Red Cedar Gathering Company

Arkansas Loop to Coyote Gulch Interconnect
Carbon Dioxide Sequestration Pipeline Project

Aquatic Resources Delineation Report

Florida River

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Executive Summary

In 2021, 2022, and 2023, the Southern Ute Indian Tribe Growth Fund's Safety and Environmental Compliance Management Group (SECMG) was requested by Red Cedar Gathering Company (RCG) to evaluate aquatic resources within the proposed alignment for their Arkansas Loop to Coyote Gulch Interconnect Carbon Dioxide (CO_2) Sequestration Pipeline Project (the project). The project entails construction of an 8-inch diameter steel pipeline within a 40-foot-wide to 50-foot-wide right-of-way (ROW) across both tribal trust and private (fee) lands.

The pipeline will capture and transport CO_2 gas from Red Cedar's Arkansas Loop/Simpson natural gas treating facility to an interconnect facility adjacent to the decommissioned Coyote Gulch natural gas treating facility, a distance of approximately 20 miles. The proposed project is located within the exterior boundaries of the Southern Ute Indian Reservation (Reservation) in La Plata County, Colorado.

The following Aquatic Resources Delineation (ARD) report discusses nine aquatic resources along the proposed 20-mile pipeline corridor that meet the 2023 definition of a *Waters of the U.S*. The aquatic resources identified within the project area are associated with two distinct types of channel forms: ephemeral/intermittent and perennial. The ephemeral/intermittent channel forms are further classified as high-gradient and moderate-gradient systems. The perennial Animas river has three types of associated wetlands; Freshwater Forested/Shrub, Palustrine Emergent, and Palustrine Scrub-Shrub. The aquatic resources identified in the project area are in stable condition with minimal anthropogenic or other influences affecting historical flow patterns or native reach, except as noted within the report.

Aquatic resources were delineated in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual, the 2008 Arid West Regional Supplement, and the 2008 Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region.

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Acronyms and Abbreviations

ARD	Aquatic Resources Delineation
GPS	Global Positioning System
NMPM	New Mexico Principal Meridian
OHWM	ordinary high water mark
ROW	Right of Way
SUIT	Southern Ute Indian Tribe
SUGF	Southern Ute Growth Fund
ACOE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

Introduction

As mentioned, RCG proposes construction of an 8-inch diameter steel pipeline within a 40-foot to 50-foot-wide ROW. The purpose of the project is to capture, transport, and ultimately sequester, CO_2 gas that is currently vented to the atmosphere. The proposed project would result in increased revenue to RCG, the Southern Ute Indian Tribe (SUIT or the Tribe), and its membership, and reduce CO_2 emissions in the area.

The pipeline will transport CO_2 gas from the Arkansas Loop/Simpson natural gas treating plant, located in the southeast quarter of Section 35, Township 33 North, Range 7 West, New Mexico Principal Meridian (NMPM), to an interconnect facility adjacent to the decommissioned Coyote Gulch natural gas treating facility located in the southeast quarter of Section 17, Township 32 North, Range 11 West, NMPM.

This ARD Report discusses *Waters of the United States* (U.S.) that occur within the proposed project area. The delineation of aquatic resources within the project area facilitates measures to minimizing impacts to these resources, while ensuring the project achieves its goals.

Project Location

The proposed project is located within the southwestern portion of La Plata County with a central latitude and longitude of 37.043947, -107.920519. The proposed pipeline begins (survey station 0+00) adjacent to the existing Coyote Gulch natural gas treating facility located in the southeast quarter of Section 17, Township 32 North, Range 11 West, NMPM, and terminates (survey station 1027+62) at the existing Arkansas Loop/Simpson natural gas treating facility located in the southwest quarter of Section 36, Township 33 North, Range 7 West, NMPM.

Delineation Methods

A variety of aquatic resources were observed, identified, and delineated within the project area by SECMG personnel on various dates between November 17, 2021, and May 4, 2023.

Ephemeral/intermittent drainages were delineated utilizing the standards set forth in the 2008 “A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States” drafted by US Army Engineer Research and Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL) as ERDC/CRREL TR-08-12. The OHWM delineation utilized the updated datasheet provided within the July 2010 “Updated Datasheet for Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States” (ERDC/CRREL TN-10-1).

Wetlands and perennial aquatic resources identified were delineated in accordance with the procedures set forth in the 2008 Arid West Regional Supplement to the 1987 Wetland Delineation Manual (Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). These aquatic resources were documented using the Wetland Delineation Form - Arid West Region Version 2.0.

In addition to the above-mentioned resources, the following methods were used to delineate and survey aquatic resources:

1. Desktop aerial imagery review of the project area for years 1993, 2003, 2005, 2009, 2010, and 2015. Imagery sources included, Landsat, and Google Earth reviewed via ArcGIS Pro version 3.0.3 and Google Earth Pro®.
2. Desktop review of soils, surface geology, and topographic maps of the project area via ArcMap 10.3 and ArcGIS 3.0.3
3. Review of potential stream gauges within reach of the project area via USGS http://waterwatch.usgs.gov/?m=real&r=co .
4. Review of recent rainfall amounts and duration noted via Accuweather and the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS).
5. Formal delineations in the project area occurred in 2022 and 2023 and included GPS[1] data collection and completion of delineation data sheets.

Existing Conditions

Landscape Setting

The pipeline project travels generally east to west, from the Arkansas Loop/Simpson natural gas treating plant on the Mesa Mountains, dropping down through the Florida and Animas River valleys, and continuing onto the west side of the Southern Ute Reservation to a proposed pipeline interconnect facility in the Coyote Gulch area. Elevations range from 6,040 feet at the Animas River crossing to approximately 7,200 feet on the Mesa Mountains.

The predominant vegetation communities in the project area are piñon-juniper woodland and sagebrush shrubland. Other vegetation community components in the project area include irrigated agricultural land, semi-desert steppe, montane shrubland, and riparian woodland. Details of existing conditions in the project area can be found in the project-specific Biological Assessment completed by SECMG in February 2023.

Aquatic Resources

General Overview

The pipeline route crosses through two perennial channels, the Animas and Florida Rivers, in the east-central portion of the project area. The Animas River is an interstate water, and thus considered a "paragraph (a)(1) water". The Florida River is a tributary to the Animas River, meets both the relatively permanent and significant nexus standards, and is considered a "paragraph (a)(3) water" or "jurisdictional tributary". The pipeline route also crosses through several ephemeral/intermittent tributaries to the Animas and Florida Rivers, such as Cottonwood Canyon, Deer Canyon, and Gaines Canyon, which have been determined to meet the significant nexus standard and are thus also considered "jurisdictional tributaries".

Conditions on the west side of the Southern Ute Reservation and containing the western portion of the project are extremely arid. The proposed pipeline alignment crosses through several named and unnamed drainages that generally flow northwesterly towards McDermott Arroyo in the La Plata River watershed. These drainages, including Clyde Walker Canyon and Roberts Gulch, do not meet the relatively permanent or significant nexus standards, as they alone, or in combination with similarly

[1] GPS iSXBLUE II GNSS submeter receiver for iPad.

situated waters in the region, do not significantly affect the chemical, physical, or biological integrity of paragraph (a)(1) waters (ACOE 2023).

The ultimate receiving water for the entire project area is the San Juan River in New Mexico.

Project Area

An Overview Map series of the project is included in Appendix A. The proposed pipeline is generally located in southern La Plata County, Colorado within the exterior boundaries of the Southern Ute Indian Reservation. Also included in Appendix A is a map series shows each of the nine identified aquatic resources in the project area.

Hydrologic Conditions

The Animas River is the primary surface water resource in the project area. This interstate, perennial river exhibits year-round flows, and is primarily influenced by spring snowmelt, summer monsoonal storms, and irrigation return flows within the greater watershed. The Florida River exhibits relatively permanent flows and is a direct tributary to the Animas River. The Florida River is also influenced by spring snowmelt, summer monsoonal storms, and irrigation return flows.

Additional drainages identified within the Animas River watershed are "jurisdictional tributaries" because they meet the significant nexus standard. Flow volume, duration, and intensity of these drainages are in response to short-duration rain events. These drainages include Cottonwood, Cox, Deer, and Gaines Canyons, and two unnamed ephemeral washes.

The project area lies in the central portion of the Arid West region, in the more localized transitional zone between the San Juan Mountains to the north and the San Juan Basin to the south. Winter precipitation is generally snow, leading to very low discharge events in the spring in all but the larger river systems due to melting conditions. The majority of annual precipitation in the project area falls in the summer, driving the timing of low to moderate (5-10 year) discharge events capable of carrying the largest proportion of sediment over time. These dominant or effective discharges scour vegetation from within the channels and change channel geometry (ACOE 2008).

