WETLAND DELINEATION REPORT



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EB I-70 Peak Period Shoulder Lane CATEGORICAL EXCLUSION





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WETLAND DELINEATION REPORT

Acronyms and Abbreviations

CDOT	Colorado Department of Transportation
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
I-70	Interstate 70
MP	Milepost
NAD	North American Datum
OBL	Obligate
PEM	Palustrine Emergent
PPSL	Peak Period Shoulder Lane
PSS	Palustrine Scrub Shrub
SH 103	State Highway 103
UPL	Upland
US 40	U.S. Highway 40
USACE	U.S. Army Corps of Engineers



Section 1. Introduction

The Federal Highway Administration (FHWA), in cooperation with the Colorado Department of Transportation (CDOT), is preparing a Categorical Exclusion for proposed changes to the eastbound lanes of I-70 between approximately milepost (MP) 230 and MP 243, in Clear Creek County, Colorado. The proposed changes will improve operations and travel time reliability in the eastbound direction of I-70 in the project area. Additionally, the improvements will be consistent with the *I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) Record of Decision (ROD)*, I-70 Mountain Corridor Context Sensitive Solutions process, and other commitments of the PEIS. The Proposed Action fits within the definition of "expanded use of existing transportation infrastructure in and adjacent to the corridor" as an element of the Preferred Alternative Minimum Program.

The purpose of this report is to document the wetlands and other waters of the U.S. present in the eastbound I-70 Peak Period Shoulder Lane (PPSL) Categorical Exclusion study area. The wetland delineation was completed for the proposed CDOT roadway improvements for the eastbound lanes of I-70 between MP 232 and MP 243 located in Clear Creek County, Colorado. This report can also be used as support for U.S. Army Corps of Engineers (USACE) Section 404 permitting.

Section 2. Proposed Action

The purpose of the I-70 PPSL project is to provide short-term eastbound operational improvements to relieve traffic congestion during periods when traffic volumes are highest. This segment is the most congested stretch of the entire I-70 Mountain Corridor. During both the summer and winter peak season, traffic volumes are highest on weekends when recreational travelers comprise more than 90 percent of traffic. In 2010 drivers experienced speeds of less than 20 miles per hour for 35 percent of the time on Sundays, which have the highest volume. Some motorists divert to the frontage road along I-70, which affects its ability to function as a local access county road.

The Proposed Action would add a peak period shoulder lane between the US 40/I-70 interchange and east Idaho Springs. This managed lane would be used during peak periods, defined as Saturdays, Sundays, and holidays, improving travel times and operations. The project extends from MP 230 to MP 243, with improvements proposed as follows:

- MP 230 to MP 232: signage improvements only. Signage would notify motorists of the status of the managed lane, entrance and exit points, and cost.
- MP 232 to MP 242: roadway improvements, including up to 3.5 feet of widening in select areas to accommodate the managed lane, up to 14 feet of widening at the SH 103 on ramp and 4 feet to 8 feet of widening at all other on-ramps in the corridor; replacement of the existing SH 103 bridge; bridge replacement and interchange improvements at Exit 241; improvements to Water Wheel Park; signage; rock cuts in two locations; and construction of 11 retaining walls.
- MP 242 to MP 243: signage improvements only.

The managed lane, which would be tolled, would operate up to, but not exceed, 20 percent of the annual days or 7.5 percent of the time, and connect to the three-lane section provided by the Twin Tunnels project, east of Idaho Springs, thereby capitalizing on that investment.

The improvements will be consistent with the *I-70 Mountain Corridor Programmatic Environmental Impact Statement* (PEIS) *Record of Decision* (ROD), I-70 Mountain Corridor Context Sensitive Solutions process, and other commitments of the PEIS. The Proposed Action fits within the definition of "expanded use of existing transportation infrastructure in and adjacent to the corridor" as an element of the Preferred Alternative Minimum Program.

See Figure 1 for an overview of the proposed improvements.

Section 3. Study Area Description

The study area for wetlands extends along eastbound I-70 between MP 232 and MP 242. This study area represents the extent of roadway improvements and, therefore, the limits of potential impacts to waters of the U.S. The study area is found on the U.S. Geological Survey 7.5-minute quadrangles: Squaw Pass, Idaho Springs, Central City, Empire, and Georgetown, and has the following coordinates (datum is NAD 83):

- Public Land Survey System
 - Township 3S, Range 74W, Sections 25, 26, 27 33 and 34
 - Township 3S, Range 73W, Sections 27, 28, 29, 30, 34, 35, and 36
 - Township 3S, Range 72W, Sections 31, 32 and 33
- Latitude and longitude
 - Western terminus: Lat 39.7588 Long -105.6517 (39*45'31.87" N Long 105*39'.06.14" W)
 - Eastern terminus: Lat 39.7438 Long -105.4826 (Lat 39*44'37.83" N Long 105*28'57.40" W)

The study area is adjacent to I-70, which follows Clear Creek, a tributary of the South Platte River. The elevation of the study area ranges from approximately 7,400 to 8,250 feet above mean sea level. The majority of wetlands found in the study area are located in the Clear Creek floodplain riparian vegetation community.

Section 4. Wetland Delineation Methods

The field reconnaissance was completed on the following dates by the following individuals:

- September 13, 2013: Francesca Tordonato, Sirena Brownlee, and Sandy Beazley
- October 2, 2013: Sandy Beazley, Andrew Phillips, and Jonathan Chandler

Wetlands were delineated using the procedures outlined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010). The detailed wetland delineation included collection of vegetation, soil, and hydrology data. All the data was recorded on USACE Western Mountain, Valleys, and Coast Region Data Forms.

Figure 1. Overview of Proposed Improvements



The Western Mountains, Valleys, and Coast 2012 Final Regional Wetlands Plant List (Lichvar 2012) was used to determine the wetland indicator status for each plant species identified.

Soils were examined at each sampling point to identify the presence of hydric soil indicators. At each soil data point, a soil probe was inserted to a depth of 12-14 inches, except where a restrictive layer was present, to sample and record the soil profile.

In addition to recording plant species and identifying soil characteristics, wetland sites were assessed for sources of hydrology. Hydrologic sources include: overland flow, inundation during peak runoff, and adjacency to surface water.

All wetland boundaries were mapped using a Trimble GeoXH hand-held Global Position System that records positions to sub-meter accuracy.

In portions of the study area, the western bank of Clear Creek is only accessible from the shoulder of I-70 or by wading across Clear Creek. To ensure the safety of field staff, work was not conducted along the highway shoulder and it was deemed unsafe to wade through Clear Creek given the above-average precipitation that fell in early September. Those areas that were inaccessible included many potential wetlands. These areas have all been assumed to be jurisdictional wetlands for purposes of this report and subsequent project planning. These assumed wetlands (Wetlands 6-20) are fringe wetlands located immediately adjacent to Clear Creek and include a mix of grasses, forbs, shrubs and trees. It is assumed that these wetland areas have similar plant, soil, and hydrologic characteristics as those found in Wetland 5; therefore, Wetland 5 was used as a reference. These assumed wetlands will be subject to the same avoidance, minimization, and mitigation measures as those wetlands fully delineated.

Section 5. Wetlands

The study area contains 20 wetland areas, which consist of 5 fully delineated wetlands (Wetlands 1-5) and 15 assumed wetlands (Wetlands 6-20). These wetlands encompass a total of approximately 3.17 acres. Almost all of these wetlands are immediately adjacent to Clear Creek. The exceptions are Wetland 1 and Wetland 2, both of which are located within roadside drainage features removed from Clear Creek, but ultimately flow into the creek.

Using the standard wetland classification system (Cowardin, et al. 1979) all 20 wetland areas are classified as palustrine emergent and palustrine scrub/shrub combination (PEM/PSS). Figure 2 shows the location of the 20 wetland areas. Appendix A, Appendix B, and Appendix C of this technical memorandum contain wetland data sheets, representative wetland photographs, and detailed location maps, respectively.

5.1 Wetland 1

Wetland 1 is located in the southeast gore of the US 40/I-70 interchange, adjacent to the eastbound acceleration ramps. The wetland is centered on a detention pond located in the gore and ultimately outflows to Clear Creek. The date of construction of the detention pond is unknown, but its boulder lined banks indicate it is a manmade facility. Wetland 1 is 0.87 acre. Major vegetation, soil, and hydrology characteristics are described below.

Figure 2. Wetland Overview Map



Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species include *Betula occidentalis*, *Populus angustifolia*, and *Glyceria grandis*.

Soils

The soil was a homogenous sandy loam soil with saturation beginning at a depth of one inch. Redox concentrations are present. The soil type determined to be a "Redox Dark Surface".

Hydrology

Standing water was present in the pond, potentially resulting from recent precipitation. Hydrology is primarily provided by roadway runoff. Given the vigor and variety of hydrophytic vegetation present, the site receives and retains hydrology throughout the growing season.

5.2 Wetland 2

Wetland 2 is located adjacent to I-70, at the base of a fill slope in the southeast quadrant where the highway crosses over County Road 306. This is a depressional wetland located on the upstream side of a culvert that drains to Clear Creek. Wetland 2 is 121 square feet. Major vegetation, soil, and hydrology characteristics are described below.

Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species included *Populus angustifolia*, *Carex aquatilis and Agrostis gigantea*.

Soils

Soils were problematic as the entire soil profile (0 to12 inches deep) is composed of roadway sand. The soil was moist, but not saturated, likely the result of high drainage capabilities of sand.

Hydrology

Hydrology is provided by an upstream culvert carrying roadway runoff from the westbound lanes, as well as sheetflow from the upslope roadway.

5.3 Wetland 3

Wetland 3 is located immediately adjacent to Clear Creek, at the base of a fill slope at Water Wheel Park, in the Town of Idaho Springs. The wetland is perched on a terrace ranging from 0 to 2 feet above the surface of Clear Creek. There is a distinct boundary between the upland and wetland where a 45^o slope climbs abruptly to Water Wheel Park; therefore no upland data sheet was completed. Wetland 3 is 0.04 acre. Major vegetation, soil, and hydrology characteristics are described below.

Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Primary dominant species included *Calamagrostis canadensis* and *Salix irrorata*.

Soils

The top layer of the soil profile (0 to 3 inches deep) was a homogenous sandy loam. From 3 to 14 inches, the soil was a sandy clay loam with redox concentrations present. The soil profile type determined to be a "Redox Dark Surface".

Hydrology

Saturation was present at the base of the soil profile, but hydrology is predominately provided by overland flow with water draining from Water Wheel Park, as well as overbank flow during peak runoff conditions along Clear Creek.

