

Aquatic Resources Delineation Report
for the
Eagle Forest Subdivision Project
June 2021



Prepared for:

Eagle Forest Development, Inc.

Prepared by:

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1 Introduction

A residential development is planned at an approximately 45-acre parcel in the Black Forest in Colorado Springs, CO (the Project). The subject property is currently a rural residence crossed by Burgess Creek. The purpose of this report is to identify and describe aquatic resources associated with the creek to support Clean Water Act (CWA) compliance. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process
2. Document aquatic resource boundary determinations for review by regulatory authorities
3. Provide background information

The Project is located in El Paso County, Colorado approximately 13 miles northeast of Colorado Springs in the Black Forest (**Figure 1**). The Project is located in the southeast quarter of Section 8, Township 12 South, Range 65 West, and lies in Black Forest CO 7.5-minute quadrangle map (**Figure 2**). Coordinates for the approximate midpoint of the Project are UTM 13 S 526936 E 4318532 N at an elevation of 7,475 feet above sea level.

2 Methods

2.1 Office Methods

Pre-field research included a review of USGS topographic maps (USGS 1954), aerial photographs (Google Earth, 2021), Natural Resource Conservation Service soil maps (NRCS 2021), National Wetland Inventory (NWI) maps (USFWS 2021), Colorado Wetland Inventory Mapping Tool (CWIMT; CNHP, 2021), and precipitation data (CoCoRaHS 2021). The research was done to assess remotely-sensed data and assess the hydraulic condition in the survey area to assist in identification and characterization of aquatic resources.

2.2 Field Methods

A pedestrian survey was performed June 3, 2021. The survey area and all mapped features are shown on **Figure 3**. Features were assigned unique identifiers: wetlands were given the prefix WL and non-wetland waters were given the prefix WUS (waters of the U.S.). Photographs from each feature and surrounding landscape are included in **Appendix A**.

2.2.1 Wetlands

Wetlands were delineated with a Trimble sub-meter accuracy Global Positioning System (GPS) in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), and the *Western Mountains, Valleys, and Coast Region Supplement Version 2.0* (USACE, 2010). Wetlands were identified by the presence of field indicators (hydrophytic vegetation, hydric soils, and wetland hydrology). Wetlands meeting the criteria were documented on wetland determination data forms (**Appendix B**). Determination of wetland habitat, type, and function was based on the Cowardin classification system (Cowardin et al., 1979). A paired upland point was collected for each wetland point. Photographs were taken of each wetland, and are shown in **Appendix A**. For vegetation sampling, the

appropriate wetland indicator status and common name was determined using the State of Colorado Wetland Plant List (USACE, 2018).

2.2.2 Non-Wetland Waters

Non-wetland waters or water features were identified by the presence of a defined bed and bank and evidence of an ordinary high water mark (OHWM, Mersel and Lichvar, 2014). Each feature was mapped with the Trimble GPS unit. The general characteristic of each feature was documented on an OHWM Datasheet (Appendix B), including the average width of the OHWM, observed depth, bank slopes, and vegetation. Photographs were taken at each feature.

3 Results

3.1 Site Conditions

The Project is located within the Pine-Oak Woodlands ecoregion of Colorado (Chapman et al., 2006), the southern portion of which is known locally as the Black Forest. Although woodlands dominate, the region is a mosaic of woodlands and grasslands. It is somewhat more dissected than the surrounding Foothill Grasslands ecoregion. Soils are formed from weathered sandstone and shale with some outwash on uplands. Land use is woodland, wildlife habitat, and some rangeland (Chapman et al., 2006).

In June 2013, the Black Forest Fire wildfire burned 14,280 acres in the region, the most destructive fire in the state's history (Wikipedia Contributors 2020). Shoup Road, the Project's southern boundary, was the approximate southern extent of the burned area, leaving a portion of the survey area intact. The majority of the burned mature overstory Ponderosa pine (*Pinus ponderosa*) were salvaged both within the Project area and the surrounding landscape. The resulting recovering vegetation is dominated by herbaceous species with some emerging shrubs.

