



Gunnison County, CO  
Community Development Office  
221 N. Wisconsin St. Ste. D, Gunnison, CO 81230  
Phone: (970) 641-0360 FAX: (970) 641-8585  
Website: [www.gunnisoncounty.org](http://www.gunnisoncounty.org)  
Email: [rricord@gunnisoncounty.org](mailto:rricord@gunnisoncounty.org)

**To:** Environmental Health Board Committee Members

**From:** Shannon Frias, Administrative Assistant III

**Date:** November 12, 2021

**Included in your packet for the Wildlife Conservation Strategic  
Committee Meeting:**

November 18, 2021 Agenda

Draft of September 9, 2021 Minutes

Graf Public Hearing Packet OWTS-21-00208

# Gunnison County Environmental Health Board Agenda

November 18, 2021

Planning Commission Meeting Room, Blackstock Government Center OR  
Zoom meeting (see Teleconference Information below)

- 1:15 p.m.** Call to order; determine quorum  
Approval of Minutes from 9-9-2021 meeting  
Unscheduled citizens
- 1:30 p.m.** William and Cynthia Graf, Public Hearing for a variance to the Gunnison County OWTS Regulations for reduced setbacks to a wetland boundary at 21 Glacier Lily Way, Lot 21 Glacier Lily Estates, OWTS-21-00208

## Adjourn

Join Zoom Meeting

<https://us06web.zoom.us/j/86828988757?pwd=bmVPenp4MTNiZkNMbm9SVVBLdVhrcz09>

Meeting ID: 868 2898 8757

Passcode: 003612

One tap mobile

+17207072699,,86828988757#,,,,\*003612# US (Denver)

+13462487799,,86828988757#,,,,\*003612# US (Houston)

Dial by your location

+1 720 707 2699 US (Denver)

+1 346 248 7799 US (Houston)

+1 253 215 8782 US (Tacoma)

+1 646 558 8656 US (New York)

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

Meeting ID: 868 2898 8757

Passcode: 003612

Find your local number: <https://us06web.zoom.us/u/kbqPtSPWMI>

**ADA ACCOMMODATIONS:** Anyone needing special 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 Agenda  
September 9, 2021  
Planning Commission Meeting Room, Blackstock Government Center OR  
Zoom meeting (see Teleconference Information below)**

**1:15 p.m.** Call to order; determine quorum  
Approval of Minutes from 8-12-2021 meeting  
Unscheduled citizens

**1:30 p.m.** Douglas Hayes, Public Hearing for an OWTS on a parcel less than one acre at 60 Miners Camp Road, Lot 89 Marble Ski Area Filing No. 3, OWTS-21-00034

**Adjourn**

Join Zoom Meeting

<https://us06web.zoom.us/j/84039389616?pwd=OW1XT0N5b05MUm53WkZLQ1dScWJtQT09>

Meeting ID: 840 3938 9616

Passcode: 638380

One tap mobile

+17207072699,,84039389616#,,,,\*638380# US (Denver)

+12532158782,,84039389616#,,,,\*638380# US (Tacoma)

Dial by your location

+1 720 707 2699 US (Denver)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

+1 646 558 8656 US (New York)

Meeting ID: 840 3938 9616

Passcode: 638380

Find your local number: <https://us06web.zoom.us/j/84039389616?pwd=OW1XT0N5b05MUm53WkZLQ1dScWJtQT09>

**ADA ACCOMMODATIONS:** Anyone needing special 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  
September 9, 2021**

The September 9, 2021 Gunnison County Environmental Health Board meeting was conducted in the Gunnison County Blackstock Government Center, 2<sup>nd</sup> floor meeting room, located at 221 N. Wisconsin #D, Gunnison, CO, 81230 and by Zoom virtual online meeting, Gunnison, CO, 81230

**Present Were:**

Lucinda Lull, EH Board Member  
Bill Barvitski, EH Board Member  
Lynn Cudlip, EH Board Member, Alternate

**Staff Present:**

Crystal Lambert, Building and EH Official  
Charlie Dominguez, Building and EH Inspector  
Rebecca Ricord, Plans Examiner  
Shannon Frias, Administrative Assistant III

Other attendees as listed in text.

**Call to order:** A quorum was determined by Lull at 1:20 pm.

\*\*\*\*

**Approval of Agenda:** Agenda amended.

\*\*\*\*

**Approval of Minutes:** **Moved by:** Barvitski, **seconded by** Lull to approve the August 12, 2021 meeting minutes as amended. The motion passed unanimously with Board members Barvitski and Lull voting yes. Cudlip abstained.

\*\*\*\*

**Unscheduled citizens:** None.

\*\*\*\*

**Douglas Hayes, OWTS-21-00034:** The Gunnison County Environmental Health Board conducted a Public Hearing. Request to install an OWTS on a parcel less than one acre at 60 Miners Camp Road, Lot 89 Marble Ski Area Filing No. 3

The members introduced themselves.

**Voting members:** Board members Lull was seated as the chair. Barvitski and Cudlip.

Lull confirmed a quorum and opened the public hearing.

Environmental Health Official Crystal Lambert confirmed adequate public notice. The notice was published in the Crested Butte News and Gunnison Country Times. It was posted at the new posting location on the Gunnison County Community Development website. The applicant submitted the certified mailing receipts, photo and affidavit of posting on the parcel. Lambert verified that the sign was posted on a tree at the end of the driveway on Miners Camp Road and is visible from County Road 3.

Carla Ostberg, representing applicant, was present by Zoom. Douglas Hayes, applicant, was present by Zoom.

Audience members presented in text.

**Application Presentation:**

Hayes stated that he acquired the property in 2015. There is an existing driveway that goes across a neighboring parcel. There is an easement across Lot 91. There is an existing driveway that goes up to a flat building site on the property. He has been trying to figure out how to build a little cabin. He is proposing to build a 1000-1200 sq. ft. structure. It will be two bedrooms and one bath. The building footprint would be 36 X 22. He did the geologic hazard assessment and it was approved by the State. They indicated it is on a landslide slope and that there wasn't any danger of rockfall or avalanche but there is a possibility of a slow landslide creep over a certain amount of years and recommended mitigation actions to take. He has already received the well permit. He proposed a turn around at the top of the driveway for the access permit. It has been approved by the Carbondale Fire Chief.

Ostberg stated the soils are very rocky and that it is a typical system for the types of soils and it keeps the system as small as possible.

Cudlip asked about the landslide creep and asked how the design will allow the system to work well when there is a creep of ¼" to an inch per year and whether the design will withstand the pressure. Ostberg stated she will consult with Kumar on it. They dug a four to five foot deep hole and filled it in with the recommended fill from the regulations but will talk to Kumar about it.

**Staff Comments:**

Lambert stated that any time they are in a geohazard area they ask the engineer to provide a statement that they read the report and considered it in the design and to the extent that they could they recommended the mitigation standards. That could be a condition of approval if the Board would like. The department will also require it for building plans.

Lambert stated the plans appear to meet the requirements of the Gunnison County regulations as far as setbacks to waterbodies, wells, physical features, neighboring wells. There are two vacant parcels surrounding the parcels that have not been built yet. Looking at the proposed design it does not prohibit sites for the neighbors to build in the future. The technical design aspects of the septic regulations have been met with the proposed design. There are rocky soils and the engineer has designed the online sand filter system that will be pressurized distribution to the soil treatment area and three feet of a secondary sand media will be brought in.

Dominguez reported he observed the site on May 19, 2021. Everything was staked and labeled on the site; well, tank and field. He physically measured it and all setbacks were met. The soils seemed consistent with the report. Everything looked good.

Lambert stated that the variance request submittal has been received and all of the required items for a variance request submittal have been verified. There is nothing in the variance section that would prohibit the approval of the request for a variance. The system meets all of the requirements with the exception of the one acre minimum.

Barvitski asked if it is a truly platted subdivision and if it was platted before the OWTS regulations. Crystal said that is correct.

**Review Body Comments:**

Barvitski asked if during the original plat of the property if it was re-plated as a residential site after the fact or originally. Lambert stated there is nothing in the legal description, typical of the Marble Ski Area filings.

Lull stated that they have seen more than one Marble Ski Area variance come in front of them over the years and they have all had the same issues.

Lull stated that the letter from the Joe Carlson MGM geologist, dated April 2, 2021 stated that it is not possible to determine the probability or predict the magnitude of any future landslide activity and stabilization of the landslide complex impractical. Lambert stated that it is a common response they would see from a geologist Lambert stated that it goes onto state that if there is a wildfire in the area, property owners will need to start being cautious and look at mitigation measures for run off.

Ostberg stated that she believes the creep is more towards the surface and the septic is several feet below grade, at least a foot below.

Lambert asked Dominguez if he saw any ground movement, pistol butted trees. Dominguez stated he didn't.

**Public Comments and Responses:**

Hayes stated that he talked to a structural engineer about mitigation measures for building. The engineer described a reinforced slab so that everything moves together.

Lull went over the public comments from Fenton and Raymond that were received by mail and email.

**Moved by:** Cudlip, **seconded by** Barvitski to close the public hearing. The motion passed unanimously, with Board members Lull, Barvitski, and Cudlip voting yes.

**EH Determination of Application:**

**Moved by:** Barvitski, **seconded by** Cudlip to approve the application for Douglas Hayes (OWTS-21-00034) before the Gunnison County Environmental Health Board. The motion passed unanimously, with Board members Lull, Barvitski, and Cudlip voting yes.

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

**APPLICANT:** Douglas Hayes

**DATE:** September 9, 2021

**SITE LOCATION:** 60 Miners Camp Road; Lot 89 Marble Ski Area Sub, Filing 3

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

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

---

**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's system designer, Carla Ostberg of CBO, Inc.

**PUBLIC HEARING:**

On September 9, 2021, 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 Douglas Hayes at his parcel, 60 Miners Camp Road, Lot 89, Marble Ski Area Filing 3, under OWTS application 21-00034, 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.

\*\*\*\*

**Adjourn:** Lull closed the meeting of the Environmental Health Board at 2:05 P.M.

\*\*\*\*

/S/ Rebecca Ricord  
Plans Examiner  
Gunnison County Community Development Department



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

**Graf**

Application No: OWTS-21-00208  
Date application scheduled with EH Board: November 18, 2021  
Prepared by: Crystal Lambert, Building & EH Official

<b>APPLICANT/OWNER:</b>	William and Cynthia Graf
<b>PROJECT DESCRIPTION:</b>	The applicant is proposing a variance for reduced horizontal setback distances from an OWTS 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 soil treatment area and a wetlands boundary. The proposed minimum distance between the soil treatment areas and the wetlands boundary appears to be less than 75 feet.
<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 3.A.9</i> of the <i>Gunnison County OWTS Regulations</i> has been received.
<b>PROPERTY LOCATION:</b>	21 Glacier Lily Way, Lot 21 Glacier Lily Estates Subdivision
<b>AREA DESCRIPTION:</b>	The parcel is 1.1 acres within the Glacier Lily Estates Subdivision located between the Towns of Crested Butte and Mount Crested Butte on the Gothic Corridor.
<b>ATTACHED EXHIBITS:</b>	<ul style="list-style-type: none"><li>▪ OWTS application</li><li>▪ Aerial view of parcel and surrounding parcels</li></ul>

	<ul style="list-style-type: none"> <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 the installation of an OWTS to be installed within the required 100foot horizontal setback requirement to wetlands while still maintaining the State of Colorado’s minimum setback requirement of 50 feet.	<i>Section 7.D and Table 7-1 of the Gunnison County OWTS Regulations, require that soil treatment areas and unlined sand filters be at least 100 feet from a wetland boundary. This is a County requirement that is more stringent than the State of Colorado’s minimum setback requirement of 50 feet. At adoption, the Board agreed that a higher</i>

		level of water quality protection was important for Gunnison County.
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)	Meeting the State of Colorado's minimum setback distances ensures no greater risk. (summarized-see report for complete response)	If needed to support a finding that the reduced setback distances to wetlands will result in no greater risk, an operation inspection and maintenance requirement that ensures the system is maintained and operates properly in the future could be part of a Board approval.
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 platted lot, 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.	This parcel is an unusual shape. There are wetlands on and around the parcel and high groundwater is also present. The proposed development design 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 appear to 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*:**

It appears that the proposed development plan and OWTS design 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 closest proposed setback distance to the wetland boundary is just under 75 feet and does not meet the County requirement for 100 feet, however, the State minimum of 50 feet is met. Staff recommends approval of the Graf application for a variance to the Gunnison County OWTS Regulations, Section 7.D. and Table 7-1, for the proposed design.