5.4 Wetland 4

Wetland 4 is located immediately adjacent to Clear Creek at the base of a fill slope from the eastbound deceleration lane at the SH 103/I-70 interchange. The wetland is perched on a terrace ranging from 0 to 3 feet above the surface of Clear Creek. The bank has been armored with rip rap boulders. This wetland is 126 square feet. Major vegetation, soil, and hydrology characteristics are described below.

Dominant Vegetation

Wetland 4 has a mix of wetland and upland vegetation, including *Betula occidentalis*, *Pascopyrum smithii*, and *Eleocharis acicularis*. Hydrophytic vegetation was considered problematic. A majority of the upland species present are commonly present in seed mixes when revegetating areas disturbed by previous construction.

Soils

The soil profile contained four distinct layers and included sandy loam and silt loam soils. Redox concentrations were present from 1 to 12 inches, after which bedrock/rip rap was reached. The soil profile type determined to be a "Redox Dark Surface".

Hydrology

Hydrology is predominately provided by overland flow with water draining from a soft surface pull-out immediately upslope of the wetland, as well as overbank flow during peak runoff conditions along Clear Creek.

5.5 Assumed Wetland Features

Wetland 5 is located immediately adjacent to Clear Creek at the base of a fill slope from the eastbound deceleration lane at the West Idaho Springs interchange. The wetland is perched on a terrace ranging from 0 to 3 feet above the surface of Clear Creek. This wetland is 0.03 acre. Major vegetation, soil, and hydrology characteristics are described below.

Wetland 5 contains features similar to other wetlands located within the corridor and was therefore used as a reference for all assumed wetlands within the corridor (Wetlands 6-20).

Dominant Vegetation

One hundred percent of dominant species are OBL, FACW, or FAC. Dominant species included *Populus angustifolia Betula occidentalis, Salix monticola, Poa pratensis, and Juncus compressus.*

Soils

The soil profile contained three distinct layers and included sandy loam, sand, and sandy clay soils. Redox concentrations were present throughout. Soil profile type determined to be a "Redox Dark Surface."

Hydrology

Hydrology predominately provided by overland flow with water draining from the roadway, as well as overbank flow during peak runoff conditions.

5.6 Assumed Wetland Features

Wetlands 6-20 could not be safely accessed, but are assumed to have the vegetation, soil, and hydrologic characteristics necessary to be classified a wetland. These wetlands could not be reached because of a combination of above average flows of Clear Creek and the inability to safely operate from the highway shoulder. These wetlands will be subject to the same avoidance, minimization, and mitigation measures as all fully delineated wetlands. The size and major vegetation characteristics are detailed in Table 1.

Table 1. Assumed Wetland Characteristics

Wetland #	Size	Characteristics
6	0.13	Fringe wetland consisting of grasses, shrubs, and trees.
7	0.01	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
8	0.03	Fringe wetland consisting of grasses, shrubs, and trees.
9	0.03	Fringe wetland consisting of grasses and shrubs.
10	0.03	Fringe wetland consisting of grasses and shrubs.
11	0.02	Fringe wetland consisting of grasses.
12	0.52	Fringe wetland consisting of grasses and shrubs.
13	0.70	Fringe wetland consisting of grasses and shrubs.
14	0.03	Fringe wetland consisting of grasses and shrubs.
15	0.01	Fringe wetland consisting of grasses and shrubs. Upland tree species intermixed.
16	0.11	Fringe wetland consisting of grasses and shrubs.
17	0.13	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
18	0.07	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
19	0.02	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.
20	0.08	Fringe wetland consisting of grasses, with upland tree species immediately adjacent.

Section 6. Other Waters of the U.S.

Others waters of the U.S. present in the study area include Clear Creek, West Fork Clear Creek, Chicago Creek, Silver Creek, Mill Creek, Fall River, and Soda Creek. In addition, there are numerous unnamed intermittent drainages located throughout the corridor, associated with the mountain topography.

The Clear Creek ordinary high water mark was mapped using the current edge-of-water survey and adding the two-year flood event. This methodology was approved by the USACE. Clear Creek is the only water body to receive a mapped ordinary high water mark because it is the only such feature that may impacted by the Proposed Action.

Section 7. References

- Cowardin, Lewis M., Virginia Carter, Frances C. Golet, and Edward T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service, FWS/OBS- 79/31.
- Lichvar, R.W. 2012 *The National Wetland Plant List*. ERDC.CRREL TR-12-12. Hanover, NH: US Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.
- Reed, P.B. Jr. 1988. *National List of Plant Species that Occur in Wetlands: Intermountain Region (Region 8).* Prepared for National Wetland Inventory, U.S. Fish and Wildlife Service.
- US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region. May 2010.





Appendix A. Wetland Data Sheets

Project Site:	PPSL					Ci	ty/County:		/Clea	r Creek	Sampling [Date:	09/1	8/13	
Applicant/Owner:	CDOT Re	gion 1							:	State: <u>CO</u>	Sampling F	Point:	WL	_1	
Investigator(s):	Beazley/E	Brownlee/T	ordonato					Se	ection, -	Township, Rang	ge: <u>T3S R7</u>	4W Sect	ion 27		
Landform (hillslope, ter	rrace, etc.)	: pond	and related	draina	ge	Local relie	ef (concave	e, conve	x, none	e): <u>concave</u>		Slop	e (%):	<u>1</u>	
Subregion (LRR):	<u>E</u>			Lat	:: <u>39*45'35.10"</u>	N		Long:	<u>105*3</u>	9'07.65 W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:	PEM			
Are climatic / hydrologi	c conditior	ns on the si	te typical fo	r this t	ime of year?	Yes	\boxtimes	No		(If no, explain i	n Remarks.)				
Are Vegetation \Box ,	Soil	□, or ⊢	lydrology	□,	significantly dist	turbed?	Are "No	rmal Cir	cumsta	ances" present?)	Yes	\boxtimes	No	
Are Vegetation	Soil	□, or ⊢	lydrology	□,	naturally proble	matic?	(If need	ed, expl	ain any	/ answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Remarks: Wetland is located in US 40/I-70 interchange	aore. V	/ater i	ponds	and th	nen drains to Clear Creek. Due to the placement of boulders	alona th	e per	meter	of

the wetland is located in US 40/1-70 interchange gore. Water ponds and then drains to Clear Creek. Due to the placement of boulders along the perimeter of the wetland, this wetland was likely created during roadway construction.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>Populus angustifolia</u>	25	ves	FACW	Number of Dominant Species	
2. <u>Betula occidentalis</u>	<u>25</u>	<u>ves</u>	FACW	That Are OBL, FACW, or FAC:	(A)
3				Total Number of Dominant	(P)
4				Species Across All Strata: <u>3</u>	(В)
50% = <u>25</u> , 20% = <u>10</u>	<u>50</u>	= Total Cove	r	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size:)				That Are OBL, FACW, or FAC:	(A/B)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply	<u>/ by:</u>
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
50% =, 20% =		= Total Cove	r	FACU species x4 =	
Herb Stratum (Plot size:)				UPL species x5 =	
1. <u>Glyceria grandis</u>	<u>85</u>	<u>ves</u>	<u>OBL</u>	Column Totals: (A)	(B)
2. <u>Carex utriculata</u>	<u>5</u>	no	OBL	Prevalence Index = B/A =	
3. <u>Hippuris vulgaris</u>	<u>5</u>	<u>no</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators:	
4. Juncus effusus	<u>1</u>	<u>no</u>	FACW	1 – Rapid Test for Hydrophytic Vegetation	
5				2 - Dominance Test is >50%	
6				□ 3 - Prevalence Index is $\leq 3.0^1$	
7				- 4 - Morphological Adaptations ¹ (Provide support	ing
8				data in Remarks or on a separate sheet)	0
9				5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11					
50% = <u>48</u> , 20% = <u>19.2</u>	<u>96</u>	= Total Cove	٢	¹ Indicators of hydric soil and wetland hydrology must	
Woody Vine Stratum (Plot size:)					
1					
2				Hydrophytic	
50% =, 20% =		= Total Cove	r	Vegetation Yes 🖂	No 🗌
% Bare Ground in Herb Stratum <u>10</u>					
Remarks:					

C	n	П	

SOIL										S	Sampling	Point: PP	SL WL	<u>1</u>	
Profile Desc	ription: (Describe to	the depth	needed to d	locumer	nt the indicat	or or conf	firm the absenc	ice of	f indicato	ors.)					
Depth	Matrix														
(inches)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	_	Texture				Remarks	6	
<u>0-14</u>	<u>10YR 2/1</u>	<u>97</u>	<u>10YR 4/</u>	<u>3</u>	<u>M</u>		sandy loa	<u>am</u>	homog	enous thro	oughout				
										-					
										-					
										-					
										-					
										-					
										-					
										-					
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix															
Hydric Soil	ndicators: (Applicab	le to all Ll	RRs, unless	otherwi	se noted.)				Indic	ators	for Pro	blematic	Hydric S	oils ³ :	
Histos	ol (A1)			Sandy	/ Redox (S5)					2 c	m Muck	(A10)			
Histic I	Epipedon (A2)			Stripp	ed Matrix (S6)				Re	d Parent	Material (TF2)		
Black I	Histic (A3)			Loamy	y Mucky Mine	ral (F1) (e :	xcept MLRA 1)	Very Shallow Dark Surface (TF12)							
Hydrog	gen Sulfide (A4)			Loamy	y Gleyed Matr	ix (F2)				Oth	ner (Expl	ain in Rem	narks)		
Deplet	ed Below Dark Surfac	e (A11)		Deplet	ted Matrix (F3	3)									
Thick I	Dark Surface (A12)		\boxtimes	Redox	c Dark Surface	e (F6)									
□ Sandy	Mucky Mineral (S1)			Deplet	ted Dark Surf	ace (F7)			³ India	cators	of hydrolo	ophytic veg	getation a	and +	
□ Sandy	Gleyed Matrix (S4)			Redox	Contractions	(F8)			ur	nless	disturbe	d or proble	e presen matic.	ι,	
Restrictive	_ayer (if present):														
Туре:															
Depth (inche	s):						Hydric Soils	s Pres	sent?			Yes	\boxtimes	No	
Remarks:	Dark homogenous so	oil. Sand co	ontent may at	tributabl	e to roadway	runoff.									