The limits of the active floodplain, indicated by textural and vegetative changes, and a pronounced change in surface elevation relative to the low terrace, was used to delineate the limits of the active floodplain in the ephemeral/intermittent channel systems within the project area.

Results

"Waters of the United States" identified in the proposed project area are listed in Table 1. A unique identification number was given to each water resource, as well as information regarding location, surface ownership, and civil survey stationing, which starts at the proposed pipeline interconnect facility adjacent to the Coyote Gulch natural gas treating facility in the west and ends at the tie-in point to the Arkansas Loop/Simpson natural gas treating facility in the east.

Table 1. Waters of the United States Identified within the Proposed Project Area.

Name	ID	Latitude, Longitude	Surface Ownership	Civil Survey Station
Gaines Canyon	1a	37.0826, -107.8541	Fee	742+99.3
	1b	37.0826, -107.8545	Fee	741+72.4
	1c	37.0827, -107.8552	Fee	739+68.3
Florida River	2	37.0825, -107.8557	Fee	739+17.9
Unnamed I (trib. to Florida R.)	3	37.0805, -107.8604	Fee	718+80.7

Animas River	4	37.0713, -107.8750	Tribal Trust	651+99.1
Animas R. Wetlands (East)	5a	37.0713, -107.8747	Tribal Trust	653+05.1
Animas R. Wetlands (West)	5b	37.0710, -107.8763	Fee	647+38.5
Deer Canyon	6	37.0570, -107.9047	Tribal Trust	536+73.2
Cox Canyon	7	37.0412, -107.9226	Tribal Trust	458+77.98
Unnamed II (trib. to Cottonwood Canyon)	8	37.0255, -107.9453	Tribal Trust	367+32.3
Cottonwood Canyon	9a	37.0242, -107.9530	Tribal Trust	343+54.35
	9b	37.0243, -107.9550	Tribal Trust	333+29.5

1a - 1c: *Gaines Canyon*

Gaines Canyon contains extremely varied terrain (i.e., is a high gradient system), with elevations in the watershed ranging from approximately 6,730 feet to 6,100 feet where it joins the Florida River. Gaines Canyon contains a type of compound channel characterized by a single, low-flow meandering channel inset into a wider braided channel network (see Photo 1 below). The substrate at the confluence with the Florida River is alluvium, having transitioned from bedrock in the headwaters of the watershed.

No surface water or saturated soils were observed within Gaines Canyon. In addition, no hydric vegetation was associated with the drainage. However, the drainage does exhibit a defined bed and bank, with a pronounced transition from the sandy-bottomed wash to sparsely vegetated upland containing big sagebrush (*Artemisia tridentata*), fendlerbush (*Fendlera* sp.), piñon pine (*Pinus edulis*), rabbitbrush (*Ericameria nauseosa*), and Utah juniper (*Juniperus osteosperma*).

The proposed pipeline alignment crosses through the Gaines Canyon drainage three times, resulting in impacts to approximately 144 square feet (0.003 acre) of temporary impacts. Gains Canyon is classified by Cowardin, et al. (1979) as Riverine – Intermittent – Stream Bed – Sand. No excavated material would be stored within this drainage during construction.

Photo 1. View upstream of Gaines Canyon drainage at crossing (ID: 1a). Photo taken 5/4/2023.

2: *Florida River*

The Florida River typically exhibits year-round flows, except in extreme or exceptional drought years. It is a tributary to the Animas River (a "paragraph (a)(1) interstate water") and meets the relatively permanent standard. It is thus considered a "jurisdictional tributary".

The Florida River channel is classified by Cowardin, et al. (1979) as Riverine – Upper Perennial – Unconsolidated Bottom. The west side of the river has been converted to agricultural use, with evidence of livestock grazing up to the bank of the river. In addition, the proposed pipeline follows an existing pipeline ROW through this area, overlapping previous disturbances from construction. There are isolated patches of cottonwood (*Populus* sp.) and coyote willow (*Salix exigua*) throughout the active floodplain and low terrace on the west side of the river. A fringe of coyote willow occurs on the east bank of the river, before quickly transitioning into sparsely vegetated upland habitat. However, no palustrine wetlands were delineated adjacent to the Florida River at the proposed pipeline crossing.

The proposed pipeline crosses the Florida River at a point measuring approximately 44 feet across from bank to bank and would result in approximately 2,200 square feet (0.05 acre) of temporary impacts to this resource. In addition, temporary fill within the river would be up to 39 cubic yards of material.

Photo 2. View south (down-river) of Florida River at proposed pipeline crossing (ID: 2). Photo taken 4/22/2022.

3: *Unnamed Drainage I*

The Unnamed Drainage I is a high gradient system originating on the Florida Mesa and joining the Florida River approximately 1,200 feet down-gradient of the proposed pipeline crossing. During a site visit on April 5, 2023, a small amount of water was impounded within the drainage above the existing dirt road (as shown in Photo 3). There is a culvert channeling flows within the drainage beneath the road, which may have been blocked at the time.

The drainage is mostly vegetated along the banks with coyote willow, however immediately transitioning to piñon-juniper woodland. This drainage is classified by Cowardin, et al., similarly to Gaines Canyon as Riverine – Intermittent – Stream Bed, however, exhibits a Rubble subclass. Temporary impacts to Unnamed Drainage I are 64 square feet (0.002 acre). No excavated material would be stored within this drainage during construction.

Photo 3. View upstream of Unnamed Drainage I crossing (ID: 3) from dirt road. Photo taken 4/5/2023.

4: *Animas River*

As mentioned previously, the Animas River is the primary surface water resource in the project area. This interstate water has its origin in the San Juan Mountains near Silverton, Colorado and flows southerly into the San Juan River in New Mexico. The river is evenly influenced by spring snowmelt and summer monsoonal storms within the watershed. Irrigation diversions and return flows also have an effect on the discharge within the river.

The Animas River channel is classified by Cowardin, et al. (1979) as Riverine – Upper Perennial – Unconsolidated Bottom. The proposed pipeline crosses the Animas River at a point measuring approximately 133 feet across from bank to bank. Construction activities would utilize the entire 40-foot-wide ROW and a Temporary Use Area immediately to the north at the Animas River crossing, resulting in approximately 7,980 square feet (0.183 acre) of temporary impacts to this resource. Temporary fill within the river channel would be up to 118 cubic yards of material.

Photo 4. View east across Animas River at proposed pipeline crossing (ID: 4). Photo taken 4/22/2022.

5: *Animas River Wetland Complex*

Wetlands occur within the active floodplain of the Animas River and are classified by Cowardin, et al. (1979) as Freshwater Forested/Shrub, Open Water, Palustrine Emergent, and Palustrine Scrub-Shrub. The wetland complex on the west side of the river was delineated by SECMG in the fall of 2022. Figure 2 of the Aquatic Resources Delineation Maps shows three wetland test pit locations on the west side of the river that were in the delineation process. In addition, the wetland determination data forms are included in Appendix B. The proposed pipeline ROW overlaps 131 square feet (0.003 acre) of Open Water, 3,354 square feet (0.077 acre) of Palustrine Emergent Wetland, and 3,093 square feet (0.071 acre) of Palustrine Scrub-Shrub Wetland.

Access to the east side of the river was denied, and an informal delineation of Freshwater Forested/Shrub Wetland there was completed using aerial imagery resources and the U.S. Fish and Wildlife Service's Wetlands Mapper. Approximately 3,459 square feet (0.079 acre) of this type of wetland has been mapped within the proposed pipeline ROW. The Temporary Use Area through the Animas River overlaps approximately 1,350 square feet (0.031 acre) of Freshwater Forested/Shrub Wetland.

Photo 5. Representative photo of palustrine wetlands in the Animas River active floodplain.

6: *Deer Canyon*

Deer Canyon contains an ephemeral/intermittent compound channel within a much broader drainage and less of a gradient than the previously discussed Gaines Canyon system. The watershed is relatively small and drains the south flanks of Long Mountain into the Animas River near Bondad. The predominant anthropogenic influence in the watershed is natural gas development.

The delineation of the OHWM in Deer Canyon consisted of a desktop review using accessible technology such as online topographical base maps and aerial imagery since access to this site was restricted. The evaluation consisted of the drainage characteristics and indicators of successional flow patterns of the flood plain and active channel, as well as vegetative cover. The drainage through the project area flows from northwest to southeast. The active channel is dynamic with unconfined flow paths, resulting in a wide mosaic of low-flow channels, active and terrace floodplains. The active floodplain in Deer Canyon is heavily vegetated with a low flow channel that appears to be in flux based on Google Earth's historical imagery. Standing water was not identified. Figure 3 in the attached Aquatic Resources Delineation Maps shows a close-up view of the proposed pipeline crossing through Deer Canyon on an aerial imagery base map.