Glacier Lily Way

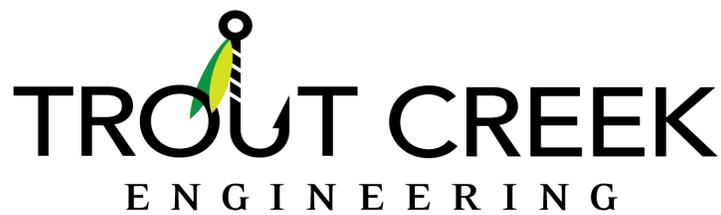
21

20

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.

Tuesday, November 9, 2021

Scale = 1:650



# TROUT CREEK

## ENGINEERING

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

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

***For:*** Graf Residence  
Lot 21 Glacier Lilly Way  
Gunnison County, Colorado

***Prepared By:*** Trout Creek Engineering L.L.C.  
124 E. Virginia Ave  
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 new 3-bedroom residence. A site visit and profile holes were not completed by Trout Creek Engineering, however a completed soils report was provided by Cesare, Project No 18.5034 dated May 23, 2018 which identifies the O.W.T.S. Soil type. The soils were found to be soil type 3A. Page 6 of the referenced Geotechnical Study. High ground water was found at a depth of 4'-0" in the excavated hole at the Soil Treatment Area Location. It is recommended due to the soil type to install an unlined sand filter for the proposed soil treatment area. 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 with the Environmental Health Board for a setback reduction to 50'-0" (State) between wetlands will be required to provide any OWTS for this legally divided property within Glacier Lilly.

#### ***II. Legal Description:***

Lot 21 Glacier Lilly Estates  
Parcel#: 317726301034  
Account#: R045176  
1.1 acre

### ***III. Design Calculations:***

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

- 3 bedrooms = 450 gal/day

***Total Design Flows:***

- ***450 gal/day***

➤ ***Septic Tank Size: Table 9-1***

- 1500 Gallon 2 compartment tank w/ Orenco PF 3005

➤ ***System Sizing:*** Soil Type 3A, Pressure Dosed Bed, Chambers

- **10.C.4** - Flow = 450 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 3A (TL3) L.T.A.R. = 0.55
  - **USE L.T.A.R. of 0.55 gal./sq.ft./ day**
- $450 / 0.55 = 818.18 \text{ ft}^2$  required
- 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
  - $818.18 \text{ ft}^2 \times 1.0 \text{ ft}^2 = 818.18 \text{ ft}^2$
- **43.10.D** – Table 10-3 MAY NOT BE USED – Design Criteria – Higher Treatment Level
  - $818.18 \text{ ft}^2$
- Number of Infiltrator Quick4 Standard chambers
  - $818.18 \text{ ft}^2 / 12 \text{ ft}^2 = 68.2$  (**Use 72 TOTAL**)
    - Alternating 2 bed system w/ 36 infiltrators in each
- Orenco PF3005 Effluent Pump & Distribution Lateral Calculations
  - Draw Down Per inch (1500T-1CP-HH)- second chamber
    - 10.35 gallons (per inch)
  - Pump Rate = 34.2 g.p.m.
  - 12" Draw Down = 124.2 gallons
  - Pump time @ 34.2 g.p.m. = 3.6 minutes
  - Average pump cycles per day:  $450 / 124.2 = 3.6$
  - See Attached Orifice calculation and pump curve
    - Orifice Size = 5/32"
    - Orifice Spacing = 1.5' (1'-6")
  - Distal Head Pressure = 5'-0"
  - See Attached Orenco Pump Chart

➤ ***Design:***

Install 72 total Infiltrator "Quick 4 Standard" chambers in an alternating 2 Bed Soil Treatment Area. Install a minimum of 3'-0" "Secondary" sand media under each entire bed with a minimum of 12" additional width of sand, around the perimeter at the top infiltrative surface. Each bed is a pressure dosed system with 4 laterals at 36 feet long plus caps. Install a 1500-gallon, 2 compartment septic tank (Valley Precast item# 1500T-2CP-HH) with an Orenco PF3005 effluent pump in the second chamber of the tank. Install an Orenco V6402 automatic distributing valve after the tank. (see construction drawings).

***IV. Construction Drawing Date:***

Attached is a drawing titled "Graf Residence - O.W.T.S." for the proposed new OWTS located within the Gunnison County Environmental Health District, dated August 24, 2021, which sets forth the details for construction of the system.

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

#672 Graf

## Parameters

Discharge Assembly Size	1.25	inches
Transport Length Before Valve	10	feet
Transport Pipe Class	40	
Transport Line Size	1.25	inches
Distributing Valve Model	6402	
Transport Length After Valve	20	feet
Transport Pipe Class	40	
Transport Pipe Size	2.00	inches
Max Elevation Lift	10	feet
Manifold Length	8.5	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.25	inches
Number of Laterals per Cell	4	
Lateral Length	36	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.25	inches
Orifice Size	5/32	inches
Orifice Spacing	1.5	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

## Calculations

Minimum Flow Rate per Orifice	0.68	gpm
Number of Orifices per Zone	50	
Total Flow Rate per Zone	34.2	gpm
Number of Laterals per Zone	2	
% Flow Differential 1st/Last Orifice	4.7	%
Transport Velocity Before Valve	7.4	fps
Transport Velocity After Valve	3.3	fps

## Frictional Head Losses

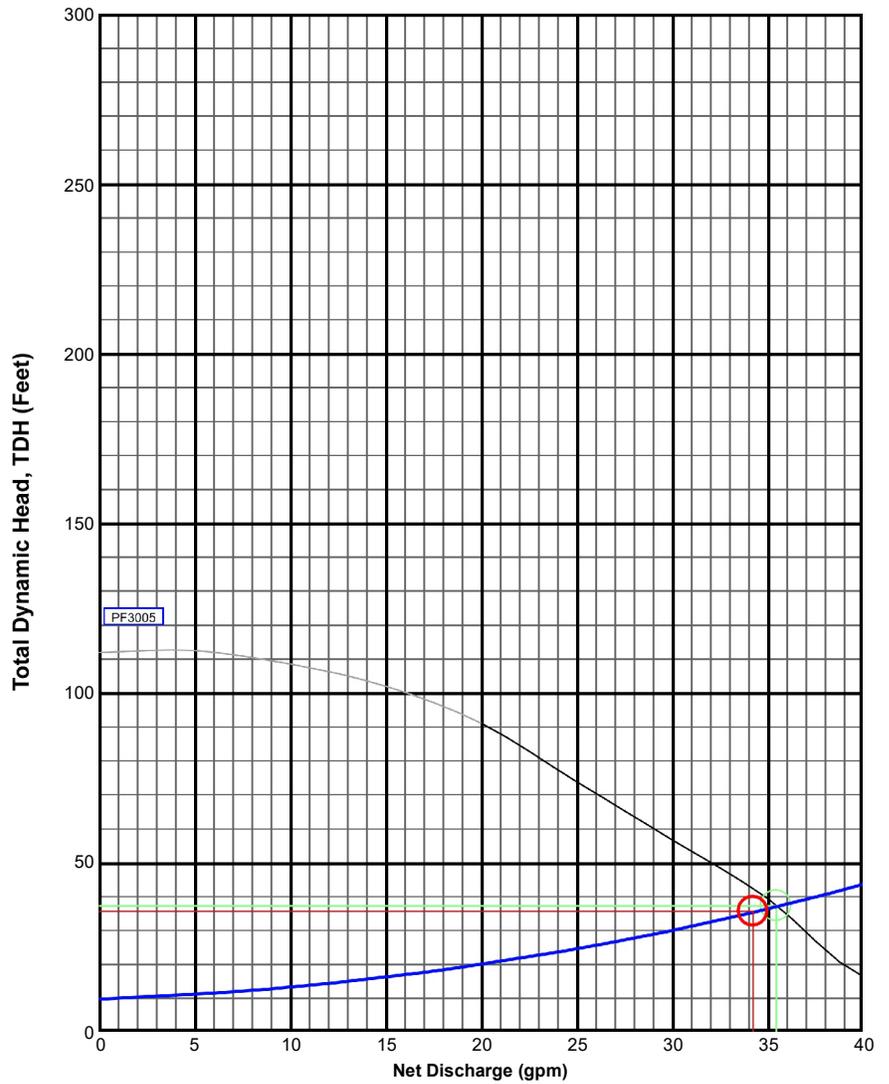
Loss through Discharge	8.2	feet
Loss in Transport Before Valve	1.4	feet
Loss through Valve	8.3	feet
Loss in Transport after Valve	0.4	feet
Loss in Manifold	0.3	feet
Loss in Laterals	0.5	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

## Pipe Volumes

Vol of Transport Line Before Valve	0.8	gals
Vol of Transport Line After Valve	3.5	gals
Vol of Manifold	0.7	gals
Vol of Laterals per Zone	5.6	gals
Total Vol Before Valve	0.8	gals
Total Vol After Valve	9.7	gals

## Minimum Pump Requirements

Design Flow Rate	34.2	gpm
Total Dynamic Head	34.2	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:	



# 1500 Gallon Top Seam - 2CP with High Head Pump

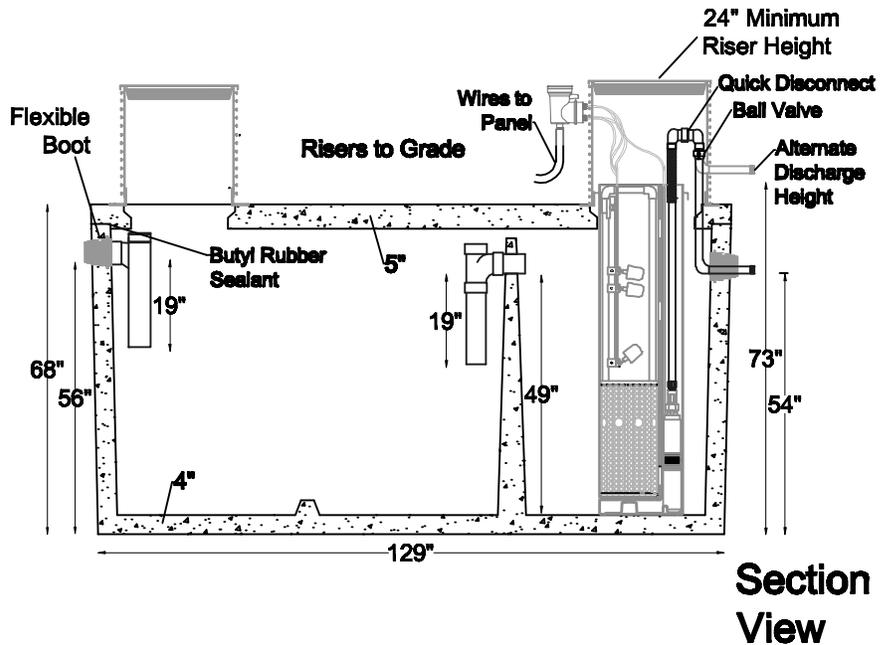
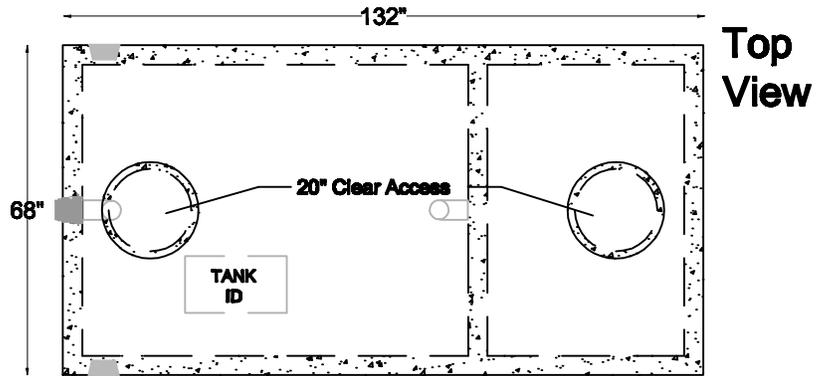
**Item #**  
**1500T-2CP-HH**