HYDROLOGY

Wetl	and Hydrology Indica	tors:													
Primary Indicators (minimum of one required; check all that apply)									Sec	ondary Indicators (2 or r	more requir	red)			
	Surface Water (A1)					Water-Stained Leaves (B9)				Water-Stained Leaves (B9)					
\boxtimes	High Water Table (A2	2)				(except MLRA 1, 2, 4A, and 4B)				(MLRA 1, 2, 4A, and 4B)					
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	10)				
Water Marks (B1)						Aquatic Invertebrates	s (B13)			Dry-Season Water Ta	ble (C2)				
	Sediment Deposits (E	32)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)		
	Drift Deposits (B3)					Oxidized Rhizospher	es along Living Roots	s (C3)		Geomorphic Position	(D2)				
	Algal Mat or Crust (B	4)				Presence of Reduced	d Iron (C4)			Shallow Aquitard (D3)	1				
Iron Deposits (B5)						Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5)				
Surface Soil Cracks (B6)						Stunted or Stresses Plants (D1) (LRR A)				Raised Ant Mounds (D6) (LRR A)					
	Inundation Visible on Aerial Imagery (B7)					Other (Explain in Remarks)				Frost-Heave Hummoo	:ks (D7)				
	Sparsely Vegetated (Concave \$	Surface	(B8)											
Field	Observations:														
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):									
Wate	er Table Present?	Yes	\boxtimes	No		Depth (inches):	<u>3</u>								
Satu (inclu	ration Present? Ides capillary fringe)	Yes		No		Depth (inches):		Wetlar	nd Hy	drology Present?	Yes	\boxtimes	No		
Desc	ribe Recorded Data (st	ream gau	ige, mo	nitoring	well, a	erial photos, previous i	nspections), if availal	ble:							
Rem	arks: Surface wate	r present	immed	iately a	djacent	to wetland and throug	out the pond.								

Project Site:	PPSL					Cit	y/County:		/Clea	r Creek	Sampling D	Date:	<u>09/</u>	18/13	
Applicant/Owner:	CDOT Re	egion 1								State: <u>CO</u>	Sampling F	Point:	PPS	SL_UL	1
Investigator(s):	Beazley/E	Brownle	ee/Tordonato					Se	ection,	Township, Rang	ge: <u>T3S R7</u>	4W Sect	ion 27		
Landform (hillslope, ter	race, etc.)): <u>p</u>	ond and related	draina	ge	Local relie	f (concave	e, conve	ex, non	e): <u>concave</u>		Slop	e (%):	<u>1</u>	
Subregion (LRR):	<u>E</u>			Lat	39*45'34.86"	N		Long:	<u>105*3</u>	9'07.44 W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:	PEM			
Are climatic / hydrologi	c conditio	ns on tl	he site typical fo	r this ti	me of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□,	significantly dist	turbed?	Are "No	rmal Ci	rcumsta	ances" present?		Yes	\boxtimes	No	
Are Vegetation	Soil	□,	or Hydrology	□,	naturally proble	matic?	(If need	ed, expl	lain any	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	No	\boxtimes				
Hydric Soil Present?	Yes	No	\boxtimes	Is the Sampled Area within a Wetland?	Yes	No	\boxtimes
Wetland Hydrology Present?	Yes	No	\boxtimes				
Remarks:							

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1				Number of Dominant Species	(0)
2				That Are OBL, FACW, or FAC:	(A)
3				Total Number of Dominant	(D)
4				Species Across All Strata:	(Б)
50% =, 20% =		= Total Cove	r	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size:)				That Are OBL, FACW, or FAC:	(A/D)
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x1 =	_
4				FACW species x2 =	-
5				FAC species x3 =	-
50% =, 20% =		= Total Cove	r	FACU species $\underline{40}$ $x4 = \underline{160}$	
Herb Stratum (Plot size:)				UPL species <u>40</u> x5 = <u>255</u>	
1. <u>Medicago sativa</u>	<u>40</u>	<u>ves</u>	<u>UPL</u>	Column Totals: <u>80</u> (A) <u>415</u> (B)
2. <u>Pascopyrum smithii</u>	<u>40</u>	yes	FACU	Prevalence Index = $B/A = 5.2$	
3. <u>Thermopsis montana</u>	<u>1</u>	no	FAC	Hydrophytic Vegetation Indicators:	
4. Artemisia filifolia	<u>1</u>	no	<u>NI</u>	1 – Rapid Test for Hydrophytic Vegetation	
5. <u>Bromus inermis</u>	<u>1</u>	<u>no</u>	FAC	□ 2 - Dominance Test is >50%	
6				□ 3 - Prevalence Index is $\leq 3.0^1$	
7				- 4 - Morphological Adaptations ¹ (Provide supporting	
8				data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11					
50% = <u>41.5</u> , 20% = <u>16.6</u>	<u>83</u>	= Total Cove	r	¹ Indicators of hydric soil and wetland hydrology must	
Woody Vine Stratum (Plot size:)					
1					
2				Hydrophytic	_
50% =, 20% =		= Total Cove	r	Vegetation Yes I No	
% Bare Ground in Herb Stratum 25				Tresent:	
Remarks:					

Depth	Matrix			Redox F	eatures			
(inches)	Color (moist)	%	Color (mois	t) %	Type ¹	Loc ²	Texture	Remarks
<u>0-10</u>	<u>10YR 4/2</u>	100	<u>n/a</u>	<u> </u>	<u>-</u>	-	sandy loam	<u> </u>
<u>10-14</u>	<u>10YR 5/3</u>	<u>100</u>	<u>n/a</u>	=	=	=	sand	Unconsolidate gravel presen
Type: C= C	oncentration, D=Dep	letion, RM=I	Reduced Matrix	, CS=Covered or	Coated Sand G	Grains. ² L	ocation: PL=Po	ore Lining, M=Matrix
□ Histos	ol (A1)			Sandv Redox (S5	5)			2 cm Muck (A10)
Histic	Epipedon (A2)			Stripped Matrix (S	, 56)			Red Parent Material (TF2)
Black	Histic (A3)			Loamy Mucky Mir	neral (F1) (exce	ept MLRA 1)		Very Shallow Dark Surface (TF1
Hydrog	gen Sulfide (A4)			Loamy Gleyed Ma	atrix (F2)			Other (Explain in Remarks)
Deplet	ed Below Dark Surfa	ace (A11)		Depleted Matrix (F3)			

Redox Dark Surface (F6)

Redox Depressions (F8)

Depleted Dark Surface (F7)

Soils possible distrubed by routine mainetnance activity.

HYDROLOGY

Type: Depth (inches):

Remarks:

Thick Dark Surface (A12)

Sandy Mucky Mineral (S1)

Sandy Gleyed Matrix (S4)

Restrictive Layer (if present):

Wetl	and Hydrology Indicate	ors:										
Prima	ary Indicators (minimum	of one re	equired	check	all that	Se	condary Indicators (2 or	more require	ed)			
	Surface Water (A1)					Water-Stained Leaves (B9)		Water-Stained Leave	s (B9)			
	High Water Table (A2)					(except MLRA 1, 2, 4A, and 4B)		(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)		Drainage Patterns (B	10)			
	Water Marks (B1)					Dry-Season Water Ta	able (C2)					
	Sediment Deposits (B2	2)			Saturation Visible on Aerial Imagery (C9)							
	Drift Deposits (B3)				3) 🗆	Geomorphic Position	(D2)					
	Algal Mat or Crust (B4))			Shallow Aquitard (D3))						
	Iron Deposits (B5)				FAC-Neutral Test (D5	5)						
	Surface Soil Cracks (B	6)			Raised Ant Mounds (I	D6) (LRR A))					
	Inundation Visible on A	Aerial Ima	agery (E	37)		Other (Explain in Remarks)		Frost-Heave Hummoo	cks (D7)			
	Sparsely Vegetated Co	oncave S	Surface	(B8)								
Field	Observations:											
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):						
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):						
Satur (inclu	ation Present?	Yes		No	\boxtimes	Depth (inches): We	etland Hy	drology Present?	Yes		o 🛛	
Desc	ribe Recorded Data (stre	eam gau	ge, mor	nitoring	well, a	erial photos, previous inspections), if available:						
Rem	arks: .											
												1

³Indicators of hydrophytic vegetation and wetland hydrology must be present,

Yes

No

 \boxtimes

unless disturbed or problematic.

Hydric Soils Present?

Project Site:	PPSL					City	/County:		/Clear	Creek	Sampling [Date:	<u>09/1</u>	8/13	
Applicant/Owner:	CDOT R	egion 1	<u>.</u>						S	State: <u>CO</u>	Sampling F	oint:	PPS	SL_WI	2
Investigator(s):	Beazley/	Brownle	ee/Tordonato					Se	ection, T	ownship, Rang	ge: <u>T3S R7</u>	4W Sect	ion 26		
Landform (hillslope, te	rrace, etc.): <u>d</u>	epression		L	ocal relief	(concave	e, conve	ex, none): <u>concave</u>		Slop	e (%):	<u>1</u>	
Subregion (LRR):	<u>E</u>			Lat	<u>39*45'50.12" N</u>			Long:	<u>105*38</u>	3'02.64 W		Datum:	NAD 1	<u>983</u>	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:	PEM			
Are climatic / hydrolog	ic conditio	ns on t	he site typical fo	or this ti	me of year?	Yes	\bowtie	No	\Box ((If no, explain in	n Remarks.)				
Are Vegetation ,	Soil	□,	or Hydrology	□, :	significantly distur	bed?	Are "No	rmal Cir	rcumsta	nces" present?		Yes		No	\boxtimes
Are Vegetation ,	Soil	⊠,	or Hydrology	□ , ı	naturally problema	atic?	(If need	ed, expl	lain any	answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes		No	\boxtimes	Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes		No	\boxtimes					
Remarks: Wetland was problematic due to roadway pro	ximity a	and as	socia	ted rur	off, which includes traction sands from snow removal operation	ions. Er	ntire so	oil pro	file

marks: Wetland was problematic due to roadway proximity and associated runoff, which includes traction sands from snow removal operations. Entire soil profile was composed of traction sand, so it holds little moisture. The presence of hydrophytic vegetation indicate adequate wetland hydrology.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size:)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. Populus angustifolia	40	ves	FACW	Number of Dominant Species 4	(A)
2				That Are OBL, FACW, or FAC:	(, ,
3				Total Number of Dominant 4	(B)
4				Species Across All Strata:	(2)
50% = <u>20</u> , 20% = <u>8</u>	<u>40</u>	= Total Cover	ſ	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size:)				That Are OBL, FACW, or FAC:	(, (2)
1. <u>Salix monticala</u>	<u>10</u>	yes	<u>OBL</u>	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cover	r	FACU species x4 =	.
Herb Stratum (Plot size:)				UPL species x5 =	
1. <u>Carex aquatilis</u>	<u>40</u>	<u>ves</u>	<u>OBL</u>	Column Totals:(A)	(B)
2. <u>Agrostis gigantea</u>	<u>40</u>	yes	FAC	Prevalence Index = B/A =	
3. Juncus articus	<u>10</u>	no	<u>NI</u>	Hydrophytic Vegetation Indicators:	
4. <u>Dactylis glomerata</u>	<u>1</u>	no	FACU	1 – Rapid Test for Hydrophytic Vegetation	
5				☑ 2 - Dominance Test is >50%	
6				\Box 3 - Prevalence Index is $\leq 3.0^1$	
7				4 - Morphological Adaptations ¹ (Provide supporting	
8				data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)	
11					
50% = <u>45</u> , 20% = <u>18</u>	<u>91</u>	= Total Cover	r	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size:)					
1					
2				Hydrophytic	_
50% =, 20% =		= Total Cover	r	Vegetation fes 🖂 No	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks:					