The proposed pipeline is sited adjacent to a previously constructed pipeline through Deer Canyon. The impacts of the previously constructed pipeline are clearly evident within the upland piñon-juniper woodland habitat, however native vegetation within the active floodplain of Deer Canyon has returned. The active floodplain in Deer Canyon at the proposed pipeline crossing is estimated to be 55 feet across, resulting in approximately 220 square feet (0.005 acre) of temporary disturbance to what is classified by Cowardin, et al. as Riverine – Intermittent – Streambed – Seasonally Flooded (R4SBC) wetland.

7: *Cox Canyon*

Cox Canyon flows north to south through the proposed pipeline ROW, eventually joining the Animas River near Cedar Hill. The channel is heavily vegetated with moderate scour and clear evidence of recent flows (see Photo 6 below). Surface water was not present at the time of evaluation, but evidence of temporary flooding and flowing water resulting from snowmelt and precipitation events within the watershed was observed.

The western bank abruptly transitions to upland vegetation consisting mostly of big sagebrush and the eastern bank has a less abrupt transition to the same desert scrub vegetation community. Identifiable vegetation within the channel consisted of patches of coyote willow, scattered sagebrush, and a dense ground cover of smooth brome (*Bromus inermis*) and forbs. No hydrophytic vegetation was present within the channel. The proposed pipeline is sited adjacent to a previously constructed pipeline through Cox Canyon located immediately up gradient. Evidence of the past pipeline construction included sloughing banks and reclamation of disturbances.

The delineation of the OHWM within Cox Canyon consisted of evaluating the drainage characteristics within the active floodplain, indicators of successional flow patterns (flood, low flow, and OHWM), and vegetative and sediment texture transitions. The OHWM delineation was based on large amounts of depositional litter and debris, oriented to the flow direction, which was at and above the OHWM. The limit of the active floodplain was observed by a pronounced change in surface elevation and a transition to upland sagebrush habitat. In addition, hydric soils and wetland hydrology are absent. The active floodplain was determined to be approximately 75 feet across at the proposed pipeline crossing. Therefore, the project would result in approximately 300 square feet (0.007 acre) of temporary disturbance to this resource, classified by Cowardin, et al., as Riverine – Intermittent – Streambed – Seasonally Flooded (R4SBC).

Photo 6. Looking northwest into Cox Canyon, upstream from proposed pipeline crossing.

8: *Unnamed Drainage II*

The Unnamed Drainage II flows from north to south through the proposed pipeline ROW and joins Cottonwood Canyon approximately 1,700 feet downstream of the proposed crossing. The proposed pipeline crossing is situated near the transition from high gradient to moderate gradient within the Unnamed Drainage II watershed. As in the previously discussed Deer Canyon crossing, the proposed pipeline is sited adjacent to a previously constructed pipeline and associated disturbances to piñon-juniper woodland and sagebrush scrub upland habitats. The active floodplain in Unnamed Drainage II, containing a form of compound channel, is nearly devoid of vegetation and consists of a sandy bottomed wash transitioning abruptly to upland habitat.

The delineation of the Unnamed Drainage II resource consisted of a cross section evaluation of the drainage within the proposed pipeline disturbance area. The evaluation consisted of documenting drainage characteristics, including indications of successional flow patterns (flood, low flow, and OHWM), vegetative transitions, and sediment texture transitions. Hydrophytic vegetation, hydric soil and wetland hydrology are absent in this drainage. The drainage enters the proposed ROW from a culvert under an existing oil and gas lease road, approximately 250 feet up gradient. This drainage flows

southwesterly for approximately 0.35 miles, where it joins Cottonwood Canyon. Cottonwood Canyon is a tributary to Cox Canyon, which discharges to the Animas River. The Cowardin classification of Unnamed Drainage II is R4SBA: Riverine, Intermittent, Streambed, Temporary Flooded.

Photo 7. Looking northwest into Unnamed Drainage II.

9a - 9b: *Cottonwood Canyon*

The delineation of Cottonwood Canyon (9a and 9b) also consisted of a cross section evaluation of the drainage within the proposed pipeline disturbance (Photos 8 and 9) area. Delineation of Cottonwood Canyon at 9a (station 343+54.35) displays similar OHWM features as the previously discussed *Unnamed Drainage II* and consisted of a similar evaluation of the drainage characteristics, indicators such as successional flow patterns (low flow, active and terrace floodplain, and OHWM), vegetative transitions and sediment texture transitions. However, delineation of Cottonwood Canyon at 9b where the ROW would parallel the drainage for approximately 85 feet displayed different characteristics. The active channel is dynamic with unconfined flow paths, resulting in a wide mosaic of low-flow channels, active and terrace floodplains. The drainage at this station also displays erosional and depositional features seemly in consistent flux, such as colluvial deposits, headcuts and channels separated by islands. Big sagebrush, shrubs and upland forbs and grasses dominate the upland areas and are scattered within the low flow channel and active flood plain. No hydrophytic vegetation, hydric soil or wetland hydrology is present in this drainage. The drainage enters the proposed ROW from a culvert under an existing oil and gas lease road, approximately 200 feet up gradient from ROW crossing at 9a. Cottonwood Canyon continues southeast for approximately 8 miles to discharge to the Animas River. The Cowardin classification is R4SBA: Riverine, Intermittent, Streambed, Temporary Flooded. Temporary impacts to Cottonwood Canyon would be approximately 400 square feet (0.009 acre)

Photo 8. Looking upstream at Cottonwood Canyon drainage crossing 9b.

Photo 9. Looking upstream at Cottonwood Canyon drainage crossing 9a.

Table 1: Aquatic Resources within survey area.

Aquatic Resource Name	Aquatic Resource Classification		Aquatic Resource Impacts (Acres) *	Aquatic Resource Impacts (Linear feet)
	Cowardin	Location		
1a Gaines Canyon	R4SBC	37.082613, -107.854074	0.001	12
1b Gaines Canyon	R4SBC	37.082630, -107.854505	0.001	12
1c Gaines Canyon	R4SBC	37.082660, -107.855205	0.001	12
2 Florida River	R3UBH	37.082421, -107.855780	0.051	44
3 Unnamed Ephemeral Wash and Wetlands	R4SBC	37.080493, -107.860463	0.002	16

4 Animas River	R3UBH	37.071287, -107.875265	0.183	266
5a East Animas Wetlands	PFOA	37.0713, -107.8747	0.11	NA
5b West Animas Wetlands	PABG, PEM1C, PSS1A	37.070740, -107.876880	0.151	NA
6 Deer Canyon	R4SBC	37.056984, -107.90473	0.005	55
7 Cox Canyon	R4SBA	37.041204, -107.922654	0.007	75
8 Unnamed Ephemeral Drainage	R4SBA	37.025527, -107.945297	0.001	12
9a Cottonwood Canyon	R4SBA	37.024229, -107.953305	0.008	85
9b Cottonwood Canyon	R4SBA	37.024287, -107.955024	0.002	15

*Trench will be dug to approximately 6 feet deep and 4 feet wide.

*All temporary fill material will be stored outside of OHWM except for Florida and Animas Rivers

Many biological and cultural resource surveys were conducted beginning in 2021 through 2023 to comply with National Environmental Policy Act (NEPA) and specifically Section 106 and Section 107 requirements for the proposed Grant of Easement for a pipeline ROW requested by Red Cedar Gathering Company for this project.

Pursuant to the NEPA for the federal action of obtaining a Grant of Easement for a pipeline ROW from the BIA, and in compliance with the Endangered Species Act (ESA), a Biological Assessment (BA) was completed for the proposed action. A letter of BA concurrence from the Southern Ute Indian Tribe's Department of Natural Resources, Division of Wildlife Resource Management, was issued on December 22, 2022. Additionally, due to the BA determination of *may affect, likely to adversely affect* the endangered New Mexico Meadow Jumping Mouse (NMMJM), ESA, Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) was initiated by the BIA. The results of the consultation are outlined in the Biological Opinion (BO), included as Appendix F of the PCN. A cultural resources survey report was provided to the Southern Ute Indian Tribe, and subsequently the BIA, for concurrence, which was received April 18, 2023 (Appendix D of the PCN).

Finally, an Environmental Assessment (EA) has been prepared for the proposed action in compliance with the NEPA. The BIA is the lead federal "action" agency for the project, will review the EA and issue a *Finding of No Significant Impact* for proposed action, if appropriate.