**DESIGN NOTES**

- Design per performance test per ASTM C1227
- Top surface area 62.33 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"	3' - 0"
2' - 0"	4' - 0"
3' - 0"	4' - 0"
DRY	4' - 0"

**\*Service contracts available for maintenance**

**Pump:**

- Lowers TSS and improves effluent quality to field
- Complete installation (wiring, panel, mounting and start-up procedures)
- Complete warranty

Digging Specs	Invert		Dimensions			Net Capacity			Net Weight		
	Inlet	Outlet	Length	Width	Min. Height	Inlet Side	Outlet	Total	Lid	Tank	Total
13' Long x 8' Wide											
56" below inlet	56"	54" or 73"	132"	68"	92"	1002 gal	507 gal	1509 gal	3600 lbs	11180 lbs	14980 lbs



**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:

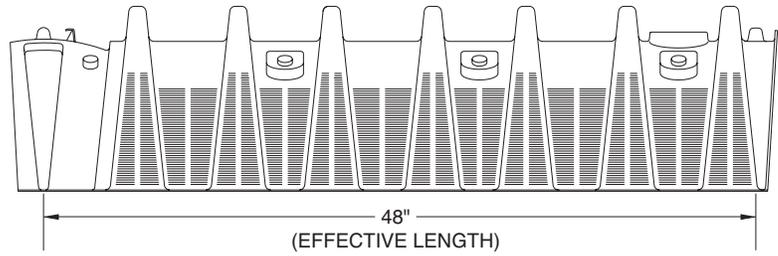
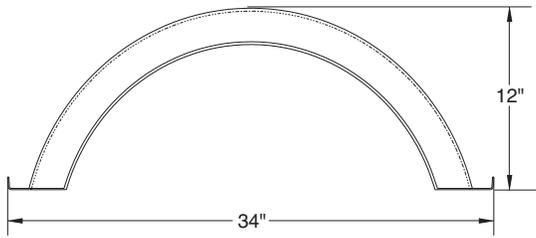
- Tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Eliminates pipe fittings
- Fits on either end of the Quick4 Standard Chamber

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

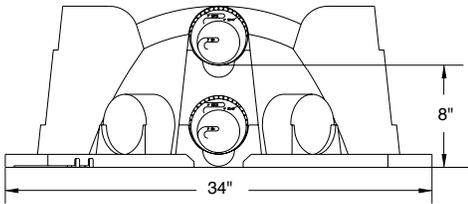
### Quick4® Series

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

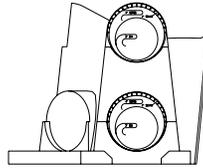
**Quick4 Standard Chamber**



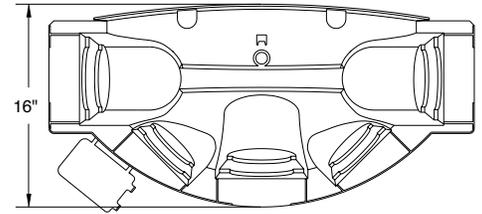
**MultiPort EndCap**



FRONT VIEW

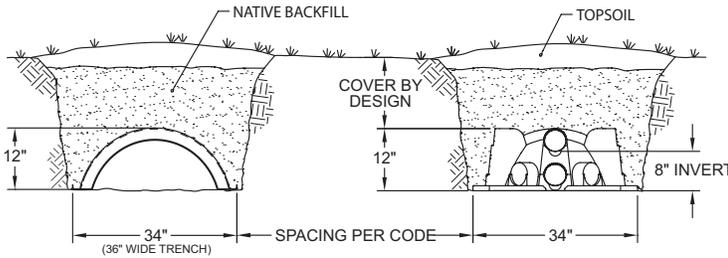


SIDE VIEW



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)



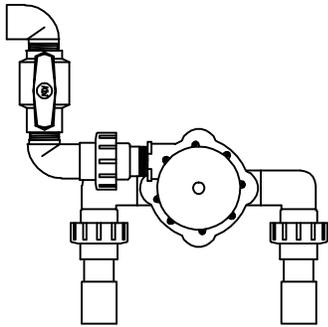
4 Business Park Road  
P.O. Box 768  
Old Saybrook, CT 06475  
860-577-7000 • Fax 860-577-7001  
**1-800-221-4436**  
[www.infiltratorsystems.com](http://www.infiltratorsystems.com)

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.

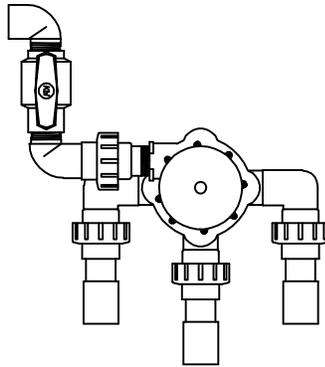
© 2013 Infiltrator Systems Inc. All rights reserved. Printed in U.S.A.

Q25 0813

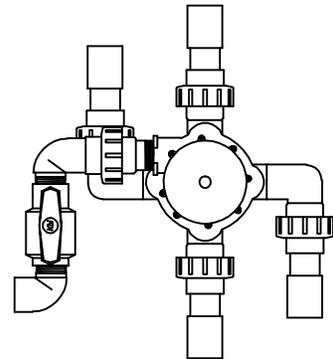
# Automatic Distributing Valves



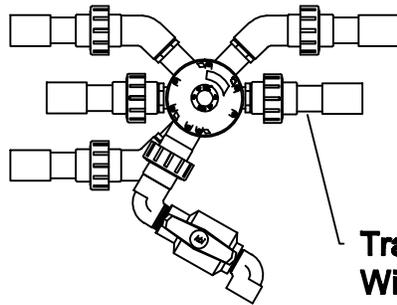
Top View-V6402



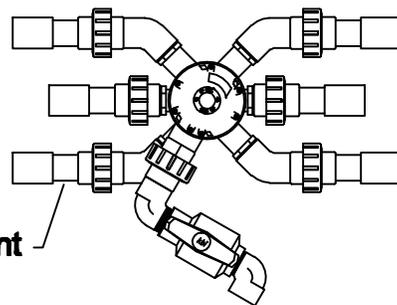
Top View-V6403



Top View-V6404



Top View-V6605



Top View-V6606

Transparent Window

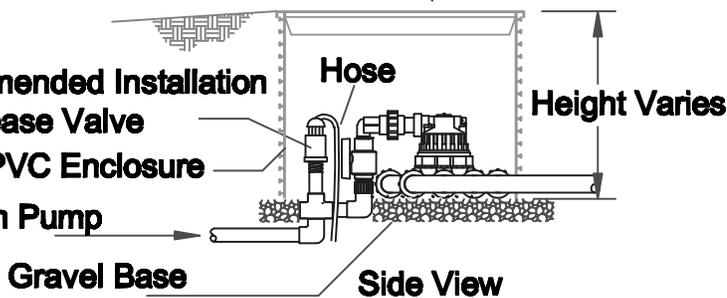
PVC Enclosure in 30" Diameter only  
Stainless Steel Bolts  
and Urethane Gasket

**6000 Series**

**1.5" inlet & outlet**

**15 - 100 gpm flowrate**

Recommended Installation  
Air Release Valve  
30" PVC Enclosure  
From Pump



Orenco Systems®  
Incorporated

**VALLEY  
PRECAST, Inc.**  
Buena Vista, Colorado

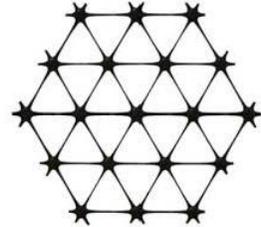
Phone: 719-395-6764  
Fax: 719-395-3727  
Website: [www.valleyprecast.com](http://www.valleyprecast.com)  
Email: [frontdesk@valleyprecast.com](mailto:frontdesk@valleyprecast.com)

# 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%

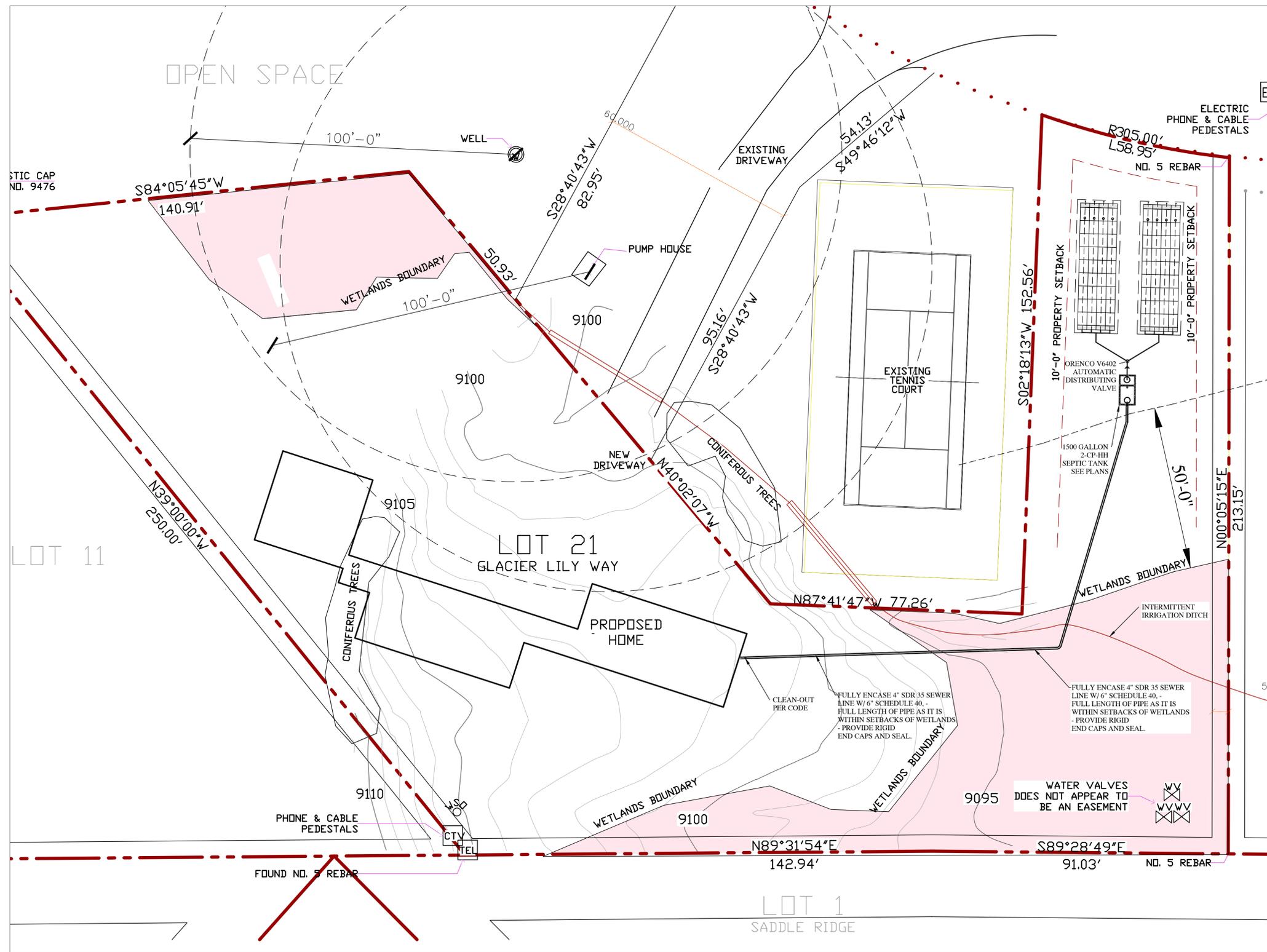
### NOTES:

- 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.