Soil types within the survey area are listed in Table 1. The Project area is mapped as Kettle gravelly loamy sands ranging from 3 to 40 percent slopes (NRCS 2021). No hydric soils are mapped.

Table 1. Soil Types	
Map Unit Name	Hydric Rating (NRCS, 2021)
Kettle gravelly loamy sand, 3 to 8 percent slopes	No
Kettle gravelly loamy sand, 8 to 40 percent slopes	No

The survey area lies within the lower portions of Hydrological Unit Code 12 (HUC 12) watershed 110200030104– Williams Fork (EPA 2021). The Project area drains generally to the southwest, Burgess Creek joins Kettle Creek about 2.3 river-miles downstream from the property line. From that confluence, Kettle Creek in turn joins Monument Creek in another 8.5 river miles.

Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) precipitation gauge CO-EP-271 is located about 3 miles west on Shoup Road (CoCoRaHS 2021). Days with precipitation greater than 0.1 inches during the 30 days prior to the survey are shown in Table 2. The Project area received some rain the previous week, but typical had conditions returned by the survey. Upland soils were dry at the surface and showed slight increased moisture with depth.

Table 2. Station CO-EP-271 - Precipitation Records May 3 to June 3, 2021	
Date	Precipitation (inches)
May 3	0.44
May 4	0.17
May 5	0.03
May 10	0.07
May 11	0.39
May 12	0.20
May 17	0.02
May 18	0.70
May 19	0.14
May 23	0.11
May 24	0.10
May 30	0.26
May 31	0.18
Total	2.81

Note: Only records above trace are reported. Source: CoCoRaHS 2021

3.2 Non-Wetland Waters

WUS-1 – Burgess Creek: One non-wetland water was identified within the survey area. Details of the feature are presented in Table 3, and shown in Figure 2 and Figure 3. Photographs of the feature are presented in Appendix A (Photos 1 through 10), the OHWM datasheet is in Appendix B. Burgess Creek is an intermittent drainage formed by a combination of groundwater and precipitation. The channel ranges 3 to 10 feet wide and is well-defined through the majority of the survey corridor. The channel does not extend upstream (east) of the survey area. OHWMs begin near the property line, though a vegetated swale does extend upstream off-property. Two small depressions near the western boundary held shallow water; however, the remainder of the reach was dry (excepting WL-1). OHWM indicators are a break in slope and clear change in soil, and in reaches, changes in vegetation. There is a 36-inch corrugated metal pipe culvert in the channel that appears to provide a pedestrian or OHV crossing (Figure 3 and Photo 8). The inlet is partially obstructed with debris and is likely overtopped in high flow events.

Table 3. Aquatic Resources				
Name	Cowardin Class¹	Location (lat/long)	Size (ac)²	Length (ft)²
WL-1	PSSC	4318502 N / 526956 E	0.24	NA
Burgess Creek	R4SBC ³	4318501 N / 526856 E	0.18	1,485

¹ PSSC= Palustrine Scrub-Shrub Seasonally Flooded; R4SBC = Riverine Intermittent Streambed Seasonally Flooded. Class for Burgess Creek taken from CNHP.

² Area within survey corridor only – Burgess Creek extends beyond property. Length provided for channel only.

Most of the upstream watershed was burned in 2013. Post-fire erosion has been substantial, altering the channel in several ways. Loss of vegetation and increased input from runoff have incised the channel up to 10 feet in reaches, though the channel was likely incised to some degree pre-disturbance. Visual evidence of the changes remains in both the banks (Photo 4) and in the channel bottom. Several inches of newly-deposited loose sand has accumulated in portions of the channel (Photo 7).

3.3 Wetlands

Wetland WL-1: One wetland was located within the survey area. Details of the wetland are presented in Table 3, and shown in Figure 2 and Figure 3. Photographs are in **Appendix A**, Photos 11 through 15. Wetland data sheets are included as **Appendix B**. NWI and CHNP do not indicate wetlands along the creek, though Burgess Creek itself is identified as an intermittent stream.

WL-1 wetland is located within the channel of Burgess Creek (Figure 3) covering 0.24 acres within 573 feet of the channel. Groundwater was encountered at 15 inches immediately upstream of the wetland, and 13 inches at the wetland sampling point. There is no low flow channel through the wetland, though small areas of surface water were present. Vegetation is dominated by narrow-leaf willow (*Salix exigua*), peach-leaf willow (*Salix amygdaloides*), broad-leaf cattail (*Typha latifolia*), and leafy tussock sedge (*Carex aquatilis*). Due to the dominance of shrubs and saplings, the Cowardin Class is Palustrine Scrub-Shrub (PSS). The water regime modifier of Seasonally Flooded is estimated. The banks confining the wetland are incised 3 to 6 feet, providing a slope break and change in vegetation species to indicate the feature's boundary. The wetland appears to be expanding both up- and downstream, but will be confined laterally to the channel.

4 References

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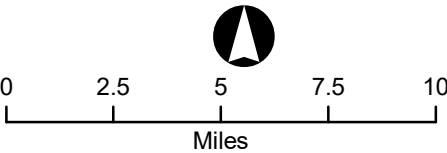
EAGLE FOREST

Figure 1
Project Location

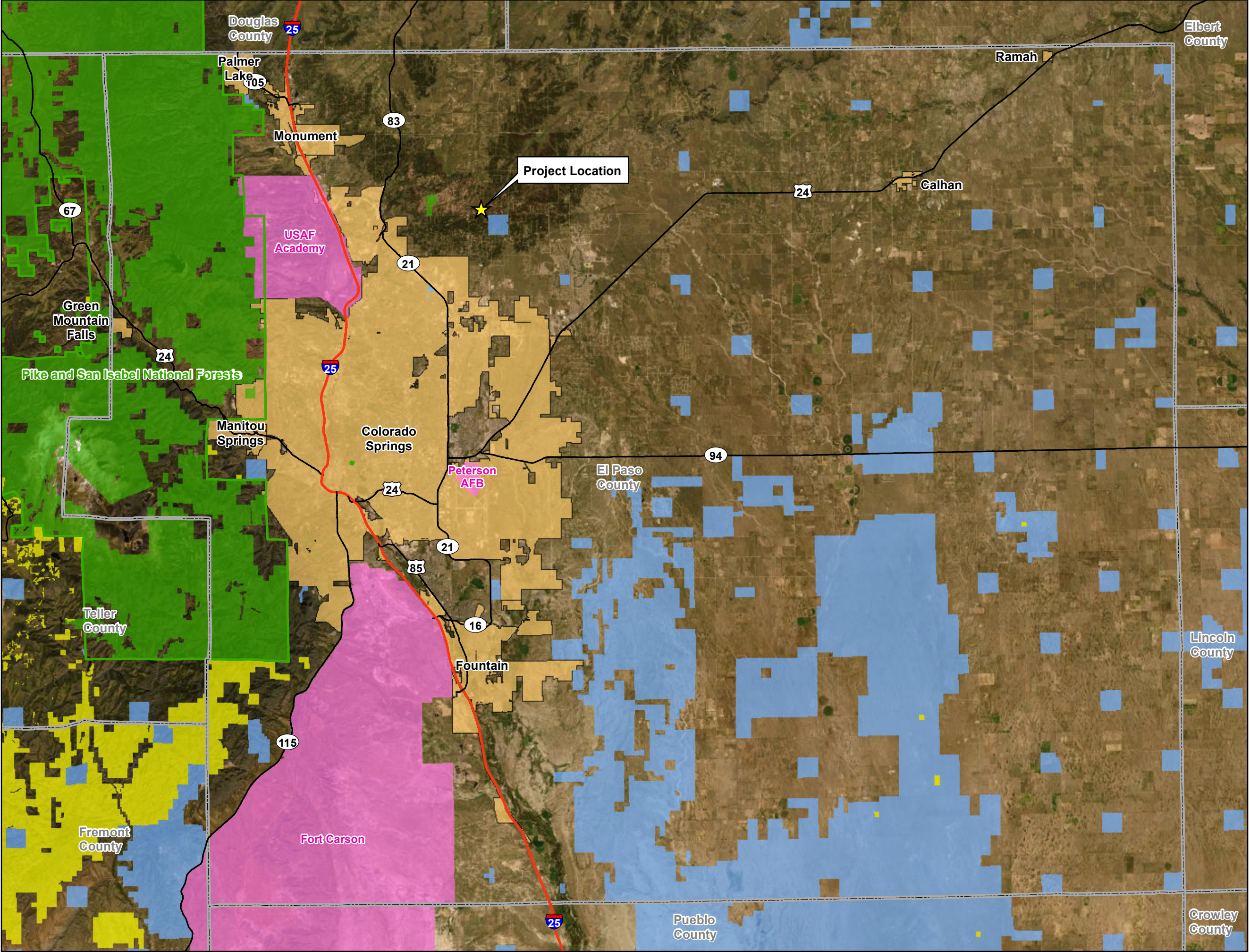
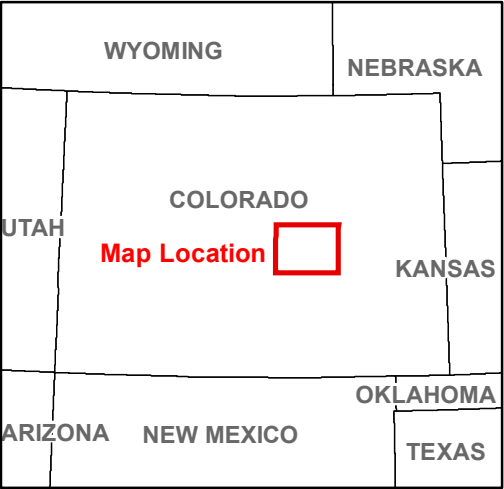
El Paso County, Colorado

LEGEND

- ★ Project Location
- Interstate
- U.S. Route or State Highway
- ▭ County Boundary
- ▭ Municipal Boundary
- ▭ National Forest Boundary
- Jurisdictional Land Ownership**
 - Bureau of Land Management Land
 - Department of Defense Land
 - U.S. Forest Service Land
 - State Land



NAD 83, State Plane, Colorado Central Zone, Feet.
Data Sources: BLM, CDOT, El Paso Co., ESRI, USFS.
F:\...Eagle Forest\Figure 1 Project Location 061421
6-14-2021 sjw



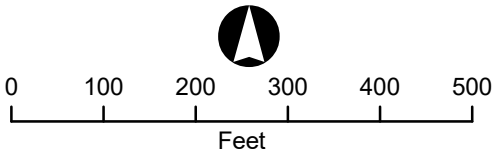
EAGLE FOREST

Figure 2
Survey Results

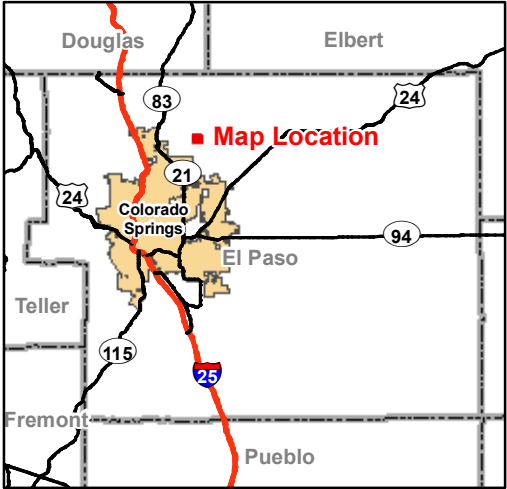
El Paso County, Colorado

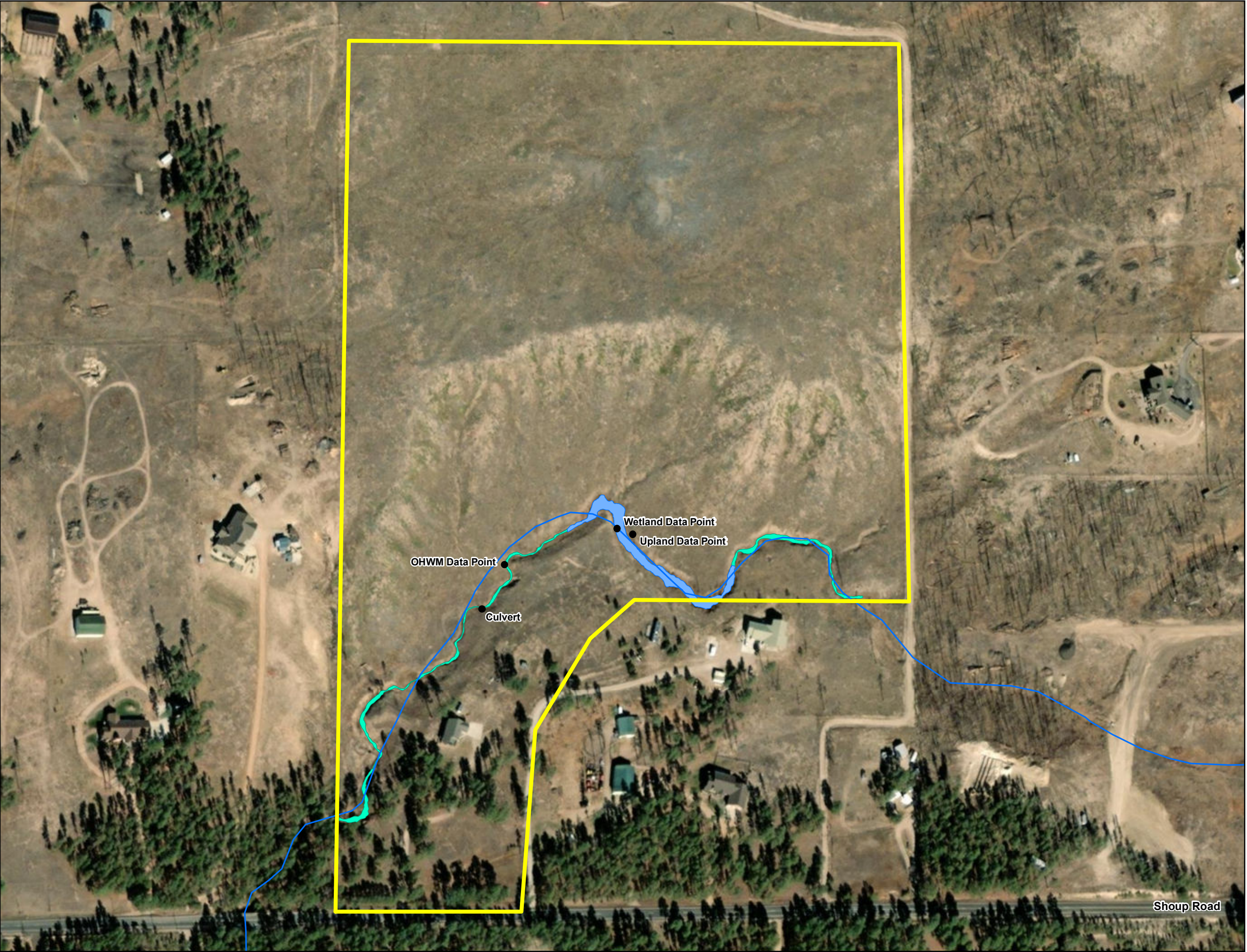
LEGEND

- NHD Flowline - Burgess Creek
- WUS 1 - Burgess Creek
- Wetland WL-1
- Eagle Forest Project Site



NAD 83, State Plane, Colorado Central Zone, Feet.
Data Sources: BLM, CDOT, El Paso Co., ESRI, USFS.
F:\Eagle Forest\Figure 2 Survey Results Topo 061421 6-17-2021 sjw





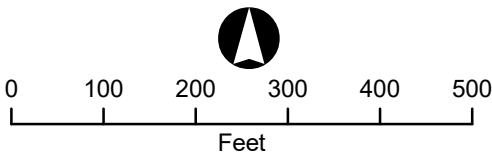
EAGLE FOREST

**Figure 3
Survey Results**

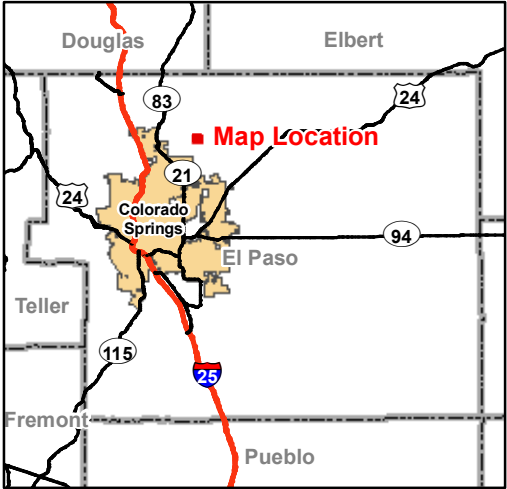
El Paso County, Colorado

LEGEND

- NHD Flowline - Burgess Creek
- WUS 1 - Burgess Creek
- Wetland WL-1
- Eagle Forest Project Site



NAD 83, State Plane, Colorado Central Zone, Feet.
Data Sources: BLM, CDOT, El Paso Co., ESRI, USFS.
F:\...Eagle Forest\Figure 3 Survey Results 061421 6-17-2021 sjw



Aquatic Resource Delineation Report for the Eagle Forest Subdivision

Appendix A – Site Photographs



Photo 1: Burgess Creek near the eastern boundary



Photo 2: Upstream transition from channel to wetland. Groundwater was at 15 in.



Photo 3: Facing upstream to WL-1, the transition from wetland back to channel.



Photo 4: Burgess Creek channel. Note burned stumps still rooted in bank suspended over channel indicating magnitude of post-fire erosion



Photo 5: Facing downstream from the end of WL-1



Photo 6: Location of OHWM datasheet, facing downstream



Photo 7: Soil profile at OHWM datasheet showing recent sandy erosional deposit



Photo 8: 36-in culvert in the channel, see location on Figure 3



Photo 9: Creek channel in the western portion of the reach



Photo 10: Facing southeast towards the property boudary, note the intact Ponderosa pine representative of pre-fire conditions



Photo 11: WL-1 sampling location, feature is about 20 feet wide



Photo 12: WL-1 soil profile, water table was at 13 inches



Photo 13: WL-1 sampling location facing upstream



Photo 14: Upland sampling location, WL-1 in background



Photo 15: Upland soil profile

Aquatic Resource Delineation Report for the Eagle Forest Subdivision

Appendix B – OHWM Datasheets

Project: EAGLE FOREST SUBDIVISION Date: 3 JUNE 21Location: BURGESS CREEK, EL PASO Co., CO Investigator(s): M. KIZLINSKI

Project Description:

Proposed residential development, Burgess Creek crosses property flowing generally southwest

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

- Surrounding watershed burned & logged
- Sediment deposits from post-fire erosion
- Minor excavations near channel (gravel?)
- Incised 6-10 ft
- 36-in culvert

Off-site Information

Remotely sensed image(s) acquired? ☒ Yes ☐ No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