References

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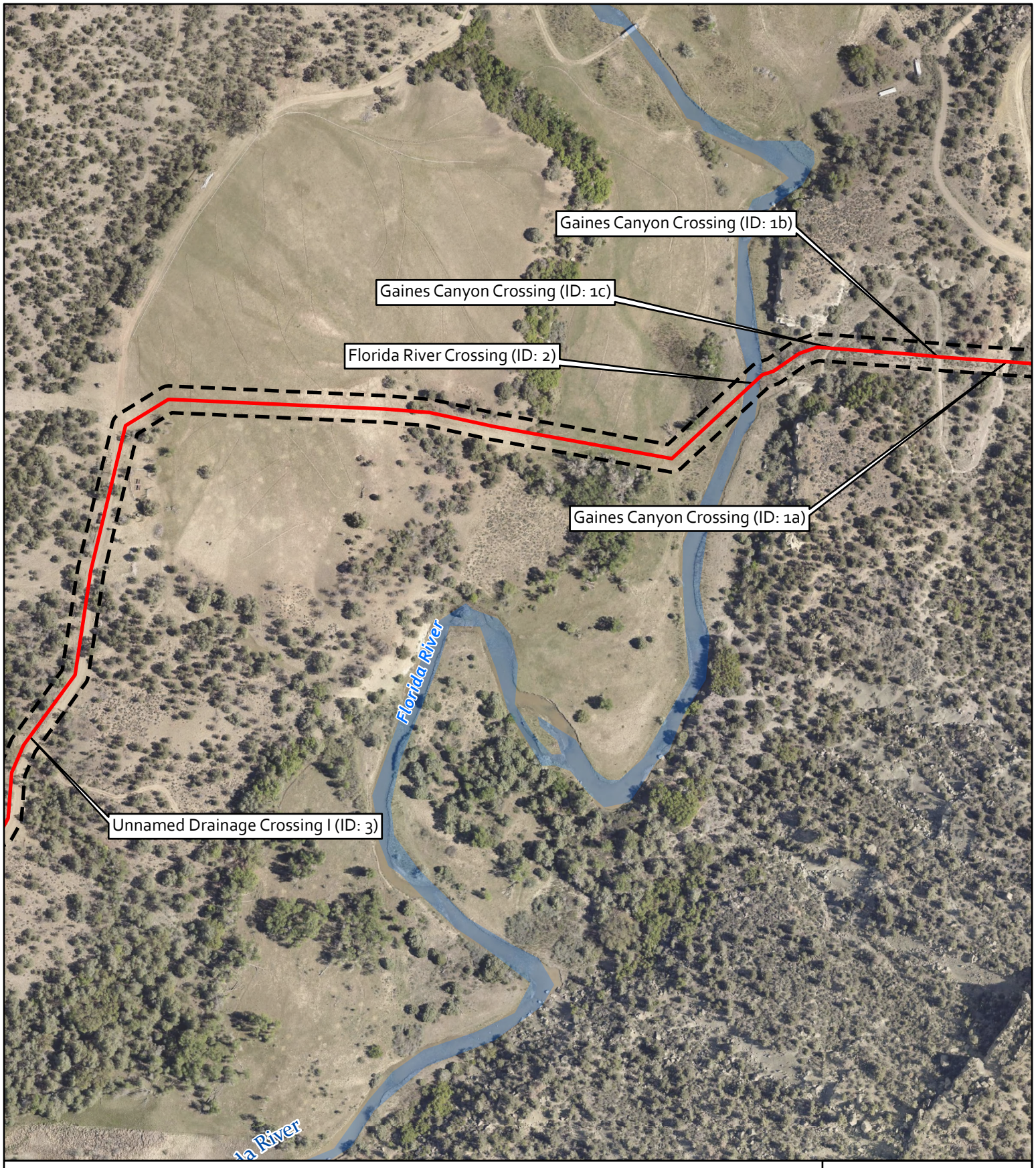
Appendix A - Aquatic Resources Delineation Maps



Pipeline Alignment
Right-of-way

Red Cedar Arkansas
Loop to Coyote CO2
Sequestration Pipeline

Figure 1. Aquatic Resources Delineation Maps

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0 230 460
Feet

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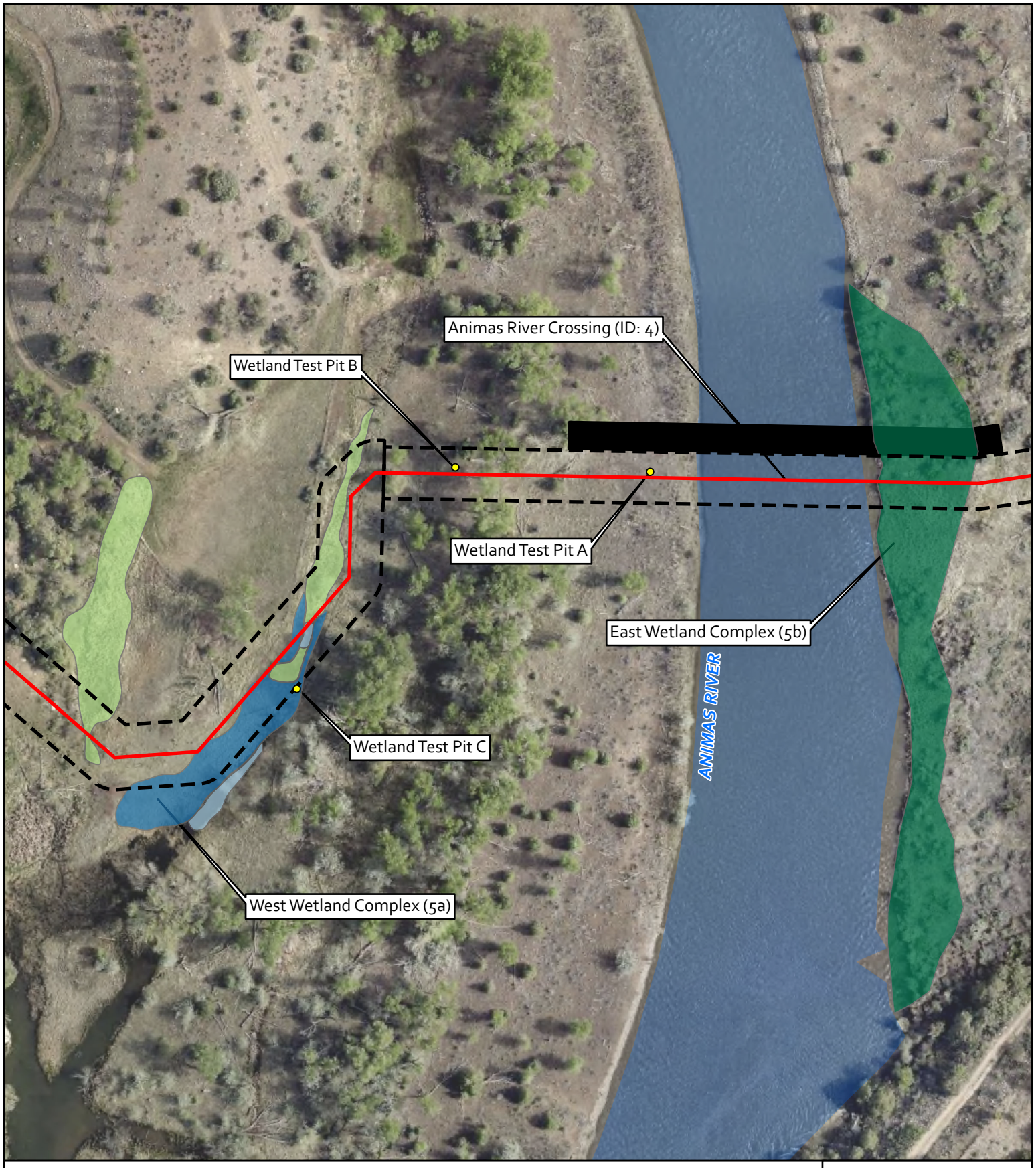
RED CEDAR
GATHERING COMPANY

Date: 6/28/2023



Wetlands

- Open Water (0.003 Acre)
- Palustrine Emergent Wetland (0.077 Acre)
- Palustrine Scrub-Shrub Wetland (0.071 Acre)
- Freshwater Forested/ Shrub Wetland (0.11 Acre)
- Pipeline Alignment Right-of-way
- Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline
- Temporary Use Area

Figure 2. Aquatic Resources Delineation Maps

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0 95 190 Feet

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RED CEDAR GATHERING COMPANY

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Pipeline Alignment
Right-of-way