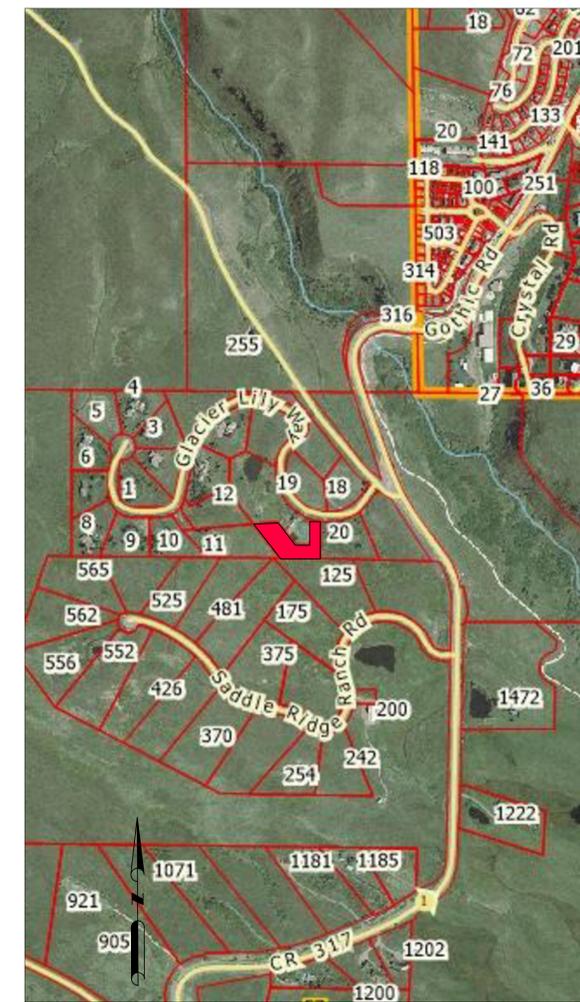
TX geogrid comes in a roll measuring 13.1 feet wide by 246 feet long. Valley Precast, Inc. will cut to the length needed per customer request.



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

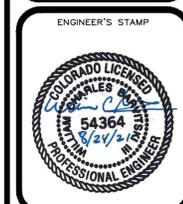


**1 SITE PLAN**  
SCALE: 1/16" = 1'-0"



**2 VICINITY MAP**  
SCALE: N.T.S.

ISSUED FOR PERMIT	



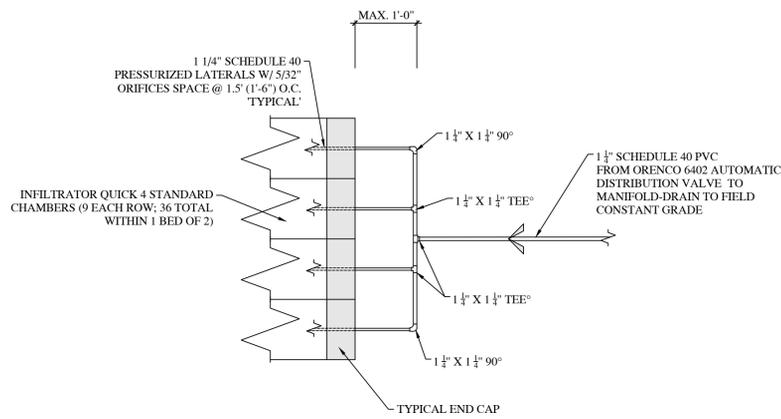
**TROUT CREEK**  
ENGINEERING

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

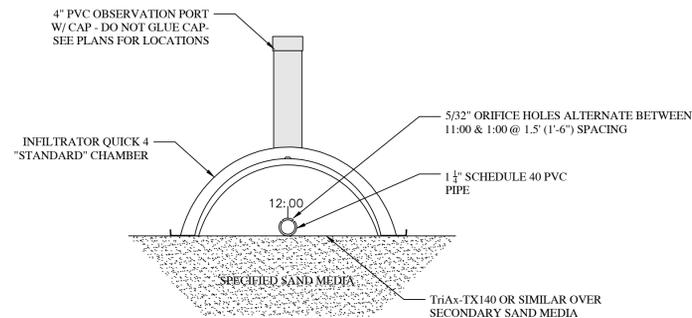
GRAF RESIDENCE - O.W.T.S.  
LOT 21 GLACIER LILLY  
GUNNISON COUNTY, CO.

MOST CURRENT DATE:	08/24/2021
JOB NO.:	672
SHEET:	C1

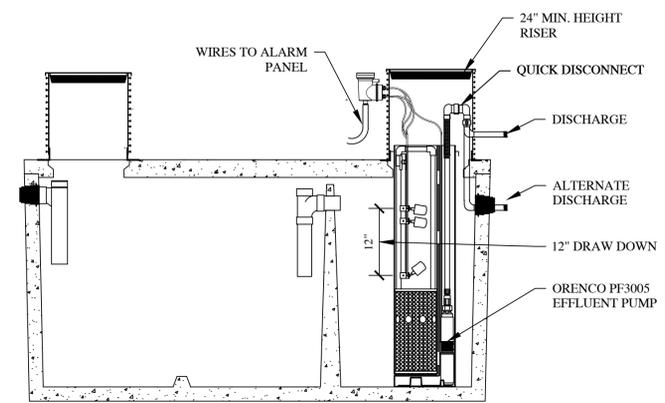




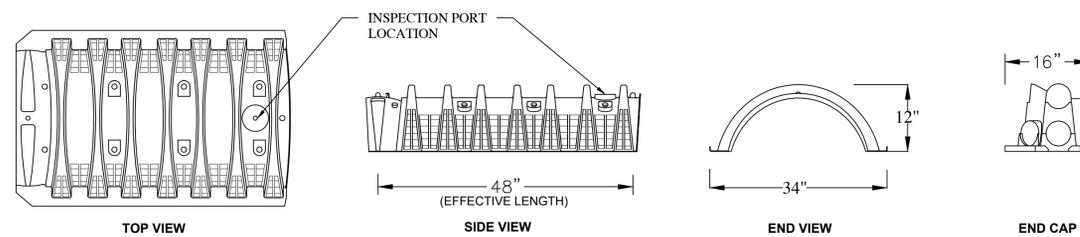
**1** MANIFOLD DETAIL  
1/4" = 1'-0"



**2** ORIFICE SIZE AND SPACING  
1" = 1'-0"



**3** SEPTIC TANK (1500T-2CP-HH)  
1/2" = 1'-0"



**4** INFILTRATOR QUICK4 STANDARD CHAMBERS  
3/4" = 1'-0"

ALLOWABLE BURY  
(Based on Water Table)

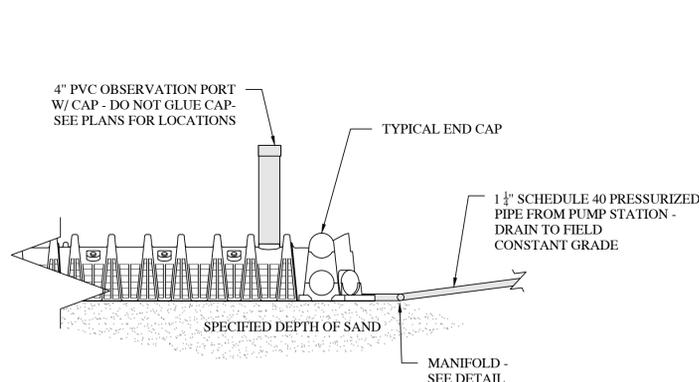
WATER TABLE	ALLOWABLE EARTH FILL
0' - 0"	3' - 0"
1' - 0"	3' - 0"
2' - 0"	4' - 0"
3' - 0"	4' - 0"
DRY	4' - 0"

Installation:

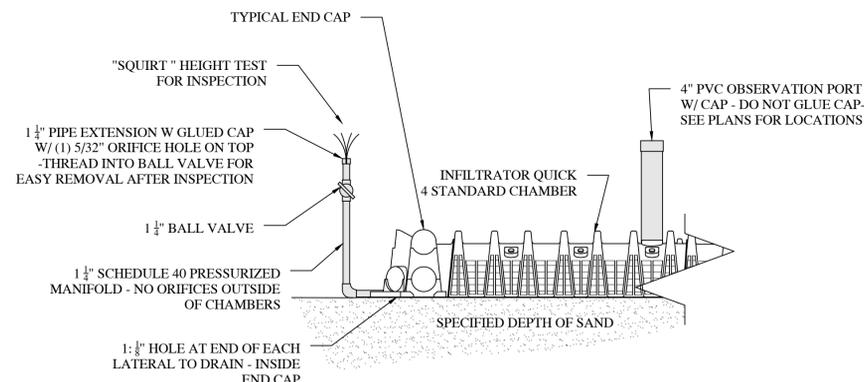
- Tank to be set on 5" min. sand bed or pea gravel
- Tank to be backfilled uniformly on all sides in lifts less than 24" and mechanically compacted
- Excavated material may be used for backfill, provided large stones are removed
- Excavation should be dewatered and tank filled with water prior to being 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

Digging Specs	Invert		Dimensions			Net Capacity			Net Weight		
	Inlet	Outlet	Length	Width	Min. Height	Inlet Side	Outlet	Total	Lid	Tank	Total
13' Long x 8' Wide						1002 gal	507 gal	1509 gal	3600 lbs	11180 lbs	14980 lbs
56" below inlet	56"	54" or 73"	132"	68"	92"						

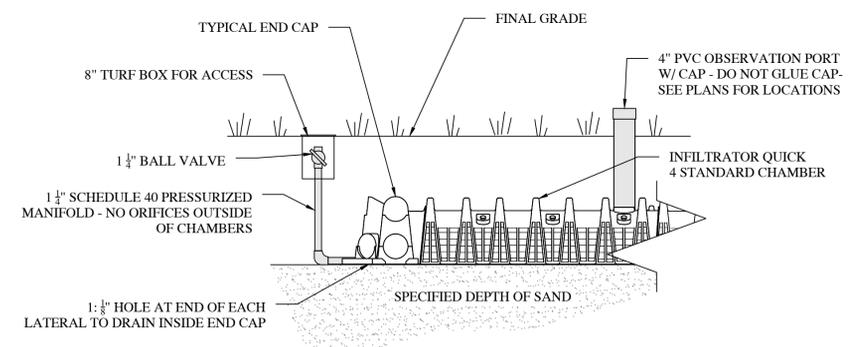
**5** SEPTIC TANK INFORMATION



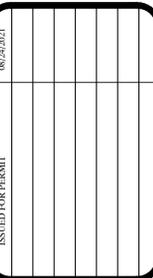
**6** BEGINNING OF SOIL TREATMENT AREA  
3/4" = 1'-0"



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



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



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

GRAF RESIDENCE - O.W.T.S.  
LOT 21 GLACIER LILLY  
GUNNISON COUNTY, CO.

