
AQUATIC RESOURCES DELINEATION

APN: 214-142-009

HUMBOLDT COUNTY

Prepared by:

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Prepared for:

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Date:

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1. INTRODUCTION

This report includes the results an aquatic resources delineation conducted on a portion of APN: 214-142-009 near Redway. The purpose of the study was to determine the extent of wetlands and other aquatic resources that were filled or disturbed from development for cannabis cultivation so that a restoration plan can be developed.

2. DEFINITIONS

Waters of the United States

Waters of the United States are regulated by the U.S Army Corps of Engineers (Army Corps) under the Clean Water Act. Waters of the United States include, but are not limited to, territorial seas, waters used for interstate or foreign commerce and their tributaries, and waters adjacent to the aforementioned, including wetlands.

Army Corps jurisdiction in waters such as creeks and rivers includes the area below the ordinary high water mark, which is the line on the bank established by fluctuations of water that leave physical characteristics such as a distinct line on the bank, shelving, destruction of terrestrial vegetation, and presence of debris.

The Army Corps defines wetlands as:

"... areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Waters of the State

Waters of the state are regulated by the State Water Resources Control Board (Water Board) under the Porter-Cologne Water Quality Control Act. Waters of the state are defined as:

"... any surface water or groundwater, including saline waters, within the boundaries of the state."

Waters of the State includes water in both natural and artificial channels.

The Water Board's definition of a wetland is:

"An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."

Streamside Management Areas

The Humboldt County General Plan (Humboldt County 2017) recognizes Streamside Management Areas (SMAs) along all streams, which are defined as:

"100 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of perennial streams."

"50 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of intermittent streams."

3. ENVIRONMENTAL SETTING

Project Location

The parcel is located along Wood Ranch Road approximately 3.75 miles northeast of Redway on the Miranda USGS quadrangle (Non-sectioned area of T3S, R3E).

Soil, Topography, and Hydrology

The soil type mapped in the study area is Coyoterock-Yorknorth complex, 15-50% slopes (United States Department of Agriculture, Natural Resource Conservation Service 2019). This soil type is derived from sandstone, mudstone, and schist parent material. All of the soil components have a non-hydric soil rating. The study area is in a relatively flat, partially graded terrace on an approximately 15% south-facing slope. The elevation ranges from approximately 800-880 feet above sea level. The site includes wetlands and small streams that drain into the South Fork Eel River.

4. METHODS

4.1. Current Conditions

The study was conducted on May 8, 2019 by Kyle Wear, M.A. Mr. Wear has over 20 years of experience conducting floristic surveys and other botanical work in northern California and over ten years of experience conducting wetland delineations. Mr. Wear is also trained in wetland delineation by the Wetland Training Institute.

Federal, State, and County wetland delineation methods follow the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual Western Mountains, Valleys, and Coast Region (Version 2.0) (Army Corps 2010). A positive wetland determination is made when all three wetland parameters (hydrophytic vegetation, hydric, soil, and wetland hydrology) are present. Four sample plots were evaluated for hydrophytic vegetation, hydric, soil, and wetland hydrology. Wetland determination data forms are provided in Appendix A.

Hydrophytic Vegetation

The presence of hydrophytic vegetation in determined by the wetland indicator status of each plant species present using the Western Mountains Valleys and Coast 2016 Regional Wetland

Aquatic Resources Delineation September 2019
APN: 214-142-009 2

Plant List (Army Corps 2016). The indicator status of plants is based on the estimated probability of the species occurring in wetlands. The indicator status categories are:

Obligate Wetland Plants (OBL)	Almost always occur in wetlands	>99% frequency
Facultative Wetland Plants (FACW)	Usually occur in wetlands	67%-99%
Facultative Plants (FAC)	Equally occur wetlands and non-wetlands	33%-67%
Facultative Upland Plants (FACU)	Sometimes occur in wetlands	1%-33%
Obligate Upland Plants (UPL)	Rarely occur in wetlands	<1%

If more than 50% of the dominant plants across all vegetation strata (i.e. trees, shrubs, herbs) are OBL, FACW, or FAC, the vegetation is considered to be hydrophytic. Dominance of plants within the plots is determined using the "50/20" rule. This method involves estimating absolute cover of each plant in each vegetation stratum. Dominant plants include the plants with the highest cover that collectively or individually account for 50% of the total vegetation cover. Additional plants are considered dominant if their cover is at least 20%.

Hydric Soil

Indicators of hydric soil include, but are not limited to, a strong hydrogen sulfide (rotten egg) odor, redox concentrations, depleted matrix, and high organic matter content. Soil colors are determined by using a standard Munsell soil color chart (Gretag Macbeth 2000).

Wetland Hydrology

Indicators of wetland hydrology include, but are not limited to, surface water, high water table, soil saturation, sediment deposits, soil cracks, and oxidized root channels along living roots.

Non-Wetland Waters

Non-wetland waters include watercourses with an ordinary highwater mark in addition to ponds, lakes, and other waterbodies.

4.2. Conditions Before Development

National Agricultural Imagery Program (NAIP) images taken before (2014) and after (2016 and 2018) development and Google Earth images (2014 and 2019) were evaluated to determine the extent of filling and disturbance to wetlands on the site. The extent of wetlands and disturbance visible in the photos was mapped with QGIS software that was used to calculate the area of wetland fill and disturbance.

5. RESULTS AND DISCUSSION

There are 1.218 acres of seasonal emergent wetland visible in the 2014 NAIP (Appendix B) and Google Earth images (Appendix C) that were taken before development of the site. The wetlands are distinguishable by the brownish-green patches of rushes (likely Juncus patens) in contrast to the lighter green or tan color of the adjacent grasslands, and other lighter green features that are trees and shrubs including oaks, California bay, Douglas-fir, and coyote brush. By 2018, 2.990 acres of grading and development are visible in on the NAIP image, most of

Aquatic Resources Delineation September 2019 APN: 214-142-009

which appears to have occurred by 2016 (Figure 1, Table 1). The grading resulted in filling of 0.465 acre of wetland. These areas no longer have wetland characteristics and are under greenhouse pads and roads. 0.753 acres of emergent wetland were delineated in 2019, of which 0.306 acre is within the graded area visible in the aerial images; there is no development on these areas and they still have wetland characteristics. Most of the grading and development outside the wetlands is within the 100-foot wetland setback (of the 2014 wetland extent) required by the Cannabis Cultivation Policy (Water Board 2019). Representative photos of the site are provided Appendix D.

Table 1. Summary of Wetland Impacts.

	Total Are	ea (acres)
Map Feature	2014	2019
Disturbed Area	0	2.990
Emergent Wetland	1.218	0.753
Filled Wetland	0	0.465
Disturbed Wetland	0	0.306
Unimpacted Wetland	1.218	0.447

There is an approximately 165-foot stretch of an intermittent stream running through the disturbed portion of Wetland 1. This feature is not visible on the 2014 aerial images. There is evidence of the channel on the 2016 NAIP image and the 2019 Google Earth image. Thus, it may be constructed, enhanced, or a result of the disturbance to the wetland. For example, the lack of vegetation after disturbance may have increased runoff and erosion through the area creating the channel. It is also possible it is not visible due to resolution of the images, or it is obscured by vegetation. There is no other evidence in the aerial images or on the ground at the site indicating other potential watercourse alterations.

The remaining wetlands, which includes the areas that were disturbed, but still have wetland characteristics, and the unimpacted wetlands have hydrophytic vegetation dominated by spreading rush (Juncus patens) and other hydrophytes including spike rush (Eleocharis macrostachya), nut sedge (Cyperus eragrostis), and pennyroyal (Mentha pelugium). The adjacent upland habitat includes grassland dominated by non-native grasses including rattlesnake grass (Briza maxima), wild oat (Avena barbata), and orchard grass (Dactylis glomerata). There are also stands coyote brush (Baccharis pilularis), Douglas-fir (Pseudotsuga menziesii), oaks (Quercus spp.), and California bay (Umbellularia californica).

The soil in the wetlands meets hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface). The soil color is 10yr 4/1 or 10yr 3/1 with approximately 10% 7.5yr 5/6 redox concentrations. Primary wetland hydrology indicators observed included Surface Water (A1), High Water Table (A2), and Saturation (A3). The upland soil color was 10yr 2/2 with no redox features or other hydric soil indicators. The upland grassland and forested areas lack indicators of wetland hydrology.