Red Cedar Arkansas
Loop to Coyote CO2
Sequestration Pipeline

Temporary Use Area

Figure 3. Aquatic Resources Delineation Maps

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0 75 150
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RED CEDAR
GATHERING COMPANY

Date: 6/28/2023

Pipeline Alignment Right-of-way

Red Cedar Arkansas Loop to Coyote CO2 Sequestration Pipeline

Temporary Use Area

Figure 4. Aquatic Resources Delineation Maps

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0 75 150 Feet

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RED CEDAR GATHERING COMPANY

Date: 6/28/2023

Pipeline Alignment
Right-of-way

Red Cedar Arkansas
Loop to Coyote CO2
Sequestration Pipeline

Figure 5. Aquatic Resources Delineation Maps

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Folder: \\gf\shares\GIS\Projects\SECMG\RCG\CO2-Pipeline\RCG CO2 Pipline Maps\

RED CEDAR
GATHERING COMPANY

Date: 6/28/2023

Appendix B - Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO2 PIPELINE
Project Number: 1a,b,c
Stream: GAINES CANYON
Investigator(s): A. BIANCHARD, M. ZARKA

Date: 5-4-23 **Time:** 11:15 AM
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: SW/4 SW/4 SEC. 20 T33N, R9W, NMPM

Projection: **Datum:**
Coordinates: 37.0826, -107.8541

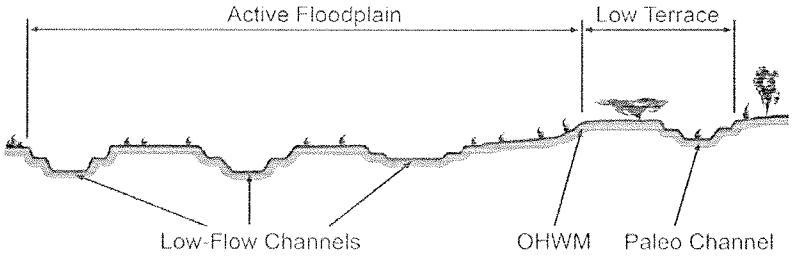
Potential anthropogenic influences on the channel system:
NATURAL GAS DEVELOPMENT WITHIN WATERSHED. ROADS HAVE BEEN CONSTRUCTED OVER/THROUGH THE DRAINAGE AND NUMEROUS WELL PADS EXIST.

Brief site description: SANDY BOTTOM WASH DRAINING EXTREMELY VARIED TERRAIN. MODERATE NATURAL GAS DEVELOPMENT WITHIN WATERSHED. UNDEVELOPED OTHER WISE.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: VARIOUS
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

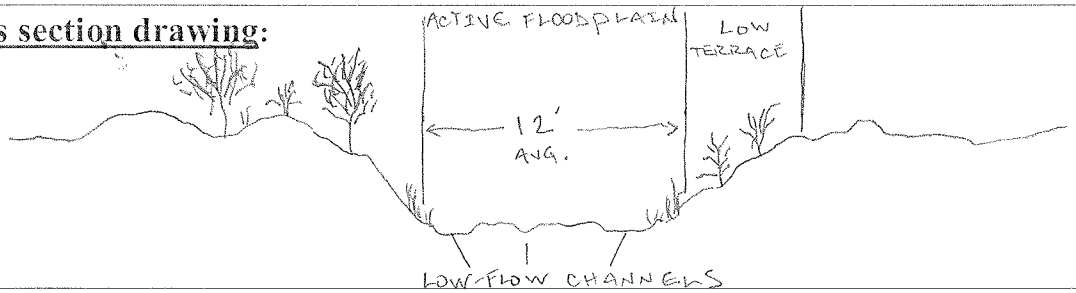


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** GC-1 **Date:** 5-4-23 **Time:** 11:15AM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: SEDIMENT TEXTURE SHIFTS FROM A PREDOMINANTLY SAND MATRIX IN ACTIVE FLOODPLAIN TO SILT IN LOW TERRACE. ACTIVE FLOODPLAIN CONTAINS MUCH LESS VEGETATION THAN SURROUNDING, SPARSELY VEGETATED LOW TERRACE. TEXTURAL AND VEGETATIVE CHANGES ARE ASSOCIATED WITH A PRONOUNCED CHANGE IN SURFACE ELEVATION.

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: COARSE SAND

Total veg cover: 5 % Tree: / % Shrub: / % Herb: 5 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments: ACTIVE FLOODPLAIN DEFINED BY TEXTURAL AND VEGETATIVE CHANGES AND A PRONOUNCED CHANGE IN SURFACE ELEVATION RELATIVE TO ADJACENT LOW TERRACE. HIGH GRADIENT SYSTEM, TRIBUTARY TO FLORIDA RIVER.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO_2 PIPELINE
Project Number: 2
Stream: FLORIDA RIVER
Investigator(s): A. BLANCHARD, M. ZARKA

Date: 5-4-23 **Time:** 11:45 AM
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details: SW/4 SW/4 SEC. 20 T33N, R9W, NMPM

Projection: **Datum:**
Coordinates: 37.0825, -107.8557

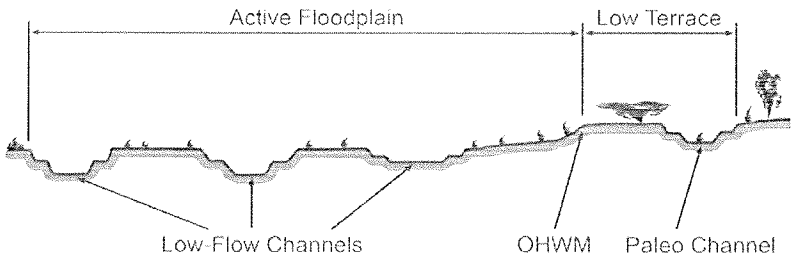
Potential anthropogenic influences on the channel system: PRIMARILY IRRIGATION WITHDRAWALS AND RETURN FLOWS. AGRICULTURAL AND RESIDENTIAL DEVELOPMENTS WITHIN WATERSHED.

Brief site description: WEST BANK OF RIVER HEAVILY GRAZED AND CONVERTED TO IRRIGATED PASTURE. EAST BANK AT CROSSING CONTAINS CONFLUENCE WITH GAINES CANYON. QUICKLY GAINS ELEVATION UP GAINES CANYON.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: VARIOUS
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

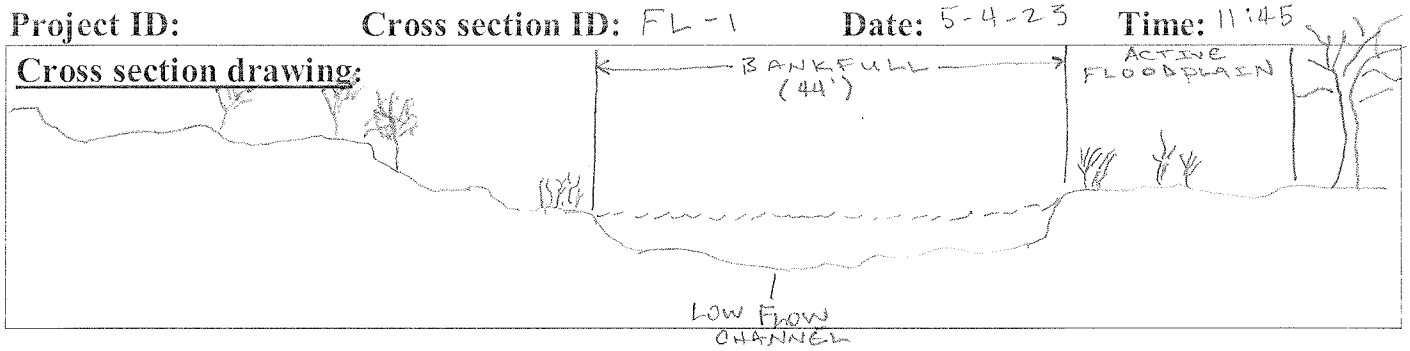


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** FL-1 **Date:** 5-4-23 **Time:** 11:45

Cross section drawing:



OHWM

GPS point: 37.0824, -107.8558

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: THE FLORIDA RIVER WAS AT BANKFULL AND THE ABOVE GPS POINT IS ON THE WEST BANK.