MOST CURRENT DATE:  
08/24/2021  
JOB NO:  
672  
SHEET:



# TROUT CREEK

## ENGINEERING

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

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

***For:*** William & Cynthia Graf  
OWTS-21-00208  
Lot 21 Glacier Lilly Estates 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 an O.W.T.S. be installed within the required, Gunnison County Regulations, setback of 100' from a delineated wetland on the 1.1-acre parcel within the existing plated subdivision of Glacier Lilly Estates. The owner has proposed to construct a 3-bedroom residence if this O.W.T.S. variance is granted.

Gunnison County O.W.T.S. Regulations Section 7.D and Table 7-1 which requires at least 100 feet of horizontal separation distance between a soil treatment area and a 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. to be installed on platted lot with-in the required Gunnison County's 100' horizontal setback requirement while still maintaining the State of Colorado's minimum of 50' horizontal setback requirement.
2. It is in my professional opinion that the installation of an O.W.T.S. on the above referenced property will result in no greater risk than that associated with compliance with the requirements of the Gunnison County Regulations.

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 be as stringent as that regulation. Within this State Regulation #43 (Table 7-1) requires that a minimum of 50' horizontal distance be maintained. Gunnison County had elected to make this increased requirement within their O.W.T.S. Regulations. It is in my professional opinion that if this were a serious risk to public health and safety then the State of Colorado would have had this similar requirement within Regulation #43. It is in my professional opinion that if ALL horizontal setback distance requirements between components of the O.W.T.S. to the physical features as identified within the State of Colorado's Regulation #43 under Table 7-1 can be met, then there should be no greater risk to public health and safety. 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. The proposed design of the system is a pressurized "equally distributed" system over an unlined sand filter.

Due to the only possible location within the property that can meet the States minimum 50' horizontal setback, while still allowing the residences footprint to be outside that (different) County setback requirement, it will be required to have the sewer line cross a small section of a wetland. Within the Gunnison County OWTS regulation it does allow for this crossing as described under Table 7-1 "Note #2". It states the following:

*Note 2. 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 sufficient size to accommodate the pipe must be drilled to the lowest section of the rigid cap so that the conveyance pipe rests on the bottom of the encased 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.*

It should be noted to the Environmental Health Board that due to this “Utility Crossing” of a wetland, which is considered the “Waters of the United States” that a Nationwide Permit NWP #12 through the U.S. Army Corp of Engineers will be attained. This permit is for the construction, maintenance, repair and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than ½ acre of waters of the United States. Please see the attached “Nation Wide Permit Summary”. This is a straightforward permit effort that allows temporary impacts and follow up restoration related to the installation of utility lines. The distance and crossings of the proposed sewer line would be considered very minimal.

3. There are no other “alternative” options for this platted lot, due to the delineated wetlands which are within the property and surrounding areas. To maintain the Gunnison County required wetland setbacks for the development of the residence the proposed location of the O.W.T.S. is the only location which can meet ALL the Gunnison County horizontal setback requirements other than the wetland setback. Again the horizontal setback can meet the States Regulation 43 of 50’.
4. There is no technical documentation for a selected alternative as there are no alternatives.
5. There is no hardship that created the necessity for this variance.

Without this variance request being approved there is a potential that this legally divided lot could be considered as undevelopable due to these wetland locations.

Thank you



Bill Barvitski, P.E.

Trout Creek Engineering L.L.C.

970-642-4110

[bill@troutcreekengineering.com](mailto:bill@troutcreekengineering.com)



U S Army Corps of  
Engineers  
Sacramento District

# Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide Permits - March 19, 2007 includes corrections of May 8, 2007 and addition of regional conditions December 2007

**12. Utility Line Activities.** Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

**Utility lines:** This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquefied, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

**Utility line substations:** This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

**Foundations for overhead utility line towers, poles, and anchors:** This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

**Access roads:** This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in

non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

**Notification:** The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

**Note 1:** Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

**Note 2:** Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

**Note 3:** Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15)

## A. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

- 1. Navigation.**
  - (a) No activity may cause more than a minimal adverse effect on navigation.
  - (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
  - (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
- 2. Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
- 3 Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- 4. Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
- 5. Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.
- 6. Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
- 7. Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
- 8. Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
- 9. Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- 10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
- 11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
- 12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
- 13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
- 14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.
- 15. Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in

writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

**16. Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

**17. Endangered Species.**

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of

separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal “takes” of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

**18. Historic Properties.**

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause

effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**19. Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

**20 Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States

to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

**21. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

**22. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

**23. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**24. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

**25. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the

property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

-----  
(Transferee)

-----  
(Date)

**26. Compliance Certification.** Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

**27. Pre-Construction Notification.**

(a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty-five calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see

33 CFR 330.4(f) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWP 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);
- (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;
- (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
- (6) If any listed species or designated critical habitat might be affected or is in the vicinity

of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies'

concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

(a) **28. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

## **B. Regional Conditions:**

### **I. Sacramento District (All States, except Colorado)**

1. When pre-construction notification (PCN) is required, the prospective permittee shall notify the Sacramento District in accordance with General Condition 27 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a completed application form (ENG Form 4345). In addition, the PCN shall include:

a. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and size (in acreage) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the high tide line should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation; and

c. Pre-project color photographs of the project site taken from designated locations documented on the plan drawing.

2. The permittee shall complete compensatory mitigation required by special conditions of the NWP verification before or concurrent with construction of the authorized activity, except when specifically determined to be impracticable by the Sacramento District. When project mitigation involves use of a mitigation bank or in-lieu fee program, payment shall be made before commencing construction.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property against areas (1) designated to be preserved as part of mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where structures such as boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed in or adjacent to navigable waters (Section 10 and Section 404). The recordation shall also include a map showing the surveyed location of the authorized structure and any associated areas preserved to minimize or compensate for project impacts.

4. The permittee shall place wetlands, other aquatic areas, and any vegetative buffers preserved as part of mitigation for impacts into a separate "preserve" parcel prior to discharging dredged or fill material into waters of the United States, except where specifically determined to be impracticable by the Sacramento District. Permanent legal protection shall be established for all preserve parcels, following Sacramento District approval of the legal instrument.

5. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

6. For NWPs 29, 39, 40, 42, 43, 44, and 46, requests to waive the 300 linear foot limitation for intermittent or ephemeral waters of the U.S. shall include an evaluation of functions and services provided by the waterbody taking into account the watershed, measures to be implemented to avoid and minimize impacts, other measures to avoid and minimize that were found to be impracticable, and a mitigation plan for offsetting impacts.

7. Road crossings shall be designed to ensure fish passage, especially for anadromous fisheries. Permittees shall employ bridge designs that span the stream or river, utilize pier or pile supported structures, or involve large bottomless culverts with a natural streambed, where the substrate and streamflow conditions approximate existing channel conditions. Approach fills in waters of the United States below the ordinary high water mark are not authorized under the NWPs, except where avoidance has specifically been determined to be impracticable by the Sacramento District.

8. For NWP 12, clay blocks, bentonite, or other suitable material shall be used to seal the trench to prevent the utility line from draining waters of the United States, including wetlands.

9. For NWP 13, bank stabilization shall include the use of vegetation or other biotechnical design to the maximum extent practicable. Activities involving hard-armoring of the bank toe or slope requires submission of a PCN per General Condition 27.

10. For NWP 23, the PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with Section 7 of the Endangered Species Act, Essential Fish Habitat under the Magnusson-Stevens Act, and Section 106 of the National Historic Preservation Act.

11. For NWP 44, the discharge shall not cause the loss of more than 300 linear feet of streambed. For intermittent and ephemeral streams, the 300 linear foot limit may be waived in writing by the Sacramento District. This NWP does not authorize discharges in waters of the United States supporting anadromous fisheries.

12. For NWPs 29 and 39, channelization or relocation of intermittent or perennial drainage, is not authorized, except when, as determined by the Sacramento District, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

13. For NWP 33, temporary fills for construction access in waters of the United States supporting fisheries shall be accomplished with clean, washed spawning quality gravels where practicable as determined by the Sacramento District, in consultation with appropriate federal and state wildlife agencies.

14. For NWP 46, the discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless this 300 foot linear foot limit is waived in writing by the Sacramento District.

15. For NWPs 29, 39, 40, 42, and 43, upland vegetated buffers shall be established and maintained in perpetuity, to the maximum extent practicable, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 20. Except in unusual circumstances, vegetated buffers shall be at least 50 feet in width.

16. All NWPs except 3, 6, 20, 27, 32, 38, and 47, are revoked for activities in histosols and fens and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27.

17. For all NWPs, when activities are proposed within 100 feet of the point of groundwater discharge of a natural spring, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27. A spring source is defined as any location where ground water emanates from a point in the ground. For purposes of this condition, springs do not include seeps or other discharges which lack a defined channel.

## **II. California Only**

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

2. In the Primary and Secondary Zones of the Legal Delta, NWPs 29 and 39 are revoked. New development activities in the Legal Delta will be reviewed through the Corps' standard permit process.

## **III. Nevada Only**

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

#### IV. Utah Only

1. For all NWP's, except NWP 47, prospective permittees shall submit a PCN in accordance with General Condition 27 for any activity, in waters of the United States, below 4217 feet mean sea level (msl) adjacent to the Great Salt Lake and below 4500 feet msl adjacent to Utah Lake.
2. A PCN is required for all bank stabilization activities in a perennial stream that would affect more than 100 linear feet of stream
3. For NWP 27, facilities for controlling stormwater runoff, construction of water parks such as kayak courses, and use of grout or concrete to construct in-stream structures are not authorized. A PCN is required for all projects exceeding 1500 linear feet as measured on the stream thalweg, using in stream structures exceeding 50 cubic yards per structure and/or incorporating grade control structures exceeding 1 foot vertical drop. For any stream restoration project, the post project stream sinuosity shall be appropriate to the geomorphology of the surrounding area and shall be equal to, or greater than, pre project sinuosity. Sinuosity is defined as the ratio of stream length to project reach length. Structures shall allow the passage of aquatic organisms, recreational water craft or other navigational activities unless specifically waived in writing by the District Engineer.

#### V. Colorado Only

1. Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado.
  - a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects. In the Colorado River Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification).
  - b. Nationwide Permit No. 13 Bank Stabilization. In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill\* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [\* See (g) for definition of Suitable Fill]
  - c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.
    - (1) For activities that include a fishery enhancement component, the Corps will send the Pre-Construction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-Construction Notification), CDOW will have 10 days from the receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to

provide those comments. If CDOW raises concerns, the applicant may either modify their plan, in coordination with CDOW, or apply for a standard individual permit.

- (2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).
- (3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in building structures is not authorized by this nationwide permit.
- (4) The construction of water parks (i.e., kayak courses) and flood control projects are not authorized by this nationwide permit.

d. Nationwide Permits Nos. 29 and 39; Residential Developments and Commercial and Institutional Developments. A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

2. Final Regional Conditions Applicable to All Nationwide Permits within Colorado
  - e. Removal of Temporary Fills. General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.
  - f. Spawning Areas. General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, In accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material is not authorized by the following nationwide permits in these waters: NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38".

g. **Suitable Fill.** In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

h. **Invasive Aquatic Species.** General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond, or wetland within 10 days of initiating work, one the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

- (1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days. OR
- (2) Remove all mud and debris from Equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes. OR
- (3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

### 3. Final Regional Conditions for Revocation/Special Notification Specific to Certain Geographic Areas

i. **Fens:** All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (<http://soils.usda.gov/technical/classification/taxonomy>).

j. **Springs:** Within the state of Colorado, all NWP's, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A

spring source is defined as any location where groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

### 4. Additional Information

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mats that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. **Designated Critical Resource Waters in Colorado.** In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page (<http://www.spa.usace.army.mil/reg/>)

c. **Federally-Listed Threatened and Endangered Species.** General condition 17 requires that non-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: [http://www.fws.gov/mountain%2Dprairie/endspp/name\\_county\\_search.htm](http://www.fws.gov/mountain%2Dprairie/endspp/name_county_search.htm)

### .C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWP's do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWP's do not grant any property rights or exclusive privileges.
4. NWP's do not authorize any injury to the property or rights of others.
5. NWP's do not authorize interference with any existing or proposed Federal project.

### D. Definitions

**Best management practices (BMPs):** Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

**Compensatory mitigation:** The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

**Currently serviceable:** Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

**Discharge:** The term “discharge” means any discharge of dredged or fill material.

**Enhancement:** The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

**Ephemeral stream:** An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

**Establishment (creation):** The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

**Historic Property:** Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

**Independent utility:** A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

**Intermittent stream:** An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

**Loss of waters of the United States:** Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to

jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

**Non-tidal wetland:** A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

**Open water:** For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

**Ordinary High Water Mark:** An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

**Perennial stream:** A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

**Practicable:** Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

**Pre-construction notification:** A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

**Preservation:** The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

**Re-establishment:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning

natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

**Rehabilitation:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

**Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

**Riffle and pool complex:** Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

**Riparian areas:** Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

**Shellfish seeding:** The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

**Single and complete project:** The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a “single and complete project” is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

**Stormwater management:** Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

**Stormwater management facilities:** Stormwater management facilities are those facilities, including but not limited to,

stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

**Stream bed:** The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

**Stream channelization:** The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

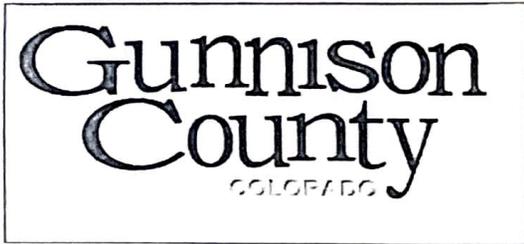
**Structure:** An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

**Tidal wetland:** A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

**Vegetated shallows:** Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

**Waterbody:** For purposes of the NWP, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Please be advised the issuance of a Building Permit is estimated to take between two and three weeks and that the Community Development Department may require additional information.



Gunnison County, CO  
Community Development Department  
221 N. Wisconsin St. Ste. D, Gunnison, CO 81230  
Phone: (970) 641-0360 FAX: (970) 641-8585  
Website: [www.gunnisoncounty.org/planning.html](http://www.gunnisoncounty.org/planning.html)  
Email: [planning@gunnisoncounty.org](mailto:planning@gunnisoncounty.org)

AGREEMENT AND CONSENT OF PROPERTY OWNER FOR REPRESENTATION BY OTHER PERSON DURING THE PERMITTING AND DEVELOPMENT PROCESS

I/We, William R. Graf and Cynthia A. Graf Owner(s) of the described property. (If this property is in a trust, please identify all of the beneficiaries) hereby authorize

Bill Barvitski w/ Trout Creek Engineering as our representative through the permitting and development process and give authorization for this representative to act on our behalf during the project and to be the primary person to be contacted as necessary by the Community Development Department for our property located at the following address and legal description:

Will-R Graf 9/22/21  
Signature of Owner/s

Cynthia A. Graf 9/23/21  
Signature of Owner/s

**21 Glacier Lily Way -Aquatic Resources Delineation  
TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1  
2.0 REGULATORY DEFINITIONS ..... 2  
3.0 BACKGROUND INFORMATION..... 4  
4.0 SITE INVESTIGATION AND DESCRIPTION .....5  
5.0 JURISDICTIONAL ANALYSIS..... 10  
6.0 SUMMARY AND CONCLUSIONS ..... 10

FIGURES

APPENDIX A      PHOTOGRAPHS

APPENDIX B      DATA FORMS

## Aquatic Resources Delineation Report-21 Glacier Lily Way

### 1.0 INTRODUCTION

Bio-Environs was contracted to perform a delineation of the boundaries of aquatic resources, including wetlands that occur within the 1.1-acre 21 Glacier Lily Way property boundary. The parcel is located within the Glacier Lily subdivision approximately 1.5 Miles northeast of the Town of Crested Butte, Colorado near the Washington Gulch Road/Gothic Road intersection. The investigation was performed on July 21, 2021. The property is at the following location:

21 Glacier Lily Way  
Section 26 T13 S R86 W P.M. 6<sup>th</sup> PM  
38.88903° N, -106.97471° W NAD83  
Gunnison County, Colorado  
Elevation: 9154'  
(Figure 1)

The Aquatic Resources Delineation has been completed for planning purposes within the identified project area.

This 2021 study identifies aquatic resources that include two wetland areas and several stretches of a channel/ditch that flows through the area (Figure 2). Wetland A (0.07 ac) is a portion of an emergent wetland area in the northeast corner of the parcel. Wetland B (0.16 ac) is a scrub-shrub/emergent area situated in the southeast portion of the parcel. Approximately 216 linear feet (LF) reach of a small channel/ditch that flows generally southeast through the property are identified as well (Figure 2). Wetland A is supported by hydrology from its geomorphic position at the toe of slope as well as flows within the identified channel/ditch. Wetland B supports hydrology associated with its geomorphic position and the channel/ditch that transects the northern portion of the wetland area. The wetland and water features identified in this report have a surface connection to the Slate River. The Slate River joins the East River near Crested Butte South, Colorado. The East River enters the Gunnison River at Almont, Colorado. 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).

### **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” extends 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 indicated 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 /0 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-Taylor River Area, Colorado, Northeastern Part of Gunnison County*. 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. These features are as follows: 1) a small portion of a wetland area that is located within and adjacent to the northeast of the project area is identified as emergent, persistent, seasonally saturated, palustrine (PEM1B); 2) a portion of a drainage that exists in the eastern portion of the property is identified as emergent, persistent, seasonally flooded, palustrine (PEM1C).

### **3.3 Soil Survey**

Soil information for this area is available on the NRCS Websoil Survey. According to the (NRCS) *Soil Map- Taylor River Area, Colorado, Northeastern Part of Gunnison County* the project area includes of one soil type (Figure 4). The entire parcel is comprised of the Bassel sandy loam, 0 to 25% slopes (BaE). This soil type is not considered hydric. A description of this soil type is included as Figure 5.

### **3.4 FEMA Mapping**

FEMA Mapping indicates that the site is not 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**

Gothic, 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. 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 20 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 Gunnison area.

#### **4.1.1 Site Photographs**

Photographs of the site are located 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 located 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 1.1-acre parcel is situated on a gentle southwest facing hill comprised of mountain meadow terrain and includes wet meadow features. The central portion of the site, just west of a tennis court, includes an area that is associated with an abandoned driveway and a home site that was removed in years past. This area was graded after the removal of the homesite leaving an area of higher ground additional fill. The parcel includes a stand of conifers along the western boundary that appears to be part of the original homesite. Two active, small drainage channels that join in the northeast corner of the property flow northwest to southeast through the property. The channel leaves the property near the tennis courts where it is conveyed under a driveway and the tennis court through a culvert and re-enters the property just south of the tennis court to exit the

property along the eastern property boundary. The project area is subject to hydrology as a result of its geomorphic position at the toe of slope, spring discharge located on the hillslope in the western portion of the parcel, adjacent wetland features to the north and the aforementioned active channel. Outside of the abandoned driveway, the parcel is currently undeveloped.

The area was investigated during of the growing season and most vegetation was identifiable. Wetland areas are primarily emergent but include scrub-shrub and riparian areas along the channel near the tennis court. Emergent wetlands on-site support plant species such as Northwest territory sedge (*Carex utriculata*), field horsetail (*Equisetum arvense*) and California false hellebore (*Veratrum californicum*). The scrub-shrub/riparian wetlands support vegetation such as Drummond's willow (*Salix drummondiana*), park willow (*Salix monticola*) and tea-leaf willow (*Salix planifolia*) in the riparian areas.

The Crested Butte region and Gunnison basin experienced below average precipitation over the 2020-2021 winter and drought conditions for much of the season resulting in below average spring run-off and daily stream-flow in local streams. The area had received very little precipitation for two months prior to the investigation; however, consistent summer precipitation events had been occurring just prior to the investigation contributing to local hydrology. No hydrology information is available for this area in particular. Drainage from this area contributes to the Slate River, located approximately 2 miles to the southeast of the project area. According to USGS stream flow site 385106106571000 Slate R AB Baxter GL @HWY 135 NR Crested Butte, Co flows in the river were at approximately 50 cfs during the investigation. This flow is below a seasonal median flow of approximately 90 cfs for this date.

### **4.3 Results**

Results are presented for the 21 Glacier Lily Way property below, in Figure 2 and Table 1.

#### **Wetlands** (total 0.23 ac)

Two wetland areas are identified within the project area.

#### **Wetland A** (0.07 ac)

Wetland A is an emergent wetland that includes portions of a channel/ditch along its eastern fringe. The area is located in the northeastern portion of the property (Figure 2).

#### **Sample point A-2 wet**

This sample point is located near a ditch feature that is part of an active channel that extends east (Figure 2, Photograph 1). Vegetation is dominated by Northwest territory sedge (OBL). The wetland in this area supports a loam from 0 to 6 inches in depth with a color of 10YR2/1 with no redox features. Soils shift to a loam with a color of 95% 10YR2/1 with 5% concentrations in the matrix showing a color of 7.5YR4/6 from 6 to 18 inches in depth. Soils are a clay loam from 18 to 20 inches in depth with a color of 50% 10YR2/1 that includes 50% concentrations in the matrix with a color of 7.5YR4/6 as well as rust covered grains of sand. Saturation at the ground surface along with the presence

of secondary hydrology indicators Drainage Patterns (B10) and Geomorphic Position (D2) satisfy the wetland hydrology criterion on the day of investigation. All three wetland criteria are met at this site (see data form A-2 wet in Appendix B).

#### Sample point A-2 upl

This site is located just east of the drainage channel that extends through this portion of the wetland (Figure 2, Photograph 2). The site supports both upland and wetland vegetation but is dominated by smooth brome (*Bromus inermis*, UPL). The soils at this site are a loam from 0 to 4 inches below the ground surface with a color of 10YR3/2 and no redox features. Cobble and boulder exist below 4 inches of the ground surface at this location. No wetland hydrology indicators were observed on the day of investigation. A lack of a dominance of wetland vegetation, wetland hydrology and hydric soils distinguish the uplands from the wetland area (see data form A-2 up in Appendix B).

#### **Wetland B** (total 0.16 ac)

Wetland B is a portion of a primarily emergent wetland that includes a small fringe-riparian area along the channel course in the southeast portion of the Project Area (Figure 2).