S	n	I	I
- U	J		L

SOIL									Samplin	g Point: <u>PP</u>	<u>SL WL :</u>	2	
Profil	e Descr	iption: (Describe t	o the depth	n needed to d	ocument the ind	licator or confir	m the absend	ce of indicato	ors.)				
De	epth	Matrix			Redox	Features							
(inche	es)	Color (moist)	%	Color (mo	oist) %	Type ¹	Loc ²	Texture			Remarks	;	
<u>0</u> -	-12	<u>10YR6/3</u>	100	<u>n/a</u>			-	sand	roadw	ay sand			
										-			
										-			
										-			
						. <u></u>				-			
						<u> </u>				-			
						<u> </u>				-			
						. <u></u>				-			
¹ Type	: C= Co	ncentration, D=Dep	letion, RM=	Reduced Matr	ix, CS=Covered of	or Coated Sand	Grains. ² l	Location: PL=	Pore Lining,	M=Matrix			
Hydri	c Soil Ir	dicators: (Applica	ble to all L	RRs, unless	otherwise noted	.)		Indic	ators for Pr	oblematic H	lydric S	oils ³ :	
	Histosol	(A1)			Sandy Redox (S5)			2 cm Mucl	k (A10)			
	Histic E	pipedon (A2)			Stripped Matrix	(S6)			Red Parer	nt Material (1	F2)		
	Black H	istic (A3)			Loamy Mucky M	Mineral (F1) (exc	ept MLRA 1)		Very Shall	ow Dark Su	rface (TF	12)	
	Hydroge	en Sulfide (A4)			Loamy Gleyed	Matrix (F2)		\boxtimes	Other (Exp	olain in Rem	arks)		
	Deplete	d Below Dark Surfa	ce (A11)		Depleted Matrix	(F3)							
	Thick D	ark Surface (A12)			Redox Dark Su	rface (F6)							
	Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F7)		³ Indic	ators of hyd	rophytic veg	etation a	ind	
	Sandy C	Bleyed Matrix (S4)			Redox Depress	ions (F8)		ur	less disturbe	ed or proble	matic.	,	
Restr	ictive La	ayer (if present):											
Type:													
Depth	(inches):					Hydric Soils	Present?		Yes		No	\boxtimes
Rema	ırks:	Soil is moist, but no	ot saturated.	Atypical situa	tion due to roadw	/ay adjacency ar	nd the presenc	ce of traction s	and through	out the soil	profile.		

HYDROLOGY

Wetl	and Hydrology Indicat	ors:											
Prim	ary Indicators (minimum	n of one r	equired	; check	all that		Sec	ondary Indicators (2 or n	nore requir	ed)			
	Surface Water (A1)					Water-Stained Leaves (B9)	• -		Water-Stained Leaves	s (B9)			
	High Water Table (A2)				(except MLRA 1, 2, 4A, and 4B)			(MLRA 1, 2, 4A, and 4	4B)			
	Saturation (A3)					Salt Crust (B11)		\boxtimes	Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Tal	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)			Saturation Visible on Aerial Imagery (C9)				
	Drift Deposits (B3)					Oxidized Rhizospheres along Living Roots (C3	3)	\boxtimes	Geomorphic Position ((D2)			
	Algal Mat or Crust (B4	1)				Presence of Reduced Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)					Recent Iron Reduction in Tilled Soils (C6)			FAC-Neutral Test (D5))			
	Surface Soil Cracks (B6)			Raised Ant Mounds (D	06) (LRR A)						
	Inundation Visible on	Aerial Im	agery (E	37)		Other (Explain in Remarks)			Frost-Heave Hummoc	ks (D7)			
	Sparsely Vegetated C	concave S	Surface	(B8)									
Field	Observations:												
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):							
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):							
Satu (inclu	ration Present? Ides capillary fringe)	Yes		No	\boxtimes	Depth (inches): We	etlan	d Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (st	ream gau	ge, mor	nitoring	well, a	erial photos, previous inspections), if available:							
Rem	Remarks: Hydrology results from the presence of a nearby culvert and roadway runoff. This is a depressional wetland located at the base of a fill slope associated with I-70.												

Project Site:	PPS	L				City	/County:	. <u> </u>	/Clea	ar Creek	Sampling D	ate:	<u>09/1</u>	17/13	
Applicant/Owner:	CDC	T Regior	<u>11</u>							State: CO	Sampling P	oint:	PPS	SL_UL	2
Investigator(s):	Beaz	ley/Brow	nlee/Tordonato					Se	ection,	Township, Rang	ge: <u>T3S R7</u>	4W Sect	ion 27		
Landform (hillslope, te	errace,	etc.):	depression		L	ocal relief	(concave	, conve	x, non	e): <u>concave</u>		Slop	e (%):	<u>1</u>	
Subregion (LRR):	<u>E</u>			Lat:	<u>39*45'50.17" N</u>			Long:	<u>105*3</u>	8'02.88 W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:	PEM			
Are climatic / hydrolog	gic con	ditions or	n the site typical fo	or this tir	ne of year?	Yes	\boxtimes	No		(If no, explain in	n Remarks.)				
Are Vegetation	, So	il ⊠,	or Hydrology	□, s	ignificantly disturl	bed?	Are "Nor	mal Cir	cumsta	ances" present?		Yes		No	\boxtimes
Are Vegetation	, So	il □,	or Hydrology	□, r	aturally problema	atic?	(If neede	ed, expl	ain ang	y answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes		No	\boxtimes					
Hydric Soil Present?	Yes		No	\boxtimes	Is the Sampled Area within a Wetland?	Yes		No	\boxtimes
Wetland Hydrology Present?	Yes		No	\boxtimes					
Remarks: Soil is problematic due to roadway proxin	nity and	lasso	ciate	d runc	off, which includes traction sands from snow removal ope	eration	s.		

VEGETATION – Use scientific names of plants Absolute Dominant Indicator Tree Stratum (Plot size: ____) **Dominance Test Worksheet:** % Cover Species? Status 1. Number of Dominant Species 0 (A) That Are OBL, FACW, or FAC: 2. ____ 3. Total Number of Dominant (B) 4 Species Across All Strata: 4. <u>4</u> 50% = ____, 20% = ____ = Total Cover Percent of Dominant Species (A/B) 0 That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: ____) 1. Artemisia filifolia 30 UPL Prevalence Index worksheet: yes 2. ____ Total % Cover of: Multiply by: 3. _____ OBL species x1 = 4. FACW species x2 = FAC species 5. x3 = 50% = ____, 20% = ____ = Total Cover FACU species x4 = Herb Stratum (Plot size: UPL species x5 =) <u>40</u> FAC 1. Elymus repens <u>ves</u> __ (A) (B) Column Totals: 2. Bromus inermis 30 FAC Prevalence Index = B/A = yes 3. Medicago sativa <u>20</u> UPL Hydrophytic Vegetation Indicators: <u>yes</u> 4. □ 1 – Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 5. _____ _____ 6. 3 - Prevalence Index is <3.01 7. 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 8. 9. 5 - Wetland Non-Vascular Plants¹ 10. _____ Problematic Hydrophytic Vegetation¹ (Explain) 11. ____ ¹Indicators of hydric soil and wetland hydrology must 50% = <u>45</u>, 20% = <u>18</u> 90 = Total Cover be present, unless disturbed or problematic. Woody Vine Stratum (Plot size:) 1. ____ Hydrophytic 2. Vegetation Yes No \boxtimes 50% = , 20% = = Total Cover Present? % Bare Ground in Herb Stratum 10

Remarks:

Project Site SL

Pro	ject	Site:	P	Ρ	S
			_		

SOI	IL								Sampling Point: PPS	<u>SL UL 2</u>		
Prof	file Descri	iption: (Describe t	o the depth	needed to d	ocument the inc	licator or confi	irm the absence	e of indicators.	.)			
C	Depth	Matrix			Redox	Features						
(inc	hes)	Color (moist)	%	Color (mo	ist) %	Type ¹	Loc ²	Texture	F	Remarks		
9	0-14	<u>10YR 5/4</u>	100	<u>n/a</u>		=		sandy loam	roadway sediment	t present		
_												
_												
_												
_												
_												
_												
_												
¹ Typ	e: C= Cor	ncentration, D=Dep	letion, RM=R	educed Matr	ix, CS=Covered	or Coated Sand	l Grains. ² Lo	ocation: PL=Po	re Lining, M=Matrix			
Hyd	ric Soil In	dicators: (Applica	able to all LR	Rs, unless o	otherwise noted	.)		Indicato	ors for Problematic H	lydric S	oils ³ :	
	Histosol	(A1)			Sandy Redox (S5)		□ 2	2 cm Muck (A10)			
	Histic Ep	pipedon (A2)			Stripped Matrix	. (S6)		D F	Red Parent Material (T	⁻ F2)		
	Black Hi	istic (A3)			Loamy Mucky I	Vineral (F1) (ex	cept MLRA 1)		/ery Shallow Dark Sur	rface (TF	12)	
	Hydroge	en Sulfide (A4)			Loamy Gleyed	Matrix (F2)			Other (Explain in Rem	arks)		
	Depletee	d Below Dark Surfa	ace (A11)		Depleted Matrix	к (F3)						
	Thick Da	ark Surface (A12)			Redox Dark Su	rface (F6)						
	Sandy N	lucky Mineral (S1)			Depleted Dark	Surface (F7)		³ Indicato	ors of hydrophytic veg	etation a	nd	
	Sandy G	Bleyed Matrix (S4)			Redox Depress	sions (F8)		unles	and hydrology must be ss disturbed or probler	natic.	,	
Res	trictive La	ayer (if present):										
Туре	e:											
Dept	th (inches)):					Hydric Soils P	Present?	Yes		No	\boxtimes
Rem	narks:											