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 37.0822, -107.8561

Characteristics of the floodplain unit:

Average sediment texture: COARSE SILT, LOAM

Total veg cover: 90 % Tree: / % Shrub: 10 % Herb: 80 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: AERIAL IMAGERY
- [ ] Other: _____
- [ ] Other: _____

Comments: ALTHOUGH HEAVILY DISTURBED, THE BOUNDARY OF ACTIVE FLOODPLAIN ON THE WEST SIDE OF THE FLORIDA RIVER WAS DOCUMENTED BY A SLIGHT CHANGE IN SURFACE ELEVATION OBSERVED ON SITE AND ON AERIAL IMAGERY.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO_2 PIPELINE
Project Number: 3
Stream: UNNAMED I
Investigator(s): A. BLANCHARD, M. ZABKA

Date: 4-5-23 **Time:** 9:30 AM
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: NE/4 NE/4 SEC. 30 T33N, R9W, NMPM

Projection: **Datum:**
Coordinates: 37.0805, -107.8604

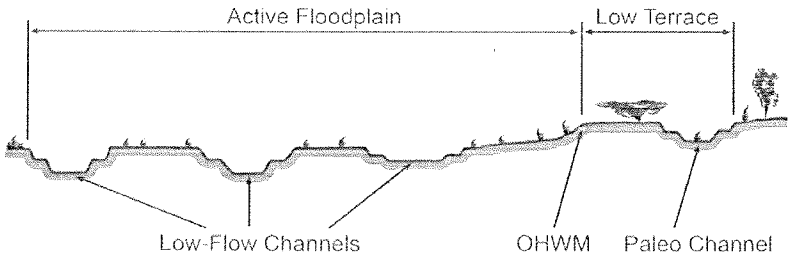
Potential anthropogenic influences on the channel system: RURAL RESIDENTIAL AND AGRICULTURAL IMPROVEMENTS WITHIN DRAINAGE.

Brief site description: SMALL DRAINAGE THROUGH WOODLAND FLOWING INTO FLORIDA RIVER ~1200 FEET DOWNSTREAM. SMALL AMOUNT OF WATER WAS IMPOUNDED IN DRAINAGE ABOVE ROAD CROSSING.

Checklist of resources (if available):

- ☑ Aerial photography
  - Dates: VARIOUS
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

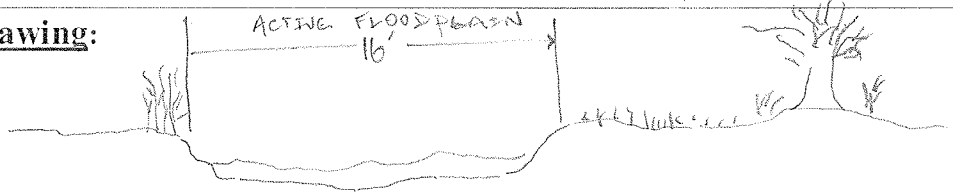


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Project ID: **Cross section ID:** UNI - 1 **Date:** 4-5-23 **Time:** 9:30 AM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☑ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: CLEAR CHANGE IN SURFACE ELEV. AND VEG. COMPOSITION FROM ACTIVE FLOODPLAIN TO UPLAND.

Floodplain unit:

☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO2 PIPELINE
Project Number: 4
Stream: ANIMAS RIVER
Investigator(s): M. ZABKA

Date: 10-11-22 **Time:** 2:00 pm
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: NW/4 SW/4 SEC. 30 T33N, R9W, NMPM

Projection: **Datum:**
Coordinates: 37.0713, -107.8750

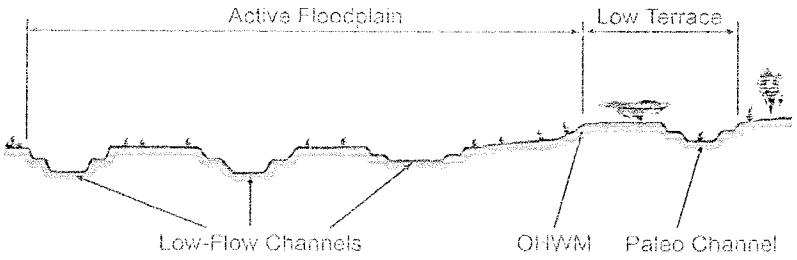
Potential anthropogenic influences on the channel system: ANIMAS RIVER VALLEY IS HEAVILY DEVELOPED. ALTHOUGH, ASIDE FROM DIVERSIONS AT DURANGO FOR LAKE NIGHTHORSE, THE HYDROGEOMORPHIC PROCESSES OF THE RIVER SYSTEM ARE RELATIVELY UNDISTURBED.

Brief site description: PROPOSED PIPELINE SITED ADJACENT TO PREVIOUSLY CONSTRUCTED PIPELINE THROUGH ANIMAS RIVER. EXISTING RIGHT-OF-WAY DISTURBANCES ARE EVIDENT (PIPELINE SCAR).

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: VARIOUS
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☑ Stream gage data
  Gage number: 09361500
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

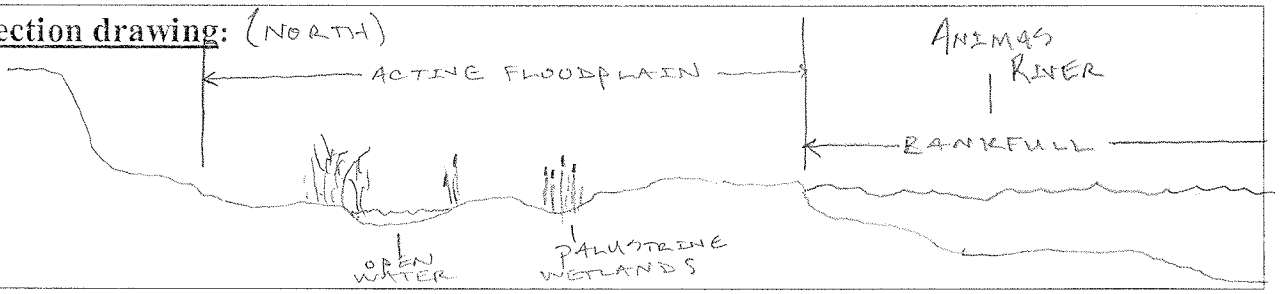


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** AN - 1 **Date:** 10-11-22 **Time:** 2:00 pm

Cross section drawing: (NORTH)



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: RCG COR City/County: La Plata Sampling Date: 10-11-22

Applicant/Owner: RED CEDAR GATHERING State: CO Sampling Point: A

Investigator(s): M. ZARKA Section, Township, Range: NW/4 SW/4 SEC. 30 T33N R9W

Landform (hillslope, terrace, etc.): FLOODPLAIN Local relief (concave, convex, none): CONCAVE Slope (%): 0-1

Subregion (LRR): D - INTERIOR DESERTS Lat: 37.071334 Long: -107.875402 Datum:

Soil Map Unit Name: 50 - FECKAN FINE SANDY LOAM NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	No ✓	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes	No	
Wetland Hydrology Present?	Yes	No	

Remarks: SAMPLED AREA IS NOT WITHIN A WETLAND.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 25 x 25)			
1. Salix exigua	100	Y	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 25 x 25)			
1. Taraxacum	20	Y	FACU
2. Bromus inermis	30	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	45 (A)		170 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No ✓

Remarks: WEST BANK OF RIVER APPEARED VERY WELL DRAINED WITH SIG. AMOUNT OF BARE GROUND / COBBLE. VEG. PRESENT DOES NOT PASS DOMINANCE TEST OR PREVALENCE INDEX.

SOIL

Sampling Point: A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/4	90	—	—	—	—	SANDY/GRAVELLY	10YR 6/3 SAND (10%)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: LOTS OF COBBLE / ROCK IN SOIL TEST PIT. NO REDOX FEATURES OBSERVED. SOIL A SANDY LOAM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks: NO WETLAND HYDROLOGY PRESENT. AREA IS VERY WELL DRAINED.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: RCG CO2 City/County: La Plata Sampling Date: 10-11-22

Applicant/Owner: Red Cedar Gathering State: CO Sampling Point: B

Investigator(s): M. Zabica Section, Township, Range: NW/4 SW/4 Sec. 30 T33N R9W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): D - Interior Deserts Lat: 37.071333 Long: -107.875921 Datum:

Soil Map Unit Name: 50 - Pescar fine sandy loam NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Sampled area is not in a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus angustifolia	25	Y	FACW
2. Juniperus scopulorum	15	Y	FACU
3. Elaeagnus angustifolia	10	N	FAC
4.			
	40	= Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: ____)			
1. Machaeranthera sp.	20	Y	NL
2. Bromus inermis	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	✓	= Total Cover	

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	10	x 3 =	30
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	60 (A)		180 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Although veg. has been indicated to be hydrophytic by prevalence index, one dominant species was not listed and could be considered FACU resulting in prev. index of 3.25.