#### Sample point B-4 wet

This sample point is located on a small low-lying terrace that extends west from the vacated homesite area to the property boundary, west of the tennis court (Figure 2, Photograph 3). The area is dominated by Northwest territory sedge (OBL) with a lesser presence of California false hellebore (FAC). The soils at this location are a silty clay loam from 0 to 2 inches in depth with a color of 10YR3/2 and no redox features. The 10YR4/2 clay loam that is present from 2 to 20 inches exhibits 50% concentrations (7.5YR4/6) in the matrix as well as a depleted matrix at these depths below the ground surface. Saturation of soils at the ground surface and the presence of the water table at 18 inches below the ground surface satisfy the wetland hydrology criterion. All three wetland criteria are met at this site (see data form B-4 wet in Appendix B).

#### Sample point B-4 up

The adjacent upland to Wetland B at this location is the higher ground that makes up the graded and filled area that is associated with the removed homesite in the center of the parcel (Figure 2, Photograph 4). The ground at this location supports a dominance of upland species and is dominated by rabbitbrush (*Ericameria nauseosa*, UPL) and narrow-leaf mountain trumpet (*Collomia linearis*, FACU). The soils at this site are a silty loam from 0 to 4 inches below the ground surface with a color of 10YR3/2 and no redox features. Cobble boulder and fill exists below 4 inches in depth at this location. No wetland hydrology or hydrology indicators were observed on the day of investigation. A lack of a dominance of wetland vegetation, wetland hydrology and hydric soils distinguish the uplands from the wetland area (see data form B-4 up in Appendix B).

#### Sample point B-6 wet

This sample point is established to reveal the conditions on a hillslope that extends east from the aforementioned higher ground that is southwest of the tennis court (Figure 2,

Photograph 5). The area is dominated by Northwest territory sedge (OBL) and field horsetail (FAC). The soils at this location are a clay loam from 0 to 20 inches in depth with a color of 10YR2/1 and 2% concentrations in the matrix showing a color of 10YR4/6. Saturation of soils at the ground surface and the presence of the water table at 7 inches below the ground surface satisfy the wetland hydrology criterion. All three wetland criteria are met at this site (see data form B-6 wet in Appendix B).

Sample point Upland 1

This sample point is established to investigate the conditions on the terrace that exists to the east of the tennis court (Figure 2, Photograph 6). The ground at this location supports both upland and wetland species but is dominated by narrow-leaf mountain trumpet (*Collomia linearis*, FACU) with bare ground comprising 20% of the plot. The soils at this site are a clay loam from 0 to 16 inches below the ground surface with a color of 10YR2/2 and no redox features. From 16 to 18 inches there is clay loam with a color of 10YR2/2 that includes 2% concentrations in the matrix showing a color of 10YR6/8. These soils do not meet hydric characteristics with the redox features present below 16 inches in depth. No indicators of wetland hydrology were present on the day of investigation. A lack of a dominance of wetland vegetation, wetland hydrology and hydric soils distinguish the uplands from the wetland area (see data form B-4 up in Appendix B).

Water features (216 LF channel/ditch)

Non-wetland water features

Two separate channels of a ditch join in wetland A. This water feature extends east under an abandoned driveway and tennis court via a culvert to exit the property at the eastern property boundary (Figure 2, Photographs 7 and 8). The western branch of the channel originates as spring discharge from the hillslope to the west while the northeastern branch of the channel appears to be functioning as drainage to the pond that exists to the north of the property. The channels were experiencing consistent flows several inches deep on the day of investigation. Flows within the channel continue east through Wetland B and then south into the Slate River Valley to enter the wetland area that is associated with the Slate River southwest of the project area via ditches that run along Gothic Road. The channel is approximately 1 foot in width. The channel appears to provide convey water from the pond to the north, spring discharge and surface run-off as well as toe of slope hydrologic discharge within the project area.

**Table 1**

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

	<b>Wetland Type</b>	<b>Acres/Linear feet</b>
<b>Wetland A</b>	<b>PEM1B</b>	<b>0.07 ac</b>
<b>Wetland B</b>	<b>PSS1B</b>	<b>0.16 ac</b>

Channel/ditch Non-wetland water feature	Riverine	216 LF
<b>Totals</b>		<b>0.23 ac wetland 216 LF channel</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.

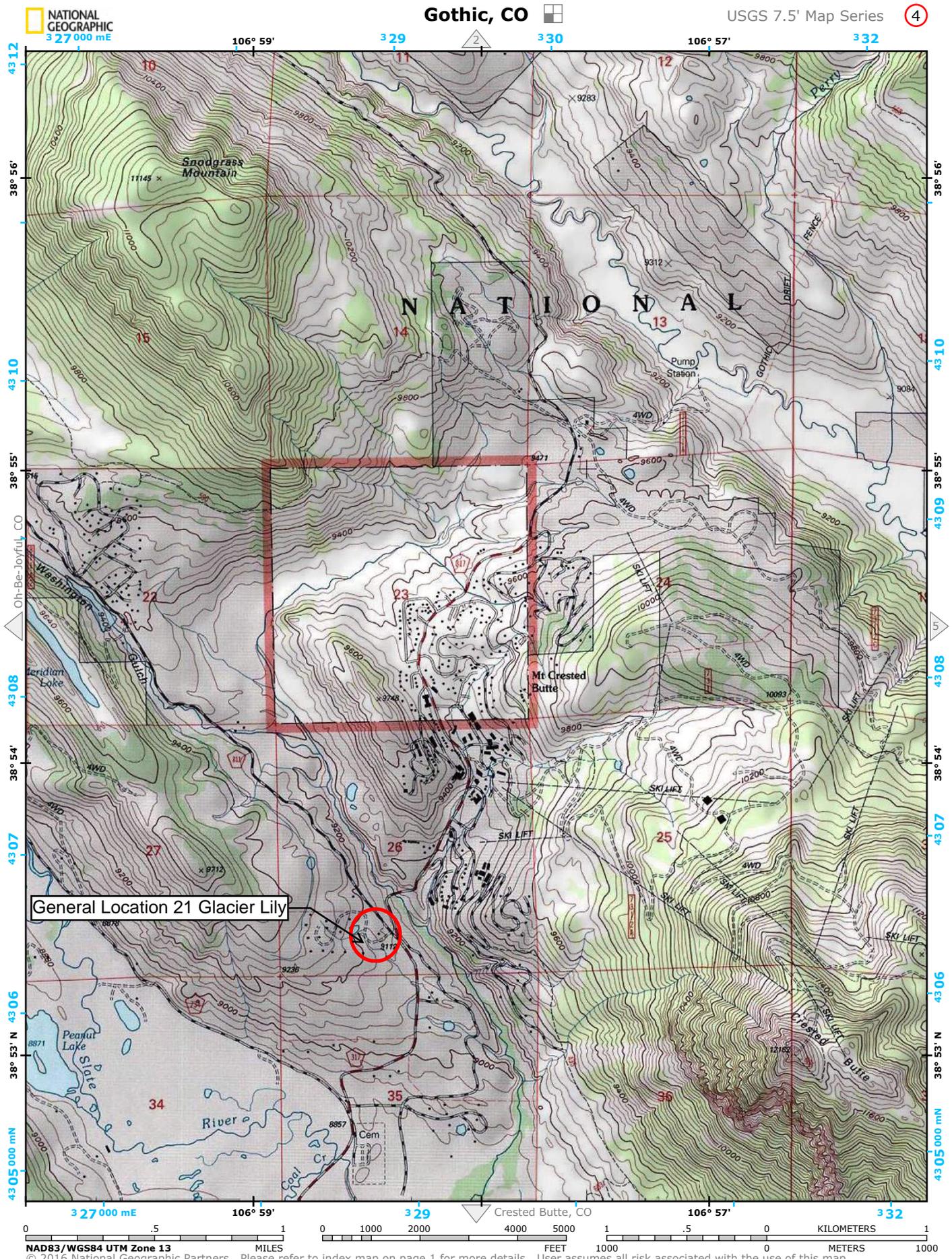
*Individual Permits* are required for projects that do not fall into one of the specific Nationwide Permits or the Regional General Permit or that are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency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

## 6.0 SUMMARY AND CONCLUSIONS

On July 21, 2021 Bio-Environs inspected the 1.1-acre 21 Glacier Lily Way property in Gunnison County, CO. Two wetland areas totaling 0.23 acres, and 216 LF (0.20 ac) of an un-named stream channel are identified within the project area. The wetlands and water feature are connected to the Gunnison River through surface connection. 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 - 21 Glacier Lily



NATIONAL GEOGRAPHIC  
3 27 000 mE

Gothic, CO

USGS 7.5' Map Series

4

General Location 21 Glacier Lily

0 0.5 1 MILES  
0 1000 2000 4000 5000 FEET  
0 0.5 1 KILOMETERS  
NAD83/WGS84 UTM Zone 13  
© 2016 National Geographic Partners. Please refer to index map on page 1 for more details. User assumes all risk associated with the use of this map.

Figure 2. Aquatic Resource Map - 21 Glacier Lily



38.88936  
-106.97538

Sample Pt A-2 wet

Sample Pt A-2 upl

Sample Pt Upland 1

Sample Pt B-4 upl

Sample Pt B-6 wet

Sample Pt B-4 wet

38.88883  
-106.97408

Source: Current World Imagery

Aquatic Resource Delineation-21 Glacier Lily

- Wetland Area = 0.23 ac emergent/shrub-scrub
- Non-wetland water feature- channel/ditch = 216 LF
- Property Boundary = 1.1 ac
- UPLAND SAMPLE POINT
- Wetland Data Point
- WETLAND SAMPLE POINT

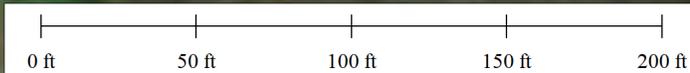


Figure 3. NWI Map - 21 Glacier Lily

Wetlands



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

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.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 4. NRCS Soil Map - 21 Glacier Lily



Soil Map—Taylor River Area, Colorado, Northeastern Part of Gunnison County  
(21 Glacier Prop)

## 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)

### Taylor River Area, Colorado, Northeastern Part of Gunnison County

**Map Unit:** BaE—Bassel sandy loam, 0 to 25 percent slopes

**Component:** Bassel (100%)

The Bassel component makes up 100 percent of the map unit. Slopes are 0 to 25 percent. This component is on till plains on basins. The parent material consists of calcareous glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. 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 3 percent. Nonirrigated land capability classification is 6e. Irrigated land capability classification is 6e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent.

### **Data Source Information**

Soil Survey Area: Taylor River Area, Colorado, Northeastern Part of Gunnison County

Survey Area Data: Version 4, Jun 9, 2020



106°58'47"W, 38°53'34"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>
-----------------------------------	--

<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>
------------------------------------	--

<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>
-----------------------	--

<b>MAP PANELS</b>	<p>Digital Data Available</p> <p>No Digital Data Available</p> <p>Unmapped</p>
-------------------	--

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 **7/29/2021 at 4:46 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 undrilled areas cannot be used for regulatory purposes.

**APPENDIX A**  
**PHOTOGRAPHS**



**Photograph 1.** Photograph taken July 21, 2021 looking north at Sample Pt. A-2 Wet (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 2.** Photograph taken July 21, 2021 looking north at Sample Pt. A-2 upl (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 3.** Photograph taken July 21, 2021 looking west at Sample Pt. B-4 wet (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 4.** Photograph taken July 21, 2021 looking west at Sample Pt. B-4 upl (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 5.** Photograph taken July 21, 2021 looking west at Sample Pt. B-6 Wet (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 6.** Photograph taken July 21, 2021 looking west at Sample Pt. Upland 1 (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 7.** Photograph taken July 21, 2021 looking north at the channel/ditch that flows through wetland A (21 Glacier Lily Way, Gunnison County, CO).



**Photograph 8.** Photograph taken July 21, 2021 looking west at the channel/ditch as it flows east through wetland B (21 Glacier Lily Way, Gunnison County, CO).