HYDROLOGY

Wetla	/etland Hydrology Indicators:														
Prima	ary Indicators (minimum	of one re	equired	; check	all that		Sec	ondary Indicators (2 or r	nore requir	ed)					
	Surface Water (A1)					Water-Stained Leaves (B9)			Water-Stained Leaves	s (B9)					
	High Water Table (A2)				(except MLRA 1, 2, 4A, and 4B)			(MLRA 1, 2, 4A, and	4B)					
	Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B1	0)					
	Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Table (C2)						
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)			Saturation Visible on A	Aerial Imag) C2) I Imagery (C9) LRR A) D7)				
	Drift Deposits (B3)					Oxidized Rhizospheres along Living Roots	s (C3)		Geomorphic Position (D2)						
	Algal Mat or Crust (B4] Shallow Aquitard (D3)												
	Iron Deposits (B5)		FAC-Neutral Test (D5)											
	Surface Soil Cracks (B			Raised Ant Mounds (D	06) (LRR A)									
	Inundation Visible on			Frost-Heave Hummoc	ks (D7)										
	Sparsely Vegetated C	oncave S	Surface	(B8)											
Field	Observations:														
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):									
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):									
Satur (inclu	ation Present?	Yes		No	\boxtimes	Depth (inches):	Wetlan	nd Hye	drology Present?	Yes		No			
Desc	ribe Recorded Data (str	eam gau	ge, mor	nitoring	well, a	erial photos, previous inspections), if availab	ble:								
Rem	arks: .														

Project Site:	PPSL					City	/County:		/Clear	Creek	Sampling [Date:	<u>09/1</u>	8/13	
Applicant/Owner:	CDOT Re	egion 1	-						S	tate: <u>CO</u>	Sampling F	Point:	PPS	SL_WI	3
Investigator(s):	Beazley/	Brownle	ee/Tordonato					Se	ction, T	ownship, Rar	ige: T3S R7	3W Sect	ion 36		
Landform (hillslope, te	rrace, etc.): <u>te</u>	errace		L	ocal relief	(concave	, conve	x, none)	: <u>convex</u>		Slop	e (%):	<u>3</u>	
Subregion (LRR):	<u>E</u>			Lat:	<u>39*44'24.98" N</u>			Long:	105*30	.24" W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI clas	ssification:	PEM			
Are climatic / hydrolog	ic conditio	ns on t	he site typical fo	or this ti	me of year?	Yes	\bowtie	No	□ (I	lf no, explain	in Remarks.)				
Are Vegetation ,	Soil	□,	or Hydrology	□, :	significantly disturl	bed?	Are "Nor	mal Cir	cumstar	nces" present	?	Yes	\boxtimes	No	
Are Vegetation ,	Soil	□,	or Hydrology	□, ı	naturally problema	atic?	(If neede	d, expl	ain any	answers in R	emarks.)				

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

Hydrophytic Vegetation Present?		\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Remarks: Distinct boundary between wetland and up	bland (i	no up	land o	data s	heet)				

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>15</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:		
1				Number of Dominant Species	2	(A)
2				That Are OBL, FACW, or FAC:	<u> </u>	(A)
3				Total Number of Dominant	2	(B)
4				Species Across All Strata:	<u>z</u>	(D)
50% =, 20% =		= Total Cove		Percent of Dominant Species	100	(A/R)
Sapling/Shrub Stratum (Plot size: 9)				That Are OBL, FACW, or FAC:	100	(700)
1. <u>Salix irrorata</u>	<u>10</u>	<u>yes</u>	FACW	Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3	<u> </u>			OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot size: 9)				UPL species	x5 =	
1. <u>Calamagrostis canadensis</u>	<u>70</u>	<u>ves</u>	FACW	Column Totals: (A)		(B)
2. <u>Agrostis gigantea</u>	<u>1</u>	<u>no</u>	FAC	Prevalence Index = B/A =		
3. <u>Carex utriculata</u>	<u>1</u>	<u>no</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators:		
4				I – Rapid Test for Hydrophytic Vegetat	ion	
5				2 - Dominance Test is >50%		
6				\Box 3 - Prevalence Index is $\leq 3.0^1$		
7				4 - Morphological Adaptations ¹ (Provide	e supporting	
8				data in Remarks or on a separate sh	neet)	
9				5 - Wetland Non-Vascular Plants ¹		
10				Problematic Hydrophytic Vegetation ¹ (E	Explain)	
11				1		
50% = <u>36</u> , 20% = <u>14</u>	<u>72</u>	= Total Cove	-	Indicators of hydric soil and wetland hydrologic be present, unless disturbed or problematic.	gy must	
Woody Vine Stratum (Plot size:)						
1						
2				Hydrophytic		_
50% =, 20% =		= Total Cove	r	Vegetation Yes 🖂	No	
% Bare Ground in Herb Stratum 0						
Remarks:						

SOI	L								Sampling Point: PPSL WL 3	
Profi	ile Descr	ription: (Describe t	o the depth	n needed to de	ocument the indi	icator or confir	m the absence	e of indicato	rs.)	
D	epth	Matrix			Redox	Features				
(inch	nes)	Color (moist)	%	Color (mo	ist) %	Type ¹	Loc ²	Texture	Remarks	
	1-3	<u>10YR 4/3</u>	100	<u>n/a</u>	<u> </u>	-	-	sandy loa		
3	3-14	<u>10YR 3/2</u>	<u>95</u>	10YR 4/4	<u>1 5</u>	<u>C</u>	M	sandy cla	ay sandy clay loam	
_										
¹ Typ	e: C= Co	ncentration, D=Dep	letion, RM=	Reduced Matri	x, CS=Covered o	r Coated Sand	Grains. ² Lo	ocation: PL=I	Pore Lining, M=Matrix	
Hydr	ric Soil Ir	ndicators: (Applica	ble to all L	RRs, unless c	otherwise noted.))		Indica	ators for Problematic Hydric Soils ³ :	
	Histoso	I (A1)			Sandy Redox (S	5)			2 cm Muck (A10)	
	Histic E	pipedon (A2)			Stripped Matrix	(S6)			Red Parent Material (TF2)	
	Black H	listic (A3)			Loamy Mucky M	lineral (F1) (exc	ept MLRA 1)		Very Shallow Dark Surface (TF12)	
	Hydrog	en Sulfide (A4)			Loamy Gleyed N	Matrix (F2)		\boxtimes	Other (Explain in Remarks)	
	Deplete	d Below Dark Surfa	ce (A11)		Depleted Matrix	(F3)				
	Thick D	ark Surface (A12)		\boxtimes	Redox Dark Sur	face (F6)				
	Sandy I	Mucky Mineral (S1)			Depleted Dark S	Surface (F7)		³ Indic	ators of hydrophytic vegetation and	
	Sandy (Gleyed Matrix (S4)			Redox Depressi	ons (F8)		we un	less disturbed or problematic.	
Rest	rictive L	ayer (if present):								
Туре):									
Dept	h (inches	s):					Hydric Soils P	Present?	Yes 🛛 No 🗌]
Rem	arks:									

HYDROLOGY

Wetla	and Hydrology Indicat	ors:												
Prima	ary Indicators (minimum	of one r	equired	; check	all that		Sec	ondary Indicators (2 or r	nore requir	ed)				
	Surface Water (A1)				\boxtimes	Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2))				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
\boxtimes	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
\boxtimes	Water Marks (B1)					Aquatic Invertebrates	; (B13)			Dry-Season Water Ta	ble (C2)			
\boxtimes	Sediment Deposits (B	2)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3) Oxidized Rhizospheres along Living								oots (C3)					
	Algal Mat or Crust (B4) Image: Crust (B4) Presence of Reduced Iron (C4)									☐ Shallow Aquitard (D3)				
	Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6)									FAC-Neutral Test (D5)				
	Surface Soil Cracks (E			Raised Ant Mounds (D	06) (LRR A)								
	Inundation Visible on	Aerial Ima			Frost-Heave Hummoc	ks (D7)								
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):								
Satur (inclu	ation Present? des capillary fringe)	Yes	\boxtimes	No		Depth (inches):	<u>13</u>	Wetlar	nd Hye	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous i	nspections), if availab	ole:						
Rem	arks: Adjacent to Cl	lear Cree	k. Som	e satura	ation w	as present, but hydrolo	gy generally provided	d by over	rbank	flow.				
l.														

Project Site:	PPSL					City/	County:		/Clear	Creek	Sampling D	Date:	10/0)2/13	
Applicant/Owner:	CDOT Re	egion 1	-						S	State: <u>CO</u>	Sampling F	oint:	PPS	SL_W	4
Investigator(s):	Beazley/I	Phillips	/Chandler					Se	ection, T	ownship, Rang	ge: <u>T3S R7</u>	3W Sect	ion 35		
Landform (hillslope, te	rrace, etc.): <u>te</u>	errace		Lo	ocal relief	(concave	, conve	x, none): <u>convex</u>		Slop	oe (%):	<u>3</u>	
Subregion (LRR):	<u>E</u>			Lat	<u>39*44'25.24" N</u>			Long:	<u>105*31</u>	.16.41" W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:				
Are climatic / hydrolog	ic conditio	ns on t	he site typical fo	or this ti	me of year?	Yes	\boxtimes	No	□ (If no, explain ir	n Remarks.)				
Are Vegetation ,	Soil	□,	or Hydrology	□, :	significantly disturb	ped?	Are "Nor	mal Cir	cumsta	nces" present?		Yes	\boxtimes	No	
Are Vegetation	Soil	□,	or Hydrology	□ , ı	naturally problema	itic?	(If neede	ed, expl	ain any	answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No					
Hydric Soil Present?	Yes	\boxtimes	No	Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No					
Remarks:								