SOIL

Sampling Point: B

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 3/2	90	—	—	—	—	VERY FINE SANDY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: VERY SANDY LOAM WITH SIGNIFICANT AMOUNT OF COARSE LITHIC ROCK. NO REDOX FEATURES OBSERVED.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

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: SLIGHTLY DAMP AND COOL SOIL. NO SATURATION OBSERVED.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: RCG CO2 City/County: LA PLATA Sampling Date: 10-11-22

Applicant/Owner: RED CEDAR GATHERING State: CO Sampling Point: C

Investigator(s): M. ZABKA Section, Township, Range: N/2 SE/4 SEC. 25 T33N R10W

Landform (hillslope, terrace, etc.): FLOODPLAIN Local relief (concave, convex, none): CONCAVE Slope (%): 0-1

Subregion (LRR): D - INT. DESERTS Lat: 37.070851 Long: -107.876329 Datum: _____

Soil Map Unit Name: 50 - PESCARA FINE SANDY LOAM NWI classification: R3UBH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: SAMPLED AREA IS WITHIN A WETLAND.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	10	N	FACW
2. Agrostis gigantea	15	N	FACW
3. Juncus arcticus	60	Y	FACW
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		170 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: HYDROPHYTIC VEG. IS PRESENT AT SAMPLED AREA.

SOIL

Sampling Point: C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2		2.5YR 3/6	10	C	M	GRITSY	VERY DENSE ROOT MASS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ✓ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: PRIMARY HYDRIC SOIL INDICA TOR A2 (HISTIC EPIPEDON) PRESENT AT SAMPLED AREA.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: BOTH A2 AND A3 WETLAND HYDROLOGY INDICATORS PRESENT.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO2 PIPELINE **Date:** 6-2-23 **Time:** 12:20 PM
Project Number: 6 **Town:** NA **State:** COLO.
Stream: DEER CANYON **Photo begin file#:** **Photo end file#:**
Investigator(s): M. ZABKA

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: NE/4 SW/4 SEC. 35 T33N, R10W, NMPM

Projection: **Datum:**
Coordinates: 37.0570, -107.9047.

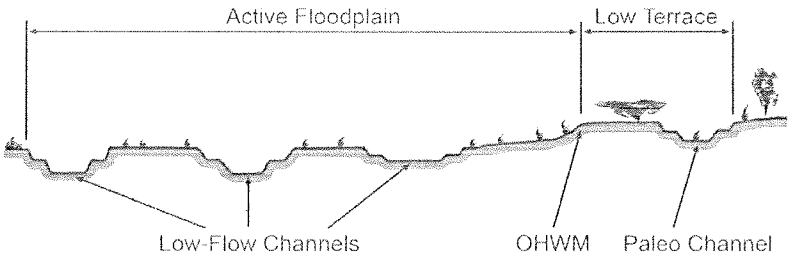
Potential anthropogenic influences on the channel system: NATURAL GAS DEVELOPMENT WITHIN WATERSHED.

Brief site description: MODERATE GRADIENT SYSTEM, TRIBUTARY TO ANIMAS. R. ALTERED FLOODPLAIN HEAVILY VEGETATED WITH SANDY BOTTOMED WASH CHANNEL.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: VARIOUS
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

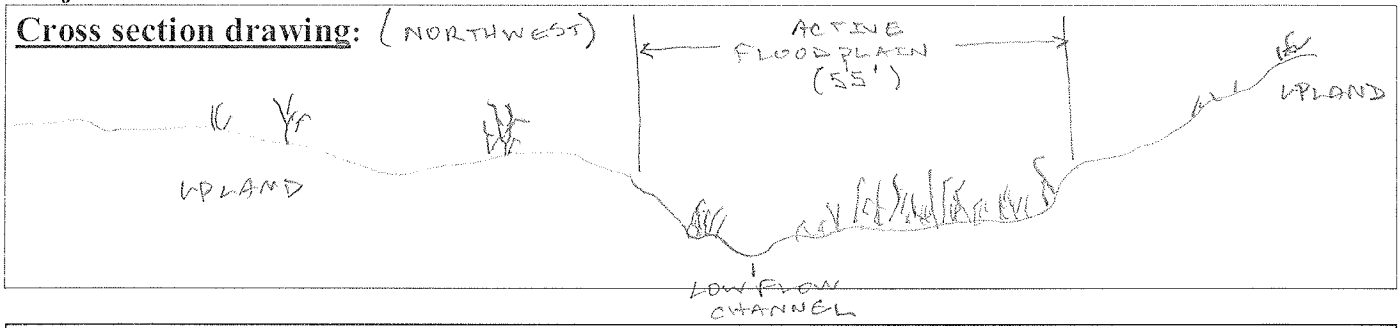


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** DR-1 **Date:** 6-2-23 **Time:** 12:20 PM

Cross section drawing: (NORTHWEST)



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: PRONOUNCED CHANGE IN SURFACE ELEV. FROM ACTIVE FLOOD PLAIN TO UPLAND.

Floodplain unit:

☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: 37.0571, -107.9046 (NE); 37.0570, -107.9048 (SW)

Characteristics of the floodplain unit:

Average sediment texture: ?

Total veg cover: 60 % Tree: / % Shrub: 45 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: CO_2 PIPELINE
Project Number: 7
Stream: COX CANYON
Investigator(s): M. ZABKA, A. BLANCHARD

Date: 5-4-23 **Time:** 2:45 PM
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: SE/4 SW/4 SEC. 3 T32N, R10W, NMPM

Projection: **Datum:**
Coordinates: 37.0412, -107.9226

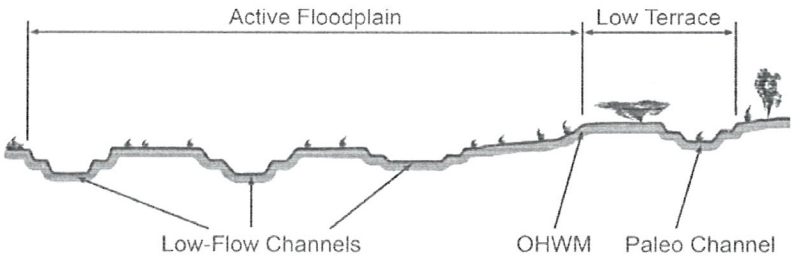
Potential anthropogenic influences on the channel system:
COMPRESSOR STATION ON WEST BANK. OIL + GAS DEVELOPMENT THROUGHOUT AREA.

Brief site description: NO TRUE DEFINED BED + BANK FEATURES. EVIDENCE OF RECENT STORM SURGE FLOW (WOODY DEBRIS, ETC.). MULTIPLE CHANNELS IN BOTTOM OF DRAINAGE.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

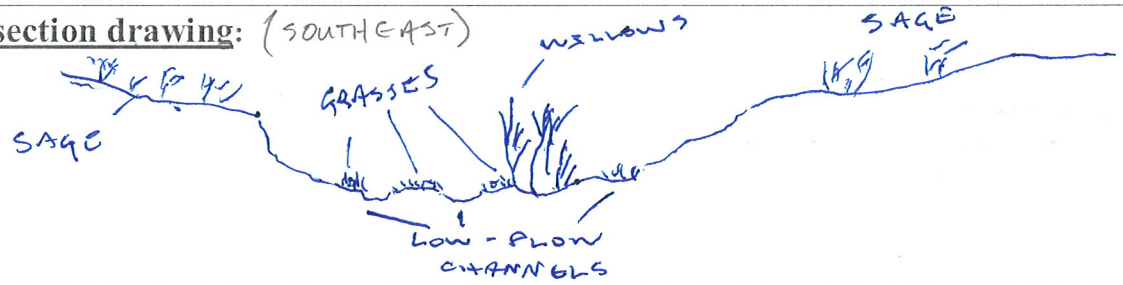


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** CX - 1 **Date:** 5-4-23 **Time:** 2:45 PM

Cross section drawing: (SOUTHEAST)



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit:

☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: 37.0413, -107.9226 (NE) ; 37.0411, -107.9227 (SW)

Characteristics of the floodplain unit:

Average sediment texture: MED. - FINE SILT

Total veg cover: 50 % Tree: / % Shrub: 20 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: ACTIVE FLOODPLAIN CLEARLY IDENTIFIED BY PRONOUNCED CHANGE IN SURFACE ELEV. AND CHANGE IN VEG. COMPOSITION. ACTIVE FLOODPLAIN MEASURED 75' ACROSS.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: RCG CO2 PIPELINE
Project Number: 8
Stream: UNNAMED II
Investigator(s): M. ZARSKA

Date: 6-2-23 **Time:** 12:30 pm
Town: NA **State:** COLO.
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: SW/4 SW/4 SEC. 9 T32N, R9W, NMPM

Projection: **Datum:**
Coordinates: 37.0255, -107.9453

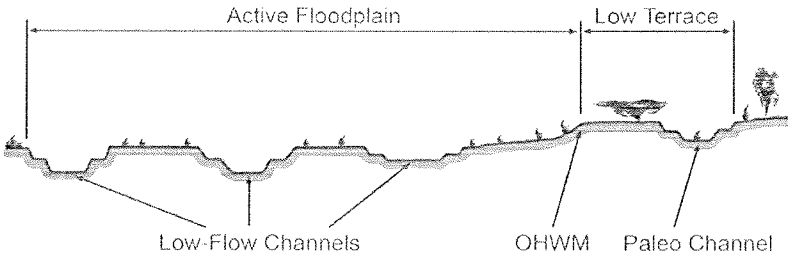
Potential anthropogenic influences on the channel system:
NATURAL GAS DEVELOPMENT IN WATERSHED.