See Figure 3

Hydrologic/hydraulic information acquired? ☐ Yes ☒ No [If yes, attach information to datasheet(s) and describe below.] Description:

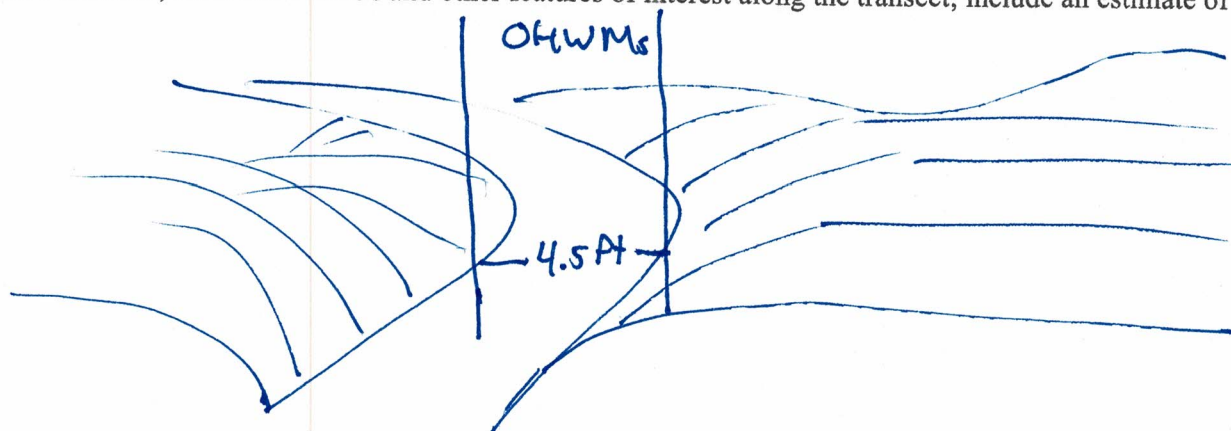
No stream gauges on creek

List and describe any other supporting information received/acquired:

Historical aerial photos

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp ($> 60^\circ$) | ☒ Moderate ($30-60^\circ$) | ☐ Gentle ($< 30^\circ$) | ☐ None

Notes/Description: Slope break varies through reach, but overall moderate

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	60	—	—	—	Yes
Below OHWM	10	60	30	—	—	Yes

Notes/Description: 9+ inches of recent sand/gravel deposit in channel, over possible remnant channel bottom with finer textures

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	—	10	90	—
Below OHWM	—	—	15	85

Notes/Description: - Sample location sparse, but sections of reach are well vegetated with herbs
- Clear change in vegetation

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Channel / OHWMs are clear
- Channel morphology likely to change as vegetation stabilized banks and wetlands possibly develop

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

Project Site: Eagle Forest Subdivision City/County: / EI Paso Sampling Date: June 3, 2021
 Applicant/Owner: Eagle Forest Development, LLC State: CO Sampling Point: WL-1
 Investigator(s): M. Kizlinski Section, Township, Range: SE4 S8 T12 R65W
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0-1
 Subregion (LRR): E Lat: 526935 Long: 4318526 Datum: 13S
 Soil Map Unit Name: Kettle gravelly loamy sand NWI classification: UPL
 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: Wetland is formed by and contained within the of Burgess Creek. No flowing water when sampled, but some surface water present, influence from groundwater. Shrub vegetation expected to expand and dominate over time.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15x30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	4 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	4 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
Sapling/Shrub Stratum (Plot size: 25x15)				Prevalence Index worksheet:	
1. <u>Salix exigua</u>	60	yes	FACW	Total % Cover of:	Multiply by:
2. <u>Salix amygdaloides</u>	20	yes	FACW	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = 40, 20% = 16	80	= Total Cover		UPL species _____	x5 = _____
Herb Stratum (Plot size: 5x10)				Column Totals: _____ (A)	_____ (B)
1. <u>Carex aquatilis</u>	30	yes	OBL	Prevalence Index = B/A = _____	
2. <u>Typha latifolia</u>	20	yes	OBL	Hydrophytic Vegetation Indicators:	
3. <u>Juncus balticus</u>	15	no	FACW	<input checked="" type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
4. <u>Carex praticola</u>	10	no	FACW	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
5. <u>Maianthemum stellatum</u>	2	no	FAC	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
6. <u>Verbascus thapsus</u>	2	no	FACU	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
9. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = 40, 20% = 16	79	= Total Cover			
Woody Vine Stratum (Plot size: 5x10)				Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum 21					