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15)	Absolute <u>% Cover</u>	Species?	Indicator Status	Dominance Test Worksheet:			
1				Number of Dominant Species	2		(A)
2				That Are OBL, FACW, or FAC:	-		(,,)
3				Total Number of Dominant	4		(B)
4				Species Across All Strata:	-		()
50% =, 20% =		= Total Cove	r	Percent of Dominant Species	50		(A/B)
Sapling/Shrub Stratum (Plot size: 9)				That Are OBL, FACW, or FAC:			()
1. <u>Betula occidentalis</u>	<u>5</u>	<u>yes</u>	FACW	Prevalence Index worksheet:			
2				Total % Cover of:	Multiply	by:	
3				OBL species <u>0</u>	x1 =	<u>0</u>	
4				FACW species 25	x2 =	<u>50</u>	
5				FAC species	x3 =		
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cove	r	FACU species 50	x4 =	200	
<u>Herb Stratum (</u> Plot size: <u>9</u>)				UPL species	x5 =		
1. <u>Eleocharis acicularis</u>	<u>20</u>	<u>yes</u>	FACW	Column Totals: <u>75</u> (A)		<u>250</u> (B)	
2. <u>Pascopyrum smithii</u>	<u>15</u>	<u>yes</u>	FACU	Prevalence Index = B/A =	<u>3.33</u>		
3. <u>Poa pratensis</u>	<u>30</u>	<u>ves</u>	FACU	Hydrophytic Vegetation Indicators:			
4. <u>Bromus ciliatus</u>	<u>5</u>	<u>no</u>	FACU	1 – Rapid Test for Hydrophytic Vegetation	on		
5				□ 2 - Dominance Test is >50%			
6				□ 3 - Prevalence Index is $\leq 3.0^1$			
7				4 - Morphological Adaptations ¹ (Provide	supportir	าต	
8				data in Remarks or on a separate sh	eet)	5	
9				5 - Wetland Non-Vascular Plants ¹			
10				Problematic Hydrophytic Vegetation ¹ (E:	xplain)		
11				1			
50% = <u>35</u> , 20% = <u>14</u>	<u>70</u>	= Total Cove	r	Indicators of hydric soil and wetland hydrolog	jy must		
Woody Vine Stratum (Plot size:)							
1							
2				Hydrophytic			_
50% =, 20% =		= Total Cove	r	Vegetation Yes 🖂 Present?		NO	
% Bare Ground in Herb Stratum 30							
Remarks: Wetland is located adjacent to Cle of the species present are commonly us	ear Creek on ed in reveget	a boulder lined ation efforts; th	fill slope tha erefore affect	t was constructed to accommodate past roadwa ting the plant diversity in this location.	y improve	ements. N	lany

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth Matrix Redox Features													
(inches) Color (moist) % Color (moist) % Type ¹ Loc ² Texture Remarks													
0-1 2.5YR 3/2 100 n/a sandy loam sand and gravel present													
<u>1-4 2.5YR 3/3 50 10YR 5/8 50 CS M sandy loam</u>													
<u>4-6 10YR 2/2 50 10YR 5/6 50 CS M Silt Ioam</u>													
6-12 10YR 3/2 70 10YR 4/4 30 CS M Silt loam													
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix													
Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :													
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Image: Histosol (A1) Image: Sandy Redox (S5) Image: Sandy Redox (A10)													
Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2)													
Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12)													
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks)													
Depleted Below Dark Surface (A11) Depleted Matrix (F3)													
Thick Dark Surface (A12) Redox Dark Surface (F6)													
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)													
Sandy Gleyed Matrix (S4) Redox Depressions (F8) Wetland hydrology must be present, unless disturbed or problematic.													
Restrictive Layer (if present):													
Type: <u>bedrock</u>													
Depth (inches): <u>12"</u> Hydric Soils Present? Yes 🛛 No]												
Remarks:													

HYDROLOGY

Wetl	/etland Hydrology Indicators:													
Prim	ary Indicators (minimum	n of one r	equired	; check	all tha		Sec	ondary Indicators (2 or r	more requir	ed)				
	Surface Water (A1)				\boxtimes	Water-Stained Leave	es (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2	2)				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates	s (B13)			Dry-Season Water Ta	ble (C2)			
\boxtimes	Sediment Deposits (B	32)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
\boxtimes	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B4	4)			\boxtimes	Presence of Reduced	d Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)					Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5)			
	Surface Soil Cracks (I	B6)				Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (06) (LRR A)		
	Inundation Visible on	Aerial Im	agery (I	B7)		Other (Explain in Ren	marks)			Frost-Heave Hummoo	:ks (D7)			
	Sparsely Vegetated C	Concave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):								
Satu (inclu	ation Present? des capillary fringe)	Yes		No		Depth (inches):	<u>11</u>	Wetlar	nd Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (st	ream gau	ge, mo	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rem	emarks: Adjacent to Clear Creek. Some saturation was present but hydrology generally provided by overbank flow from roadway runoff. Debris was found throughout the boulders lining the stream bank.													

Project Site:	PPSL					City	/County:		/Clear Cree	ek	Sampling D	ate:	10/0	2/13	
Applicant/Owner:	CDOT Re	egion 1							State	<u>CO</u>	Sampling P	oint:	PPS	SL_UL	4
Investigator(s):	Beazley/I	Phillips	Chandler					Se	ection, Town	ship, Rang	e: <u>T3S R7</u>	3W Sect	ion <u>35</u>		
Landform (hillslope, ter	race, etc.): <u>sl</u>	ope		L	ocal relief	(concave	, conve	x, none):	<u>convex</u>		Slop	e (%):	<u>25</u>	
Subregion (LRR):	<u>E</u>			Lat:	<u>39*45'50.17" N</u>			Long:	105*38'02.8	<u>38 W</u>		Datum:	NAD 1	<u>983</u>	
Soil Map Unit Name:	<u>n/a</u>									NWI class	ification:				
Are climatic / hydrologi	c conditio	ns on tl	ne site typical fo	or this tin	ne of year?	Yes	\bowtie	No	🔲 (If no	, explain in	Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□, s	ignificantly distur	bed?	Are "Nor	mal Cir	cumstances	" present?		Yes		No	\boxtimes
Are Vegetation	Soil	□,	or Hydrology	□, n	aturally problema	atic?	(If neede	ed, expl	ain any ans	wers in Rer	marks.)				

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

Hydrophytic Vegetation Present?	Yes	No	\boxtimes				
Hydric Soil Present?	Yes	No	\boxtimes	Is the Sampled Area within a Wetland?	Yes	No	\boxtimes
Wetland Hydrology Present?	Yes	No	\boxtimes				
Remarks:							

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:			
1				Number of Dominant Species	4		(A)
2				That Are OBL, FACW, or FAC:	<u>_</u>		(A)
3				Total Number of Dominant	2		(B)
4. <u>4</u>				Species Across All Strata:	<u> </u>		(D)
50% =, 20% =		= Total Cove	r	Percent of Dominant Species	50		(/ / P)
Sapling/Shrub Stratum (Plot size: 9)				That Are OBL, FACW, or FAC:	<u>30</u>		(A/D)
1				Prevalence Index worksheet:			
2				Total % Cover of:	Multiply b	<u>by:</u>	
3				OBL species	x1 =		
4				FACW species	x2 =		
5				FAC species <u>40</u>	x3 =	120	
50% =, 20% =		= Total Cove	r	FACU species <u>30</u>	x4 =	120	
Herb Stratum (Plot size: 9)				UPL species <u>40</u>	x5 = 2	<u>200</u>	
1. <u>Pascopyrum smithii</u>	<u>20</u>	no	UPL	Column Totals: <u>110</u> (A)	4	<u>440</u> (B)	
2. <u>Verbascum thapsus</u>	<u>30</u>	yes	FACU	Prevalence Index = B/A	= <u>4.0</u>		
3. <u>Bromus inermis</u>	<u>40</u>	<u>ves</u>	FAC	Hydrophytic Vegetation Indicators:			
4. <u>Centaurea virgata</u>	<u>20</u>	no	<u>UPL</u>	1 – Rapid Test for Hydrophytic Vegetati	ion		
5				□ 2 - Dominance Test is >50%			
6				□ 3 - Prevalence Index is $\leq 3.0^{1}$			
7				4 - Morphological Adaptations ¹ (Provide	e supportin	g	
8				data in Remarks or on a separate sh	neet)		
9				5 - Wetland Non-Vascular Plants ¹			
10				Problematic Hydrophytic Vegetation ¹ (E	Explain)		
11							
50% = <u>55</u> , 20% = <u>22</u>	<u>110</u>	= Total Cove	r	'Indicators of hydric soil and wetland hydrolog	gy must		
Woody Vine Stratum (Plot size:)							
1							
2				Hydrophytic			57
50% =, 20% =		= Total Cove	r	Vegetation Yes		NO	×
% Bare Ground in Herb Stratum 65							
Remarks:							

SOIL

SOIL									S	ampling Po	oint: <u>PP</u>	SL UL 2	2	
Profile	e Descri	ption: (Describe t	o the depth	n needed to d	ocument the in-	dicator or conf	irm the absenc	e of indicat	ors.)					
De	pth	Matrix			Redo	x Features								
(inche	es)	Color (moist)	%	Color (mo	oist) %	Type ¹	Loc ²	Texture	•			Remarks	6	
<u>0</u> .	<u>-5</u>	<u>2YR 5/2</u>	<u>100</u>	<u>n/a</u>	-	<u>-</u>	-	silt loa	<u>m</u>	sand and	gravel p	present		
									_					
									_					
									_					
									_					
									_					
									_					
									_					
¹ Type:	: C= Cor	centration, D=Dep	letion, RM=	Reduced Mat	rix, CS=Covered	or Coated Sand	l Grains. ² L	Location: PL:	=Pore	Lining, M=	Matrix			
Hydrid	c Soil In	dicators: (Applica	ble to all L	RRs, unless	otherwise noted	ł.)		Indi	cators	for Proble	ematic	Hydric S	oils ³ :	
	Histosol	(A1)			Sandy Redox	(S5)			2 cr	m Muck (A	10)			
	Histic Ep	pipedon (A2)			Stripped Matrix	k (S6)			Red	d Parent M	aterial (TF2)		
	Black Hi	stic (A3)			Loamy Mucky	Mineral (F1) (e >	cept MLRA 1)		Ver	y Shallow	Dark Su	rface (TI	-12)	
	Hydroge	n Sulfide (A4)			Loamy Gleyed	Matrix (F2)			Oth	er (Explair	in Rem	arks)		
	Depleted	d Below Dark Surfa	ce (A11)		Depleted Matri	x (F3)								
	Thick Da	ark Surface (A12)			Redox Dark Su	urface (F6)								
	Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F7)		³ Indi	icators	of hydroph	nytic veg	etation a	and	
	Sandy G	leyed Matrix (S4)			Redox Depres	sions (F8)		v u	inless of	disturbed o	r proble	matic.	ι,	
Restri	ictive La	yer (if present):												
Type:		<u>5</u>												
Depth	(inches)	: <u>bedrock and</u>	or boulders				Hydric Soils	Present?			Yes		No	\boxtimes
Rema	rks: I	Restrictive layer at	5", liekly res	sulting from th	e placement of ri	p-rap.								