Brief site description: HIGH GRADIENT SYSTEM TRIB. TO COTTONWOOD CANYON. FAIRLY INCISED CHANNEL WITH A NARROW SANDY BOTTOMED WASH.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: VARIOUS
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

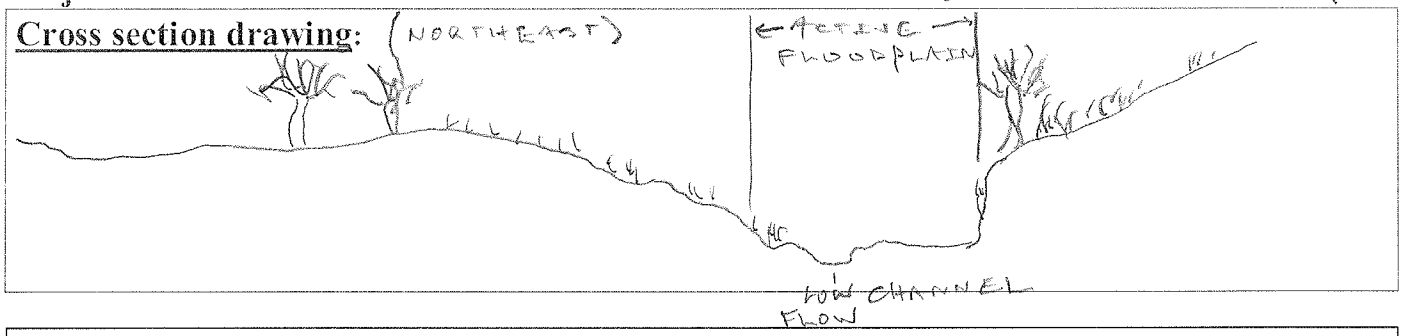


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☑ Other: CIVIL SURVEY DATA

Project ID: **Cross section ID:** UNII-1 **Date:** 6-2-23 **Time:** 12:30 PM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit:

☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: COARSE SAND

Total veg cover: 10 % Tree: / % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: VERY PRONOUNCED CHANGE IN SURFACE ELEV. FROM ACTIVE FLOODPLAIN TO UPLAND.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: CO_2 ARK TO COYOTE
Project Number: 96
Stream: COTTONWOOD WASH
Investigator(s): A. BLANCHARD, M. ZASKA

Date: 5/4/23 **Time:**
Town: **State:**
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
STAMAN CROSSING 32.5x29

Projection: NAD83 **Datum:** NAD 83
Coordinates: 37.024299, -107.955000

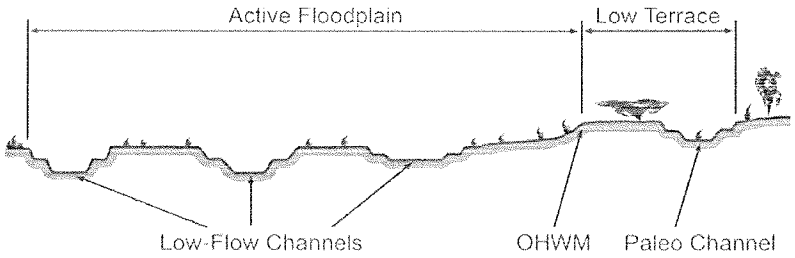
Potential anthropogenic influences on the channel system:
LOW WATER CROSSING UPSTREAM, ON ACCESS ROAD (~250' NORTH)

Brief site description: TYPICAL ARID WEST EPHEMERAL WASH, P/L WEED CROSS PERPENDICULAR TO CHANNEL, WIDTH IS ~15' WIDE FROM OHWM TO OHWM

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [X] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

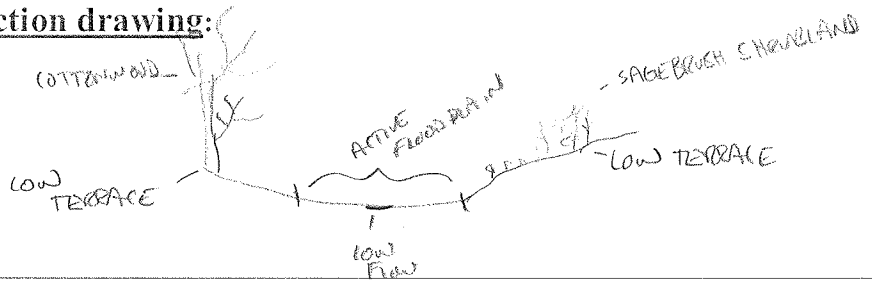


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [X] GPS
   - [ ] Other:

Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:



OHWM

GPS point: 37.024799, -107.955040

Indicators:

- [X] Change in average sediment texture
- [X] Change in vegetation species
- [X] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: 13' WIDE FROM CONTROL OHWM TO OHWM
12' WIDE UPSTREAM
13' WIDE DOWNSTREAM.
SOIL PILES CAN BE SPREAD OUTSIDE OF OHWM

Floodplain unit:

- [X] Low-Flow Channel – NO VEG IN LOW FLOW FINE SAND
- [X] Active Floodplain >5% VEG IN ACTIVE FLOODPLAIN FINE SILT
- [X] Low Terrace ~40% VEG COVER IN LOW FLOW TERRACE • FINE SILT

GPS point: 37.024799, -107.955040

Characteristics of the floodplain unit:

Average sediment texture: FINE SAND/SILT

Total veg cover: 40 % Tree: 5 % Shrub: 30 % Herb: 5 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [X] Mid (herbaceous, shrubs, saplings)
- [X] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [X] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

DOMINANT VEG: ARTR, ERNA, QUGA, ALNUPLEX,

OTHER: BROME, LUPINE, CLOVER, RYEGRASS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: CO_2 PIPELINE
Project Number: 9b
Stream: COTTONWOOD (9B)
Investigator(s): M. ZABKA, A. BLANCHARD
Date: 5/4/23
Time:
Town: NA
State: COLO.
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: 37.024287, -107.955024

Projection: **Datum:**
Coordinates:

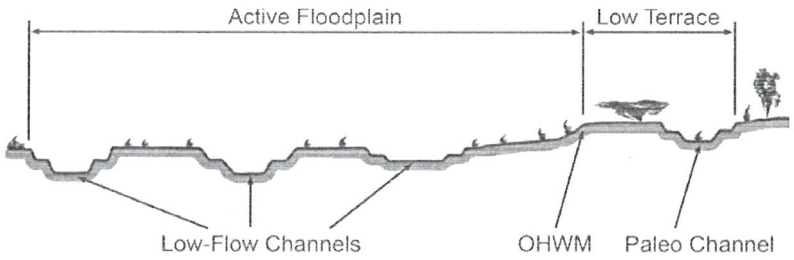
Potential anthropogenic influences on the channel system:
ADJACENT ROAD - LOW WATER CROSSING UPSTREAM.

Brief site description: COTTONWOOD DRAINAGE IS AN EPHEMERAL DRY WASH. THE AREA WITHIN THE OHWM IS NEARLY DEVOID OF VEG. IMMEDIATE TRANSITION TO SAGEBRUSH UPLAND.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

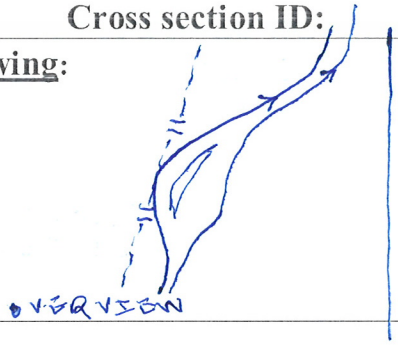


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** **Date:** 5-4-23 **Time:**

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☑ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: OHWM INDICATED BY BREAK IN BANK SLOPE AND UPPER LIMIT OF SAND-SIZED PARTICLES.

Floodplain unit:

☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: