AREAS</b>	<p>NO SCREEN Area of Minimal Flood Hazard Zone X</p> <p>Effective LOMRs</p> <p>Area of Undetermined Flood Hazard Zone D</p>
<b>GENERAL STRUCTURES</b>	<p>Channel, Culvert, or Storm Sewer</p> <p>Levee, Dike, or Floodwall</p>

<b>OTHER FEATURES</b>	<p>20.2 Cross Sections with 1% Annual Chance Water Surface Elevation</p> <p>17.5 Coastal Transect</p> <p>Base Flood Elevation Line (BFE)</p> <p>Limit of Study</p> <p>Jurisdiction Boundary</p> <p>Coastal Transect Baseline</p> <p>Profile Baseline</p> <p>Hydrographic Feature</p>
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<b>MAP PANELS</b>	<p>Digital Data Available</p> <p>No Digital Data Available</p> <p>Unmapped</p>
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The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/5/2024 at 3:58 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**APPENDIX A**  
**PHOTOGRAPHS**



**Photograph 1.** Photograph taken April 18, 2024 looking southwest at Sample Pt. A-14 wet (475 Winze Rd Project Area-Lost Miner Ranch, Gunnison County, CO).



**Photograph 2.** Photograph taken April 18, 2024 looking west at Sample Pt. A-14 upl (475 Winze Rd Project Area-Lost Miner Ranch, Gunnison County, CO).



**Photograph 3.** Photograph taken April 18, 2024 looking north at Sample Pt. B-22 wet (475 Winze Rd Project Area-Lost Miner Ranch, Gunnison County, CO).



**Photograph 4.** Photograph taken April 18, 2024 looking south at Sample Pt. B-22 upl (475 Winze Rd Project Area-Lost Miner Ranch, Gunnison County, CO).

**APPENDIX B**  
**DATA SHEETS**

**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 475 Winze Rd - Lostminer City/County: Gunnison Sampling Date: 9/18/2024  
 Applicant/Owner: John mortell State: CO Sampling Point: A-14 wet  
 Investigator(s): T. Lapello, L. Cudlip Section, Township Range: Sec 11 T49N R1E  
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): none  
 Subregion (LRF): LARE Lat: 38.523474 Long: -106.835490 Datum: NAD 83  
 Soil Map Unit Name: IcB NWI classification: PEMIC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Yes  No  Are 'Normal Circumstances' present? Yes  No   
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: <u>Abandoned meander channel: Swale vegetated w/ surface connection to Tomichi creek. Irrigation has not started as of Day of Investigation.</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by:
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5m</u> )				FACW species _____ x 2 = _____
1. <u>Salix exigua</u>	<u>30%</u>	<u>Y</u>	<u>FACW</u>	FAC species _____ x 3 = _____
2. _____	_____	_____	_____	FACU species _____ x 4 = _____
3. _____	_____	_____	_____	UPL species _____ x 5 = _____
4. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
5. _____	_____	_____	_____	Prevalence Index = B/A = _____
= Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>1m</u> )				
1. <u>Carex utriculata</u>	<u>100%</u>	<u>Y</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Vegetation continues to Tomichi Creek.

SOIL

Sampling Point A-14 wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>		
0-14	10YR 2/2	90%	5YR 4/6	10	C	m	Silty Clay loams	
14-19	10YR 2/1	100	-	-	-	-	Sandy Clay loams	

Type C=Concentration D=Depletion RM=Reduced Matrix CS=Covered or Coated Sand Grains <sup>2</sup>Location PL=Pore Lining M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):  
 Type \_\_\_\_\_  
 Depth (inches) \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks \_\_\_\_\_

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes  No  Depth (inches): 1"

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): SFC

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) if available:

Remarks SFC connection to Tomichi Creek, ground surface saturated without active irrigation.

**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: 475 Winze Rd - Local Miner City/County: Gunnison Sampling Date: 4/19/2024  
 Applicant/Owner: John Mortell State: CO Sampling Point: A-14 up<sup>30.4m</sup>  
 Investigator(s): T. Capallo, L. Cudlip Section Township Range: Sec 11 T49N R1E  
 Landform (hill/slope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1-2  
 Subregion (LRP): LRRE Lat: 38.52347 Long: -106.835419 Datum: NAD 83  
 Soil Mac Unit Name: IcB NW classification: none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (if no, explain in Remarks)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation, Soil, or Hydrology naturally problematic? (if needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydic Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <u>Frigidated hay meadow - elevated above elevation of swale. Seasonal irrigation not started. Ditches are dry.</u>			

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50%</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>	
_____ = Total Cover				Total % Cover of:	Multiply by:
_____ = Total Cover				OBL species _____	x 1 = _____
_____ = Total Cover				FACW species _____	x 2 = _____
_____ = Total Cover				FAC species _____	x 3 = _____
_____ = Total Cover				FACU species _____	x 4 = _____
_____ = Total Cover				UPL species _____	x 5 = _____
_____ = Total Cover				Column Totals:	_____ (A) _____ (B)
_____ = Total Cover				Prevalence Index = B/A = _____	
<b>Herb Stratum (Plot size: <u>1m</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b>	
1. <u><i>Poa pratensis</i></u>	<u>65</u>	<u>Y</u>	<u>FAC</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u><i>Taraxacum officinale</i></u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> 2 - Dominance Test is >50%	
3. <u><i>Trifolium sp</i></u>	<u>15</u>	<u>N</u>	<u>FAC-FACW</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover					
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b>	
1. _____	_____	_____	_____	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____		
_____ = Total Cover					
<b>% Bare Ground in Herb Stratum _____</b>					

Remarks: other grasses difficult to I.D. due to earliness of season. Clover possibly pratense or repens. Dominance of wetland veg likely due to historical irrigation applications. Maybe *Parandmaria A. pratensis*

SOIL

Sampling Point A-14up1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>		
0-12	10YR2/2	95	5YR4/6	5	C	m	Sandy Clay loam	
12-18	10YR3/2	95	5YR4/6	5	C	m	Silty Clay loam	

Type C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Depleted Dark Surface (F7)	
	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):  
 Type \_\_\_\_\_  
 Depth (inches) \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: Presence of Hydric Soil indicators due to historical irrigation practices.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>X</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>X</u>	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>X</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) if available:

Remarks: Soils dry without irrigation.

**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site 475 Winzlerd - Lost Miner City/County: Gunnison Sampling Date: 4/18/24  
 Applicant/Owner: John Mortell State: CO Sampling Point: B-22 wet  
 Investigator(s): T. Lapelle, L. Cudlip Section Township Range: Sec 11 T49N R1E  
 Landform (hill/slope terrace etc): terrace Local relief (concave convex none): concave Slope (%): 1-2  
 Subregion (LRP): LRRF Lat: 38.524666 Long: -106.834674 Datum: NAD83  
 Soil Map Unit Name: I-B NW classification: PEMIC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are 'Normal Circumstances' present? Yes  No   
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: abandoned meander channel - vegetated & w/ sfc connection Tomichi Cr. Swale located in irrigated Hay meadow. Irrigation not active as of day of investigation

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____				Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
				OBL species _____	x 1 = _____
				FACW species _____	x 2 = _____
				FAC species _____	x 3 = _____
				FACU species _____	x 4 = _____
				UPL species _____	x 5 = _____
				Column Totals:	(A) _____ (B) _____
				Prevalence Index = B/A = _____	
				Hydrophytic Vegetation Indicators:	
				<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
				<input type="checkbox"/> 2 - Dominance Test is >50%	
				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>	
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				Remarks: <u>Barroetia maritima</u>	

SOIL

Sampling Point B-22 wet <sup>N. prairie</sup>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>		
0-14	10YR2/2	90	5YR4/6	10	C	M	silty cl loam	
14-19	10YR2/1	100	—	—	—	—	sandy clay loam	

Type C=Concentration D=Depletion RM=Reduced Matrix CS=Covered or Coated Sand Grains <sup>2</sup>Location PL=Pore Lining M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):  
 Type \_\_\_\_\_  
 Depth (inches) \_\_\_\_\_

Hydric Soil Present? Yes  No \_\_\_\_\_

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required, check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>sfc</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		

Remarks: sfc connection from this abandoned, vegetated meander channel to Tomichi, OK saturated ground surface without onset of irrigation application.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site 475 Winzer Rd - Lostminer City/County Garrison Sampling Date 4/18/24  
 Applicant/Owner John Martell State CO Sampling Point B-22<sup>USWA</sup> up  
 Investigator(s): T. Lapella, K. Coolip Section Township Range Sec 11 T49N R1E  
 Landform (hillslope terrace etc.) terrace Local relief (concave convex none) convex Slope (%) 1-2  
 Subregion (LRP) LRRE Lat \_\_\_\_\_ Long \_\_\_\_\_ Datum NAD83  
 Soil Mac Unit Name \_\_\_\_\_ NW classification \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks)  
 Are Vegetation \_\_\_\_\_ Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_ Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		

Remarks: Frigated Hay meadow to north of swale. Gravel surface is elevated above swale. Wetland plants + soils likely due to irrigation influence. Irrigation not on.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum</b> (Plot size: _____)	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
<b>Herb Stratum</b> (Plot size: <u>1m</u> )	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u><i>Alium pratense</i></u>	<u>65</u>	<u>Y</u>	<u>FAC</u>	
2. <u><i>Carex utriculata</i></u>	<u>15</u>	<u>N</u>	<u>OBL</u>	
3. <u><i>Taraxacum officinale</i></u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u><i>Taraxacum</i></u>	<u>10</u>	<u>N</u>	<u>FAC-PACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: _____)	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>100</u> = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks: other pasture grasses present but not identifiable due to earliness of season. Dominance of wetland veg likely due to irrigation influence.

**SOIL**

Sampling Point B-22up<sup>n</sup>.swale

**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12	10YR2/2	95	5YR4/6	5	C	M	slty clay loam	
12-18	10YR3/2	95	5YR4/6	5	C	M	silty clay loam	

Type C=Concentration, D=Depleted, RM=Reduced Matrix, CS=Covered or Coated Sand Grains      <sup>1</sup>Location: PL=Core Lining, M=Matrix

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histic Epipedon (A2);	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>2</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Depleted Dark Surface (F7)	
	<input type="checkbox"/> Redox Depressions (F8)	

**Restrictive Layer (if present):**  
 Type \_\_\_\_\_  
 Depth (inches) \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: *hydric soil indicators from irrigation.*

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) if available:

Remarks: *Irrigated upland - ditches provides water, soils dry without active irrigation.*