Remarks: Shrubs and saplings are patchy, but overall dominate the wetlands.

SOILSampling Point: WL-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 ¹	Loc ²		
0-7	7.5YR 4/2	100	_____	_____	_____	_____	loamy sand	coarse sand, many fine roots
7-11	10YR 3/2	100	_____	_____	_____	_____	silt loam	finer, no coarse sand
11+	10YR 4/2	100	_____	_____	_____	_____	loamy sand	water table at 13 inches, gravelly at bottom
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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"/> 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) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <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) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: No redox were observed and the soil does not meet hydric indicators. However, epipedon appears to be erosional deposit following 2013 fire, hydric soils have not yet had time to develop fully. Given this and the low value/chromas of the matrices, soils are deemed problematic and hydric soils are granted.

HYDROLOGY**Wetland Hydrology Indicators:**

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <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): 3Water Table Present? Yes ☒ No ☐ Depth (inches): 13Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 4**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: None available

Remarks: Depressions hold standing water, there is no low-flow channel through the wetland. Water table is at 13, not sufficient for A2, but not required to meet hydrology requirement

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

Project Site: Eagle Forest Subdivision City/County: El Paso Sampling Date: June 3, 2021
 Applicant/Owner: Eagle Forest Development, LLC State: CO Sampling Point: UPL-1
 Investigator(s): M. Kizlinski Section, Township, Range: SE4 S8 T12 R65W
 Landform (hillslope, terrace, etc.): side slope Local relief (concave, convex, none): convex Slope (%): 2-3
 Subregion (LRR): E Lat: 4318522 Long: 526946 Datum: 13S
 Soil Map Unit Name: Kettle gravelly loamy sand NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: Adjacent to WL-1. Surface disturbance from salvage logging		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15x30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
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. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: 25x15)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 5x10)				Column Totals: _____ (A) _____ (B)
1. <u>Carex praticola</u>	<u>40</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>Bromus inermis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Juncus balticus</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
4. <u>Cirsium arvense</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
5. <u>Geranium caespitosum</u>	<u>7</u>	<u>no</u>	<u>FAC</u>	
6. <u>Verbascus thapsus</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	
7. <u>Louts corniculatus</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
8. <u>Taraxacum officinale</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>44</u> , 20% = <u>18</u>	<u>88</u>	= Total Cover		
Woody Vine Stratum (Plot size: 5x10)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
50% = _____, 20% = _____	_____	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
% Bare Ground in Herb Stratum <u>12</u>				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks: Sampling point adjacent to wetland sufficient to support some hydric species. Requirements are met, though several mesic species are present indicating transition to UPL.				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOILSampling Point: UPL-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 ¹	Loc ²		
0-4	10TR 4/3	100	_____	_____	_____	_____	sandy loam	gravelly/coarse sand
7-8	10YR 4/4	100	_____	_____	_____	_____	sandy loam	_____
8-11	10YR 4/2	100	_____	_____	_____	_____	sandy clay loam	increase in clay, ribbons easily, no cos
11-18	10YR 5/4	100	_____	_____	_____	_____	sandy clay loam	gravelly at bottom
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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"/> 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) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <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) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: Very dry at surface, field moist at 11 inches. Translocation of clay evident to lower horizons

HYDROLOGY**Wetland Hydrology Indicators:**

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <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? (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: None available

Remarks: No evidence of saturation or water movement