HYDROLOGY

Wetla	etland Hydrology Indicators:													
Prima	ary Indicators (minimum	of one re		Sec	ondary Indicators (2 or r	more requir	ed)							
	Surface Water (A1)					Water-Stained Leaves	s (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2))				(except MLRA 1, 2, 4	IA, and 4B)			(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
	Water Marks (B1)					Aquatic Invertebrates	(B13)			Dry-Season Water Ta	ble (C2)			
	Sediment Deposits (B	2)				Hydrogen Sulfide Odd	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position ((D2)			
	Algal Mat or Crust (B4)Iron Deposits (B5)					Presence of Reduced	l Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5) Surface Soil Cracks (B6)					Recent Iron Reduction	n in Tilled Soils (C6)			FAC-Neutral Test (D5))			
	Surface Soil Cracks (E	36)				Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (D	06) (LRR A)		
	Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)									Frost-Heave Hummoc	:ks (D7)			
	Sparsely Vegetated C	oncave S	Surface	(B8)										
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):								
Satur (inclu	ation Present? des capillary fringe)	Yes		No	\boxtimes	Depth (inches):		Wetlan	d Hy	drology Present?	Yes		No	
Desc	ribe Recorded Data (str	eam gau	ge, mor	nitoring	well, a	erial photos, previous ir	nspections), if availab	ole:						
Rema	emarks: .													

Project Site:	PPSL					City	/County:		/Clear	r Creek	Sampling [Date:	10/0)2/13	
Applicant/Owner:	CDOT Re	egion 1	-						5	State: <u>CO</u>	Sampling F	Point:	PPS	SL_WI	5
Investigator(s):	Beazley/I	Phillips	/Chandler					Se	ection, 7	Township, Rang	ge: <u>T3S R7</u>	73W Sect	ion <u>35</u>		
Landform (hillslope, te	rrace, etc.): <u>te</u>	errace		L	ocal relief	(concave	e, conve	ex, none	e): <u>convex</u>		Slop	e (%):	<u>3</u>	
Subregion (LRR):	<u>E</u>			Lat:	<u>39*44'41.79" N</u>			Long:	<u>105*32</u>	2.08.97" W		Datum:	NAD 1	<u>983</u>	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:	PEM			
Are climatic / hydrolog	ic conditio	ns on t	he site typical fo	or this ti	me of year?	Yes	\bowtie	No		(If no, explain ir	n Remarks.)				
Are Vegetation ,	Soil	□,	or Hydrology	□, :	significantly distur	bed?	Are "No	rmal Cir	rcumsta	inces" present?		Yes	\boxtimes	No	
Are Vegetation ,	Soil	□,	or Hydrology	□ , ı	naturally problema	atic?	(If need	ed, expl	lain any	answers in Re	marks.)				

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

Hydrophytic Vegetation Present?	Yes	\boxtimes	No						
Hydric Soil Present?	Yes	\boxtimes	No		Is the Sampled Area within a Wetland?	Yes	\boxtimes	No	
Wetland Hydrology Present?	Yes	\boxtimes	No						
Remarks: This wetland, located along a terrace ac safety concerns.	jacent to	Clea	r Cree	ek, ser	ves as a reference for the assumed wetlands that could n	ot be a	Icces	sed d	ue to

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. Populus angustifolia	5	ves	FACW	Number of Dominant Species	(A)
2				That Are OBL, FACW, or FAC:	(A)
3				Total Number of Dominant	
4				Species Across All Strata: 5	(B)
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cove	r	Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 9)				That Are OBL, FACW, or FAC:	(A/B)
1. <u>Betula occidentalis</u>	<u>25</u>	yes	FACW	Prevalence Index worksheet:	
2. <u>Salix monticola</u>	<u>20</u>	yes	<u>OBL</u>	Total % Cover of: Multiply by:	
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
50% = <u>22.5</u> , 20% = <u>9</u>	<u>45</u>	= Total Cove	r	FACU species x4 =	
Herb Stratum (Plot size: 9)				UPL species x5 =	
1. <u>Poa pratensis</u>	<u>20</u>	<u>yes</u>	FACW	Column Totals: (A) (E	3)
2. <u>Bromus ciliatus</u>	<u>5</u>	no	FAC	Prevalence Index = B/A =	
3. Juncus compressus	<u>65</u>	ves	<u>OBL</u>	Hydrophytic Vegetation Indicators:	
4. <u>Oryzopsis hymenoides</u>	<u>2</u>	<u>no</u>	<u>UPL</u>	1 – Rapid Test for Hydrophytic Vegetation	
5				□ 2 - Dominance Test is >50%	
6				\Box 3 - Prevalence Index is $\leq 3.0^1$	
7				4 - Morphological Adaptations ¹ (Provide supporting	
8				data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants ¹	
9				 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain) 	
9 10 11				5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain)	
9 10 11 50% = <u>46</u> , 20% = <u>18</u>	 <u>92</u>	= Total Cove		5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. unless disturbed or problematic.	
9 10 11 50% = <u>46</u> , 20% = <u>18</u> <u>Woody Vine Stratum (Plot size:)</u>	<u></u> <u></u> <u>92</u>	 = Total Cover	 	5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9 10 11 50% = <u>46</u> , 20% = <u>18</u> <u>Woody Vine Stratum (Plot size:)</u> 1. <u>Clematis orientalis</u>	<u></u> <u>92</u> 2	 = Total Cover <u>no</u>	 r <u>UPL</u>	5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9 10 11 50% = <u>46</u> , 20% = <u>18</u> <u>Woody Vine Stratum (Plot size:)</u> 1. <u>Clematis orientalis</u> 2	<u>92</u> 2	= Total Cover	 r <u>UPL</u>		
9 10 11 50% = <u>46</u> , 20% = <u>18</u> <u>Woody Vine Stratum (Plot size:)</u> 1. <u>Clematis orientalis</u> 2 50% =, 20% =	<u>92</u> 2	= Total Cove	 r r	Image: Second	
9 10 11 50% = <u>46</u> , 20% = <u>18</u> <u>Woody Vine Stratum (Plot size:)</u> 1. <u>Clematis orientalis</u> 2 50% =, 20% = % Bare Ground in Herb Stratum <u>30</u>	 92 2	= Total Cove	 r <u>UPL</u> r	Image: Second	

of the species present are commonly used in revegetation efforts; therefore affecting the plant sdiversity in this location.

SOIL									Sampli	ing Point: <u>PP</u>	SL WL	<u>5</u>	
Profile Desc	ription: (Describe te	o the depth	n needed to d	ocument f	the indicate	or or conf	firm the absen	ce of indica	tors.)				
Depth	Matrix				Redox Fea	tures							
(inches)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	Texture	э		Remark	3	
<u>0-5</u>	7.5YR 3/2	<u>70</u>	<u>5 YR 4/6</u>	<u>6</u>	<u>30</u>	CS	M	sandy lo	bam				
<u>5-8</u>	7.5YR 3/1	<u>50</u>	<u>5 YR 4/0</u>	<u>6</u>	<u>50</u>	<u>CS</u>	M	sand	<u> </u>	_			
<u>8-14</u>	<u>7.5 YR 2.5/2</u>	<u>60</u>	<u>10YR 3/</u>	<u>6</u>	<u>40</u>	RM	<u>PL</u>	sandy of	clay	_			
				-						_			
				-						_			
				-						_			
				-						_			
				-						_			
¹ Type: C= Co	oncentration, D=Depl	etion, RM=	Reduced Matr	ix, CS=Co	vered or Co	bated Sand	d Grains. 2	Location: PL	.=Pore Lining	g, M=Matrix			
Hydric Soil I	ndicators: (Applica	ble to all L	RRs, unless	otherwise	noted.)			Ind	icators for F	Problematic I	Hydric S	ioils ³ :	
Histoso	ol (A1)			Sandy R	edox (S5)				2 cm Mu	ck (A10)			
Histic E	pipedon (A2)			Stripped	Matrix (S6)	1			Red Pare	ent Material (TF2)		
Black H	listic (A3)			Loamy N	lucky Miner	al (F1) (e)	xcept MLRA 1)		Very Sha	allow Dark Su	rface (T	F12)	
☐ Hydrog	en Sulfide (A4)			Loamy G	leyed Matri	ix (F2)			Other (E	xplain in Rem	arks)		
Deplete	ed Below Dark Surfa	ce (A11)		Depleted	Matrix (F3)							
Thick D	Oark Surface (A12)		\boxtimes	Redox D	ark Surface	÷ (F6)							
□ Sandy	Mucky Mineral (S1)			Depleted	Dark Surfa	ace (F7)		³ Ind	licators of hy	drophytic veg	etation a	and	
□ Sandy	Gleyed Matrix (S4)			Redox D	epressions	(F8)		i l	unless distur	bed or proble	matic.	ι,	
Restrictive L	ayer (if present):												
Туре:	bedrock												
Depth (inches	s): <u>12"</u>						Hydric Soils	Present?		Yes	\boxtimes	No	
Remarks:													

HYDROLOGY

Wetl	Netland Hydrology Indicators:													
Prim	rimary Indicators (minimum of one required; check all that apply)									ondary Indicators (2 or r	nore requir	ed)		
	Surface Water (A1)				\boxtimes	Water-Stained Leave	s (B9)			Water-Stained Leaves	s (B9)			
	High Water Table (A2)				(except MLRA 1, 2, 4	4A, and 4B)			(MLRA 1, 2, 4A, and	4B)			
	Saturation (A3)					Salt Crust (B11)				Drainage Patterns (B1	0)			
\boxtimes	Water Marks (B1)					Aquatic Invertebrates	; (B13)			Dry-Season Water Ta	ble (C2)			
\boxtimes	Sediment Deposits (B	2)				Hydrogen Sulfide Od	or (C1)			Saturation Visible on A	Aerial Imag	ery (C	9)	
	Drift Deposits (B3)					Oxidized Rhizosphere	es along Living Roots	s (C3)		Geomorphic Position	(D2)			
	Algal Mat or Crust (B4	4)			\boxtimes	Presence of Reduced	d Iron (C4)			Shallow Aquitard (D3)				
	Iron Deposits (B5)				Recent Iron Reductio	n in Tilled Soils (C6)			FAC-Neutral Test (D5)				
	Surface Soil Cracks (B6)					Stunted or Stresses F	Plants (D1) (LRR A)			Raised Ant Mounds (06) (LRR A)		
	Inundation Visible on	Aerial Im	agery (I	B7)		Other (Explain in Ren	narks)			Frost-Heave Hummod	:ks (D7)			
	 Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) 													
Field	Observations:													
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):								
Wate	er Table Present?	Yes		No	\boxtimes	Depth (inches):								
Satu (inclu	ration Present? Ides capillary fringe)	Yes		No		Depth (inches):	<u>13</u>	Wetlar	nd Hy	drology Present?	Yes	\boxtimes	No	
Desc	ribe Recorded Data (st	ream gau	ige, moi	nitoring	well, a	erial photos, previous i	nspections), if availat	ble:						
Rem	temarks: Adjacent to Clear Creek. Some saturation was present, but hydrology generally provided by overbank flow and roadway runoff. Debris was found													
	throughout the	e boulder	's lining	the stre	eam ba	INK								

Project Site:	PPSL					City	/County:		/Clear	Creek	Sampling D	Date:	<u>10/0</u>	02/13	
Applicant/Owner:	CDOT Re	egion 1	<u>.</u>						S	tate: <u>CO</u>	Sampling F	oint:	PPS	SL_UL	
Investigator(s):	Beazley/I	Phillips	/Chandler					Se	ection, To	ownship, Rang	ge: <u>T3S R7</u>	3W Sect	ion 35		
Landform (hillslope, ter	rrace, etc.): <u>fil</u>	Il slope			Local relief	(concave	e, conve	x, none)	concave		Slop	e (%):	<u>25</u>	
Subregion (LRR):	<u>E</u>			Lat:	<u>39*45'50.17" N</u>	1		Long:	105*38	02.88 W		Datum:	NAD 1	983	
Soil Map Unit Name:	<u>n/a</u>									NWI class	sification:				
Are climatic / hydrologi	c conditio	ns on t	he site typical fo	or this tir	ne of year?	Yes	\bowtie	No	□ (I	f no, explain ir	n Remarks.)				
Are Vegetation \Box ,	Soil	□,	or Hydrology	□ , s	ignificantly distu	irbed?	Are "No	rmal Cir	cumstar	nces" present?		Yes		No	\boxtimes
Are Vegetation	Soil	□,	or Hydrology	□, r	aturally problem	natic?	(If need	ed, expl	ain any a	answers in Re	marks.)				

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

ydrophytic Vegetation Present?		No	\boxtimes				
Hydric Soil Present?		No	\boxtimes	Is the Sampled Area within a Wetland?	Yes	No	\boxtimes
Wetland Hydrology Present?	Yes	No	\boxtimes				
Remarks:							

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 15)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:					
1. <u>Pseudotsuga menziesii</u>	<u>5</u>	ves	FACU	Number of Dominant Species	2		(A)		
2				That Are OBL, FACW, or FAC:	<u> </u>		(~)		
3				Total Number of Dominant	5		(B)		
4. <u>4</u>				Species Across All Strata:	<u>5</u>		(D)		
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cove	ər	Percent of Dominant Species	40		(A/B)		
Sapling/Shrub Stratum (Plot size: 9)				That Are OBL, FACW, or FAC:	10		(,,,,,,)		
1. Juniperus communis	<u>15</u>	yes	<u>UPL</u>	Prevalence Index worksheet:					
2. <u>Betula occidentalis</u>	<u>5</u>	yes	FACW	Total % Cover of:	Multiply	<u>by:</u>			
3				OBL species	x1 =				
4		<u> </u>		FACW species <u>5</u>	x2 =	<u>10</u>			
5		<u> </u>		FAC species <u>48</u>	x3 =	<u>144</u>			
50% = <u>7.5,</u> 20% = <u>3</u>	<u>15</u>	= Total Cove	ər	FACU species <u>40</u>	x4 =	<u>160</u>			
Herb Stratum (Plot size: 9)				UPL species 23	x5 =	<u>115</u>			
1. <u>Agrostic gigantea</u>	<u>15</u>	no	FAC	Column Totals: <u>135</u> (A)		<u>429</u> (B)			
2. <u>Hesperostipa comata</u>	<u>8</u>	<u>no</u>	UPL	Prevalence Index = B/A =	= <u>3.69</u>				
3. <u>Elymus canadensis</u>	<u>8</u>	no	FAC	Hydrophytic Vegetation Indicators:					
4. Artemisia frigida	<u>1</u>	<u>no</u>	<u>UPL</u>	1 – Rapid Test for Hydrophytic Vegetat	tion				
5. <u>Bromus inermis</u>	<u>20</u>	yes	FAC	□ 2 - Dominance Test is >50%					
6. <u>Pascopyrum smithii</u>	<u>35</u>	yes	FACU	\Box 3 - Prevalence Index is $\leq 3.0^1$					
7. <u>Phleum pratense</u>	<u>5</u>	<u>no</u>	FAC	4 - Morphological Adaptations ¹ (Provide	e supporti	ing			
8				data in Remarks or on a separate sl	heet)	0			
9				5 - Wetland Non-Vascular Plants ¹					
10				Problematic Hydrophytic Vegetation ¹ (E	Explain)				
11									
50% = <u>40</u> , 20% = <u>16</u>	<u>79</u>	= Total Cove	ər	¹ Indicators of hydric soil and wetland hydrolo	ogy must				
Woody Vine Stratum (Plot size:)									
1									
2				Hydrophytic			_		
50% = 20% =	= Total Cover			Vegetation Yes No					
				Present?					
% Bare Ground in Herb Stratum <u>45</u>			51	Present?					

SO	l
	-

SOIL								Sampling	9 Point: <u>PP</u>	SL UL :	5			
Profile I	Description: (Describe to	o the dept	h needed to d	ocument the ind	licator or confi	rm the absenc	e of indicate	ors.)						
Dept	n Matrix			Redox	Features									
(inches)	Color (moist)	%	Color (mo	ist) %	ι) % Type ¹		Texture		Remarks					
<u>0-1</u>	<u>10YR 2/2</u>	<u>100</u>	<u>n/a</u>		<u> </u>	-	silt loar	<u>m</u>	_					
<u>1-18</u>	<u>10YR 3/3</u>	<u>100</u>	<u>n/a</u>	=	=	<u>-</u>	fine sar	<u>nd</u>						
		<u> </u>												
						·								
						·								
¹ Type: C	= Concentration, D=Depl	etion, RM=	Reduced Matr	ix, CS=Covered	or Coated Sand	Grains. ² L	_ocation: PL=	Pore Lining,	M=Matrix					
Hydric S	Soil Indicators: (Applica	ble to all L	RRs, unless o	otherwise noted	.)		India	cators for Pro	oblematic I	Hydric S	oils ³ :			
🗆 Hi:	stosol (A1)			Sandy Redox (S5)			2 cm Muck	(A10)					
🗆 Hi:	stic Epipedon (A2)			Stripped Matrix	(S6)			Red Paren	t Material (TF2)				
🗆 Bla	ack Histic (A3)			Loamy Mucky N	/lineral (F1) (ex	cept MLRA 1)	Very Shallow Dark Surface (TF12)							
🗆 Ну	drogen Sulfide (A4)			Loamy Gleyed	Matrix (F2)		Other (Explain in Remarks)							
De De	epleted Below Dark Surface	ce (A11)		Depleted Matrix	(F3)									
🗆 Th	ick Dark Surface (A12)			Redox Dark Su	rface (F6)		2							
🗆 Sa	ndy Mucky Mineral (S1)			Depleted Dark	Surface (F7)) ³ Indicators of hydrophytic vegetatio					tion and			
🗆 Sa	indy Gleyed Matrix (S4)			Redox Depress	ions (F8)		u	nless disturbe	d or proble	matic.	ι,			
Restrict	ive Layer (if present):													
Type:														
Depth (inches):							Present?		Yes		No	\boxtimes		
Remarks	: Rip-rapped fill slope	resulting f	rom roadway o	constructoin. Rip	rap ranged in si	ze from 2 feet to	o 10 feet.							

HYDROLOGY

Wetla	and Hydrology Indicat	ors:													
Prima	ary Indicators (minimum	Secondary Indicators (2 or more required)													
	Surface Water (A1)					Water-Stained Leaves (B9)			Water-Stained Leaves	s (B9)					
	High Water Table (A2))				(except MLRA 1, 2, 4A, and 4B)			(MLRA 1, 2, 4A, and 4B)						
	Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B1	10)					
	Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Ta	ble (C2)					
	Sediment Deposits (B	2)				Hydrogen Sulfide Odor (C1)			Saturation Visible on A	Aerial Imag	ery (Cs	ery (C9)			
	Drift Deposits (B3)					Oxidized Rhizospheres along Living Roo	ots (C3)		Geomorphic Position	(D2)					
	Algal Mat or Crust (B4	-)				Presence of Reduced Iron (C4)			Shallow Aquitard (D3))					
	Iron Deposits (B5)					Recent Iron Reduction in Tilled Soils (Ce	6)		FAC-Neutral Test (D5)					
	Surface Soil Cracks (B6)					Stunted or Stresses Plants (D1) (LRR A)			Raised Ant Mounds (D6) (LRR A)						
	Inundation Visible on	Aerial Ima	agery (I	B7)		Other (Explain in Remarks)			Frost-Heave Hummocks (D7)						
	Sparsely Vegetated C	oncave S	Surface	(B8)											
Field	Observations:														
Surfa	ce Water Present?	Yes		No	\boxtimes	Depth (inches):									
Wate	r Table Present?	Yes		No	\boxtimes	Depth (inches):									
Satur (inclu	ation Present? des capillary fringe)	Yes		No	\boxtimes	Depth (inches): Wetla			etland Hydrology Present? Yes						
Desc	ribe Recorded Data (str	eam gau	ge, moi	nitoring	well, a	erial photos, previous inspections), if avail	lable:								
Rem	arks:														





Appendix B. Representative Photographs



WETLAND DELINEATION REPORT



Wetland 1—Overview









Wetland 3—Overview

Wetland 3—Soils





Wetland 4—Overview

Wetland 4—Soils



Assumed Wetland 6—Overview

Assumed Wetland 7—Overview

Assumed Wetland 8—Overview

Assumed Wetland 9—Overview

Assumed Wetland 10—Overview

Assumed Wetland 11—Overview

Assumed Wetland 13—Overview

Assumed Wetland 12—Overview

Assumed Wetland 14—Overview

Assumed Wetland 15—Overview

Assumed Wetland 16—Overview

Assumed Wetland 17—Overview

Assumed Wetland 18—Overview

Assumed Wetland 19—Overview

Assumed Wetland 20—Overview

Appendix C. Wetland Location Map