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

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

Project/Site: 21 Glacie Lily City/County: Gunnison Sampling Date: 7/21/21  
 Applicant/Owner: 21 Glacier Graf residence State: CO Sampling Point: A-2 wet pump station  
 Investigator(s): T. Lopez, L. Cullip Section, Township, Range: Sec 26 T13S R81W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): convex Slope (%): 3  
 Subregion (LRR): L RRE Lat: 38.88938 Long: -106.97488 Datum: NAD 83  
 Soil Map Unit Name: BaE NWI classification: PEM1B

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"/>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology 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"/>
Remarks:			

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				Total % Cover of: _____	Multiply by: _____
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____ x 1 = _____	
1. _____	_____	_____	_____	FACW species _____ x 2 = _____	
2. _____	_____	_____	_____	FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____	
4. _____	_____	_____	_____	UPL species _____ x 5 = _____	
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)	
= Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>1m</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Carex utriculata</u>	<u>95</u>	<u>Y</u>	<u>OBL</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Sidalcea candida</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>Geum macrophyllum</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. <u>Veratrum californicum</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<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 <u>102</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: A-2 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 <sup>1</sup>	Loc <sup>2</sup>		
0-6	7.6YR2/1	100					loam	
6-18	7.6YR2/1	95	7.5YR4/6	5	C	M	loam	
>20	10YR3/1	50	7.5YR4/6	50	C	M	clay, some sand as conc.	

<sup>1</sup>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)	
<input type="checkbox"/> Thick Dark Surface (A12)	<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 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: clay  
 Depth (inches): 20

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 checked="" 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 checked="" 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): \_\_\_\_\_

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: In addition to hillslope hydrology, there is a ditch w/ flowing water the runs through the wetland

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

Project/Site: 21 Glacier Lily City/County: Gunnison Sampling Date: 7/21/21  
 Applicant/Owner: William Coraf State: CO Sampling Point: A-2 up pump station  
 Investigator(s): T. Lapelle, L. Rudlip Section, Township, Range: Sec 26 T13S R86W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): LRRE Lat: 38.89937 Long: -106.97484 Datum: NAD 83  
 Soil Map Unit Name: BaF NWI classification: PEM1B

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

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

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:		

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>0</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>0%</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species _____	x 4 = _____
= Total Cover				UPL species _____	x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals:	_____ (A) _____ (B)
1. <u>Bromus inermis</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>	Prevalence Index = B/A = _____	
2. <u>Carex utriculata</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators:	
3. <u>Alopecurus pratensis</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<input 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> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
4. <u>Festuca sp.</u>	<u>1</u>	<u>N</u>	<u>---</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5. <u>Dactylis glomerata</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
6. <u>Rumex macrophyllum</u>	<u>1</u>	<u>N</u>	<u>FAC</u>		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
= Total Cover <u>83%</u>					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover <u>41.5</u>					
% Bare Ground in Herb Stratum <u>17%</u>					
Remarks:					

SOIL

Sampling Point: A-2 up

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 <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR3/2	100	—	—	—	—	Loam	
>4	—	—	—	—	—	—	cobble/boulder - fill material	

<sup>1</sup>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"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input 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)	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

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

Remarks: filled area

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes \_\_\_\_\_ No

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

Remarks:



SOIL

Sampling Point: B-4 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 <sup>1</sup>	Loc <sup>2</sup>		
<u>0-2</u>	<u>10YR3/2</u>	<u>100</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>s/ty cly loam</u>	
<u>2-20</u>	<u>10YR4/2</u>	<u>50</u>	<u>10YR5/6</u>	<u>50</u>	<u>C</u>	<u>M</u>	<u>clay</u>	

<sup>1</sup>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 checked="" 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:

<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 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  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): 18

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

Wetland Hydrology Present? Yes  No

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

Remarks:

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

Project/Site: 21 Glacier Lily City/County: Cannon Sampling Date: 7/21/21  
 Applicant/Owner: William Graf State: CO Sampling Point: B-4 vpl  
 Investigator(s): T. Capello, L. Cudlip Section, Township, Range: Sec 26 T 135 R 86W  
 Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): none Slope (%): 0%  
 Subregion (LRR): LRRF Lat: 38.88889 Long: -106.7442 Datum: NAD83  
 Soil Map Unit Name: \_\_\_\_\_ NWVI 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 _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>				
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>				
Remarks: <u>Area Altered by fill and grading.</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>0</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>0%</u> (A/B)		
4. _____							
_____ = Total Cover							
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:			
1. <u>Erica nana</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>			Total % Cover of:	Multiply by:
2. _____				OBL species _____	x 1 = _____		
3. _____				FACW species _____	x 2 = _____		
4. _____				FAC species _____	x 3 = _____		
5. _____				FACU species _____	x 4 = _____		
<u>10</u> = Total Cover				UPL species _____	x 5 = _____		
				Column Totals:	_____ (A) _____ (B)		
				Prevalence Index = B/A = _____			
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ 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>Collomia linearifolia</u>	<u>30</u>	<u>Y</u>	<u>PACU</u>				
2. <u>Bromus inermis</u>	<u>2</u>	<u>N</u>	<u>PACU</u>				
3. <u>Scutellaria chamoensis</u>	<u>1</u>	<u>N</u>	<u>UPL</u>				
4. <u>Teravacuum officinale</u>	<u>1</u>	<u>N</u>	<u>VPL</u>				
5. _____							
6. _____							
7. _____							
8. _____							
9. _____							
10. _____							
11. _____							
<u>44</u> = Total Cover							
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>			
1. _____							
2. _____							
_____ = Total Cover							
% Bare Ground in Herb Stratum <u>56</u>							
Remarks:							

**SOIL**

Sampling Point: B-4 up1

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR3/2	—	—	—	—	—	silty loam	
>4	—	—	—	—	—	—	cobbles/boulder fill material	

<sup>1</sup>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)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input 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)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

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

Remarks: fill material

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

**Field Observations:**

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

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

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

Wetland Hydrology Present? Yes \_\_\_\_\_ No

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

Remarks:

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

Project/Site: 21 Glauber Lily City/County: Garrison Sampling Date: 7/21/21  
 Applicant/Owner: William Ornd State: CO Sampling Point: B-6 wet  
 Investigator(s): T. Lapello, L. Cudlip Section, Township, Range: Sec 26 T13S R1W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5  
 Subregion (LRR): LRRE Lat: 38.80495 Long: -106.97422 Datum: NAD83  
 Soil Map Unit Name: BcE NWI 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 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:						

**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				Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____ x 1 = _____	
1. _____	_____	_____	_____	FACW species _____ x 2 = _____	
2. _____	_____	_____	_____	FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____	
4. _____	_____	_____	_____	UPL species _____ x 5 = _____	
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)	
= Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Coex utriculata</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Equisetum arvense</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>Glum macrophyllum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	3 - Prevalence Index is ≤3.0 <sup>1</sup>	
4. <u>Phleum pratense</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Sirsium arvense</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	5 - Wetland Non-Vascular Plants <sup>1</sup>	
6. <u>Taraxacum officinale</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	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					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					



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

Project/Site: 21 Glacier Lily City/County: Gunnison Sampling Date: 7/21/21  
 Applicant/Owner: \_\_\_\_\_ State: CO Sampling Point: Upland 1  
 Investigator(s): T. Loppello & C. Cudlip Section, Township, Range: Sec 26 T135 R96W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5  
 Subregion (LRR): LRR E Lat: 38.88889 Long: -106.9743 Datum: NAD83  
 Soil Map Unit Name: BoE NWI 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 _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>Higher ground south of Tennis court.</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>0</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>0%</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Collomia linearis</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Phleum pratense</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Juncus acuticus</u>	<u>3</u>	<u>N</u>	<u>FACW</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
4. <u>Epilobium sp.</u>	<u>1</u>	<u>N</u>	<u>-</u>	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. <u>Cirsium arvense</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>
6. <u>Poa pratensis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	<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. _____				
<u>80</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	<u>40</u>			Yes _____ No <input checked="" type="checkbox"/>
2. _____				
<u>20</u> = Total Cover				
% Bare Ground in Herb Stratum <u>20</u>				
Remarks: _____				

**SOIL**

Sampling Point: Opland 1

**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 <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR2/2	100	—	—	—	—	clay lm	
16-18	10YR2/2	98	10YR6/8	2	C	M	clay lm	

<sup>1</sup>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 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: likely fill material

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (2 or more required)</b>
<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 <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

# OWTS Site Inspection

Permit #: OWTS-21-00208

Date: 9-15-2021

Owner: **Graf**

Installer: Pinnacle

Site Address: 21 Glacier Lily Way

Legal Description of Parcel: Lot 21 Glacier Lily Estates

\_yes\_\_ Lot corners staked and labeled, or defined if parcel is large

\_OK\_\_ Location of proposed structure staked and labeled

\_OK\_\_ 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

\_OK\_\_ Site adequate as are required by LUR & OWTS Regs

\_No\_\_ Flood hazards (check for floodplain if not mapped)

\_0-5%\_ Ground slope in excess of twenty percent requires engineer

\_yes\_\_ Probability of high groundwater or shallow bedrock in area

\_potentially unstable slope-mapped\_ Geologic hazards  
(avalanche, rockfall, soil creep, etc.)

\_<100ft to wetlands\_\_ 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.

\_OK\_\_ Other water sources verified-walking the site within 200' of the proposed  
system

\_OK\_\_ Pertinent physical and environmental features verified

**Additional Comments:** The boundaries of this parcel form an unusual "J" or "U" shape and there are wetlands present with a small channel of flowing water that cuts across the property. Although the parcel is mapped as "potentially unstable slope", I observed no evidence of slope movement across the relatively flat proposed development area.

The proposed sewer line placement is through the wetlands and the proposed tank and field areas are on the other side of mapped wetlands from the proposed residential structure. High groundwater is present throughout this

subdivision and the proposed field will be two raised pressurized unlined sand filters. The proposed field area is less than the required 100 feet to the wetland boundary and appears to be pushed back as far as possible towards the parcel boundary and closest to Glacier Lily Way road. application is for two pressurized unlined sand filter beds at the western side of the parcel.

Photographs taken during the site visit are below:



Standing in the area of the proposed fields and looking southerly towards the building site (to the right)



Standing off to the side of the field area and looking south-westerly towards the building site.



Standing at the location of the proposed tank and looking northerly towards the property line boundary. Glacier Lily Way is between the house (background) and the photographer.



Standing at the proposed field area and looking westerly. The property wraps around the subdivision's shared tennis court. The stand of trees on the far side are part of the parcel.



Looking easterly and in the mapped wetlands area at the approximate location where the proposed sewer line will cross. The small channel with flowing water is center.



Standing in front of the build site and looking easterly across the build site.

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

**APPLICANT:** William and Cynthia Graf

**DATE:** November 18, 2021

**SITE LOCATION:** 21 Glacier Lily Way, Lot 21 Glacier Lily Estates

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

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

---

### **PROPOSED PROJECT:**

The applicant is requesting a variance to the Gunnison County OWTS Regulations for a reduced setback distance 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 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 with the exception of the distance between the wetland boundary and the soil treatment area/unlined sand filter is not the required 100 feet.

The OWTS application was denied by the Environmental Health Office because *Section 7.D and Table 7-1* of the *Gunnison County OWTS Regulations* states that a soil treatment area/unlined sand filter shall be at least 100 feet away from a wetland boundary.

### **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, 2021, 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.
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 7.D and Table 7-1 of the *Gunnison County OWTS Regulations* for William and Cynthia Graf at their parcel, 21 Glacier Lily Way, Lot 21 Glacier Lily Estates, under OWTS application 21-00208, 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