# OWTS Site Inspection

Permit #: 24-00184

Date: 9-3-2024

Owner: **John Mortell**

Installer: JCI Excavation and Construction

Site Address: 475 Winze Road

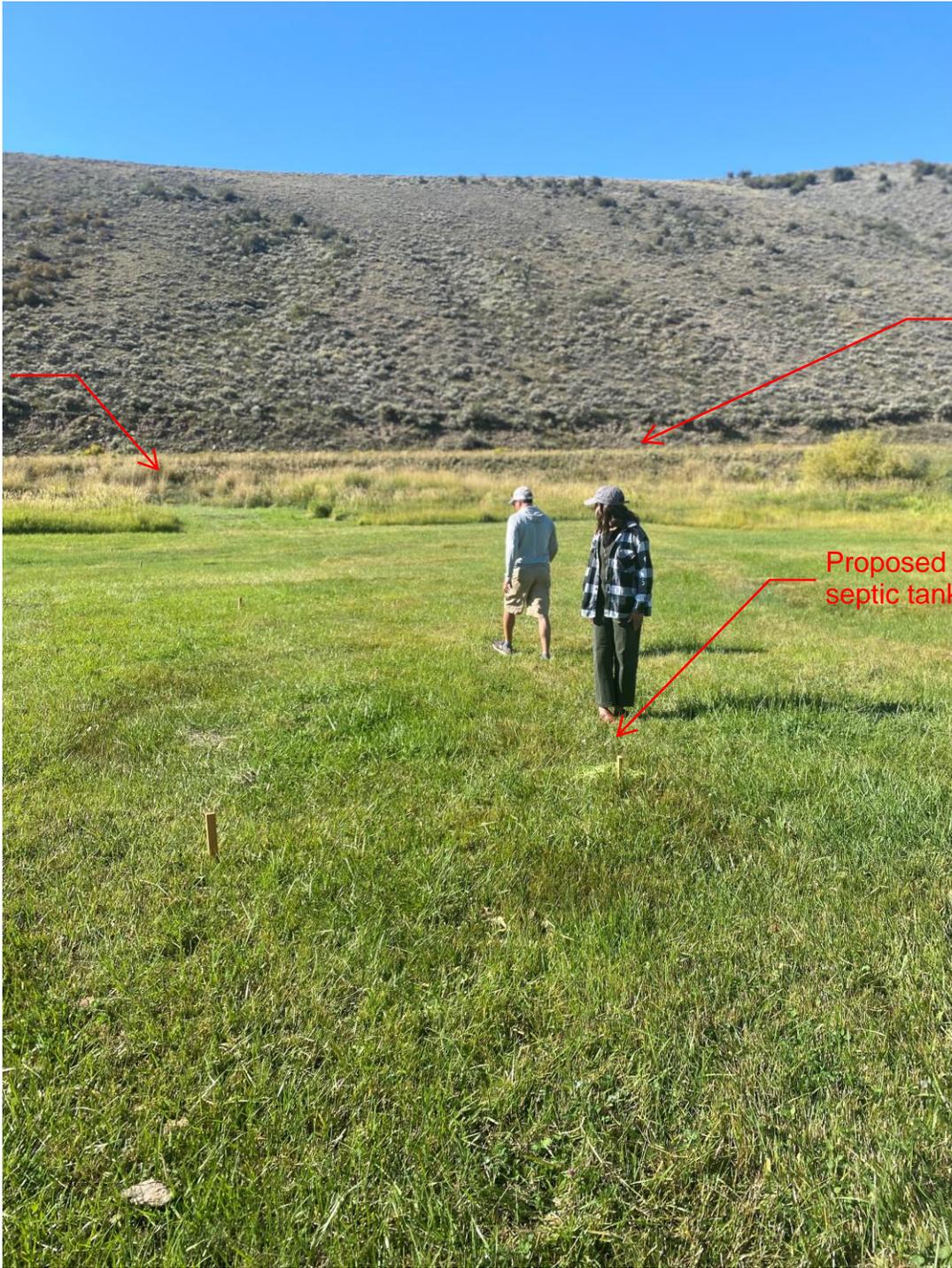
Legal Description of Parcel: Lot 15 Lost Miner Subdivision

Yes Lot corners staked and labeled, or defined if parcel is large  
Yes Location of proposed structure staked and labeled  
Yes Proposed system components staked and labeled (tank, STA, etc.)  
Yes Well and/or other potable water sources staked and labeled  
Yes Other pertinent physical features staked and labeled  
Yes Site conditions concur with the findings of the Site and Soil  
Evaluation  
\_\_\_\_ Site adequate as are required by LUR & OWTS Regs  
In 100yr Flood hazards (check for floodplain if not mapped)  
OK Ground slope in excess of twenty percent requires  
engineer  
Yes-STA at elevated site Probability of high groundwater or  
shallow bedrock in area  
OK Geologic hazards (avalanche, rockfall, soil creep,  
etc.)  
Ditch will be lined and variance needed Water quality--  
check for setbacks to water bodies including  
wetlands, ponds, irrigation ditches, gulches, etc.  
OK Check for visibility on ridgelines from County Roads  
RES Proposed use of site verified-Residential, Commercial, Agricultural,  
etc.  
Yes Other water sources verified-walking the site within 200' of the  
proposed system  
Yes Pertinent physical and environmental features verified

## Additional Comments:

Variance needed for proposed location of septic tank in proximity to wetland boundary ~60feet. Verify proposed well location once installed. 100yr fp will require elevated control for pump and backflow prevention.

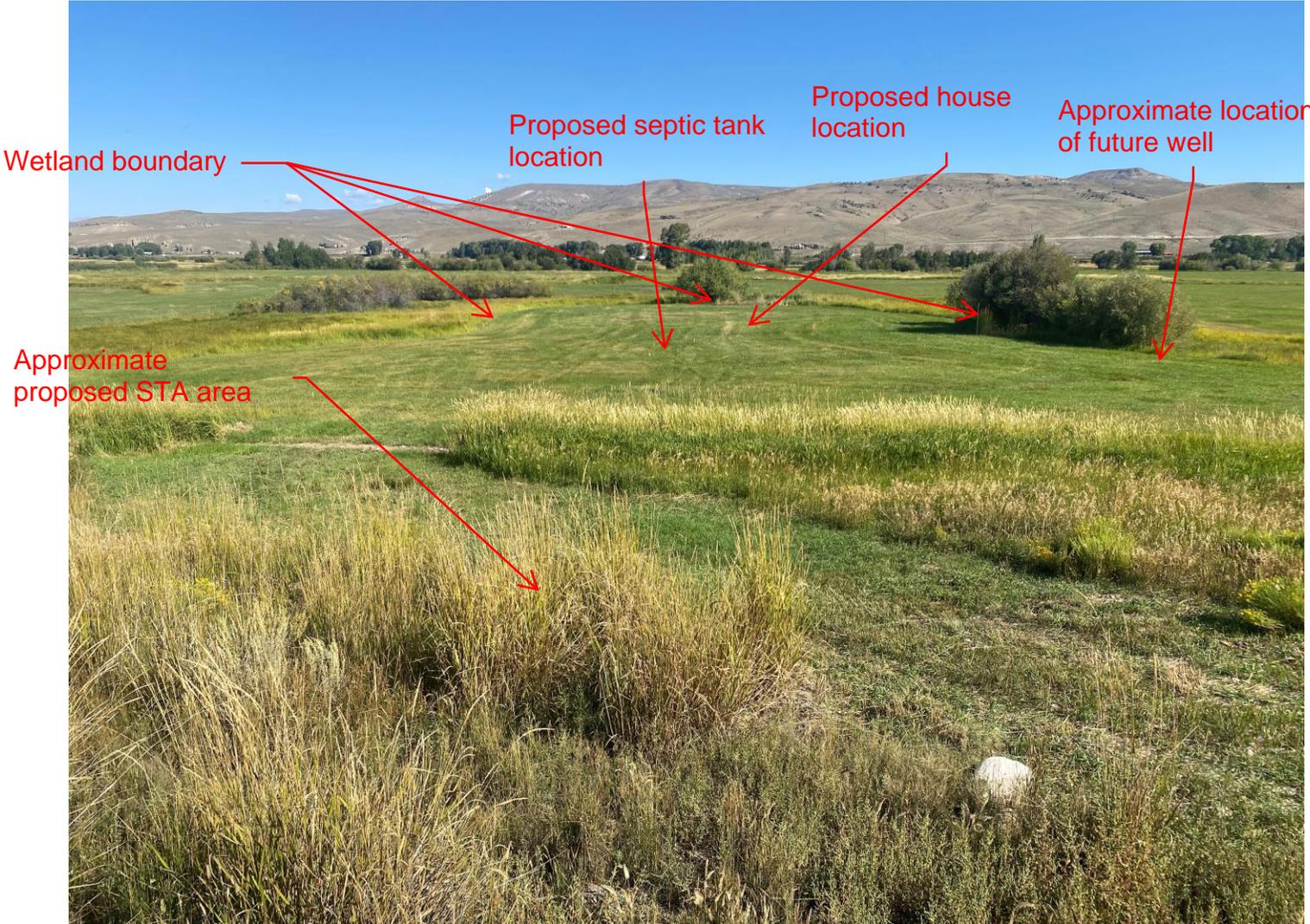
Approximate  
proposed location  
of STA



Winze Road

Proposed location of  
septic tank

**Standing at building site and facing South**



**Standing near road and facing North looking out at the property**



Irrigation ditch that will be lined within 100 feet of STA

## **DRAFT ENVIRONMENTAL HEALTH BOARD VARIANCE REQUEST ACTION**

**APPLICANT:** John Mortell

**DATE:** November 18, 2024

**SITE LOCATION:** 475 Winze Road, Lot 15 Lost Miner Subdivision

**ACTION:** Request for a variance to the Gunnison County OWTS Regulations for a reduced setback distance to Wetlands

**PREPARED BY:** Crystal Lambert, Building and Environmental Health Official

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### **PROPOSED PROJECT:**

The applicant is requesting a variance to the Gunnison County OWTS Regulations for a reduced setback distance from a septic tank to a wetland boundary.

### **GUNNISON COUNTY ENVIRONMENTAL HEALTH OFFICE ACTION:**

The application and proposed design plans have been reviewed by the Environmental Health Office for compliance with the Gunnison County OWTS Regulations. The proposed distance between the septic tank and the nearest wetland boundary is approximately 60 feet. The Gunnison County OWTS Regulations require 100 feet between septic tanks and water bodies, including wetlands.

The OWTS application was denied by the Environmental Health Office because *Section 7.D and Table 7-1* of the *Gunnison County OWTS Regulations* require at least 100 feet between septic tanks and wetland boundaries.

### **APPLICANT'S REQUEST FOR A VARIANCE:**

A request for a Public Hearing with the Environmental Health Board for the consideration of a variance to *Section 7.D and Table 7-1* of the *Gunnison County OWTS Regulations* has been received.

### **PUBLIC HEARING:**

On November 18, 2024, the Gunnison County Environmental Health Board conducted a Public Hearing on this request for a variance.

### **FINDINGS:**

Based on a review of all the information included with the OWTS application, the proposed design plan layout, the request for a variance, and staff report for this project and consideration of any and all testimony and public input received relative to this application, the Gunnison County Environmental Health Board finds that:

1. Action on this request for a variance from the *Gunnison County OWTS Regulations* is property-specific and limited to the circumstances unique to this application.
2. The applicant has demonstrated that the requested variance from the *Gunnison County OWTS Regulations* is warranted by unique and existing site-specific configuration with the presence of wetlands that makes strict compliance with the regulations technically infeasible.
3. The applicant has demonstrated that approval of the requested variance will not be in violation of any minimum standards established in any other applicable federal or state rule or regulation.
4. The applicant has demonstrated that the proposed OWTS will not be a nuisance or injurious to public health, safety or welfare.
5. The applicant has demonstrated that no substantial injury will result from the granting of the requested variance.
6. This review and decision incorporates, but is not limited to, all the documentation submitted to the County and included within the Department file relative to this application; including all exhibits, references and documents.

**DECISION:**

The Gunnison County Environmental Health Board, having reviewed the proposed application and supporting documentation, site observations and public testimony does approve the requested variance to Section 7.D and Table 7-1 of the *Gunnison County OWTS Regulations* for John Mortell at his parcel, 475 Winze Road, Lot 15 Lost Miner Ranch Subdivision, under OWTS application 24-00184, with the following conditions:

1. The OWTS shall be designed and installed in accordance with the *Gunnison County OWTS Regulations* and the *Gunnison County Land Use Resolution*, including but not limited to setback requirements, design standards, requirements for system components and general technical standards.
2. This approval is founded on each individual requirement. Should the applicant successfully challenge any such finding or requirement, this approval is null and void.
3. This permit may be revoked or suspended if Gunnison County determines that any material fact set forth herein or represented by the applicant was false or misleading, or that the applicant failed to disclose facts necessary to make any such fact not misleading.

4. Approval of this use is based upon the facts presented and implies no approval of similar use in the same or different location and/or with different impacts on the environment and community. Any such future application shall be reviewed and evaluated, subject to its compliance with current regulations, and its impact to the County.

DRAFT