6. REFERENCES

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https://www.waterboards.ca.gov/water issues/programs/cannabis/docs/policy/final cannabis policy with attach a.pdf

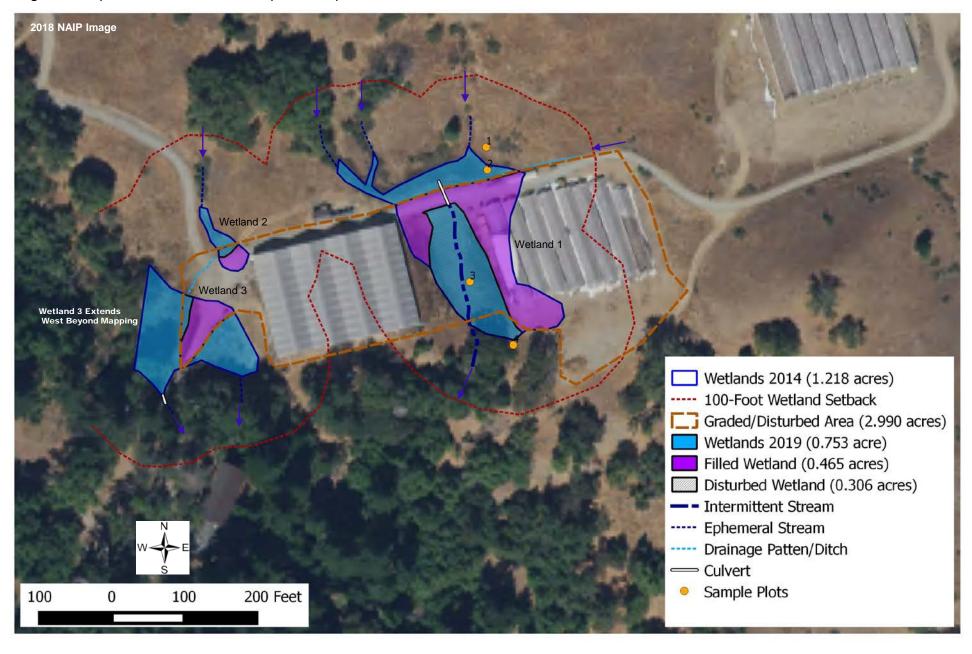
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Aquatic Resources Delineation September 2019

Figure 1. Aquatic Resources and Impacts Map.



Aquatic Resources Delineation APN: 214-142-009

Appendix A. Wetland Determination Data Forms

Aquatic Resources Delineation September 2019
APN: 214-142-009 Appendix A

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region APN 212-142-009 City/County: Humbold Sampling Date: 1 State: CA Sampling Point: 5-8-9 Applicant/Owner: W. Wear Section, Township, Range: US, T3S, R3E Investigator(s): hillslage Local relief (concave, convex, none): 1000 Slope (%): 20 Landform (hillslope, terrace, etc.): Est. E 432230.9 Long: N 4446917.0 Datum: WAD 83 Subregion (LRR): Yarknorth Soil Map Unit Name: NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _ 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? Is the Sampled Area Hydric Soil Present? Yes within a Wetland? Wetland Hydrology Present? Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size:) % Cover Species? Status Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species Sapling/Shrub Stratum (Plot size: 30 | read = Total Cover That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = ____ FACW species _____ x 2 = ____ FAC species _____ x 3 = ____ FACU species _____ x 4 = ____ 70 __ = Total Cover Herb Stratum (Plot size: 20 - rady) UPL species _____ x 5 = ____ Column Totals: _____ (A) _____ (B) UPL Prevalence Index = B/A = UPL **Hydrophytic Vegetation Indicators:** 4. Vicia sativa ___ 1 - Rapid Test for Hydrophytic Vegetation 14400hours radicala 2 - Dominance Test is >50% torilis arvensis __ 3 - Prevalence Index is ≤3.0¹ 104 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain) 10. _____ ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. ____ = Total Cover Woody Vine Stratum (Plot size: Hydrophytic Vegetation Present? ____= Total Cover % Bare Ground in Herb Stratum _____ Remarks:

-	-	
•	$\boldsymbol{\Gamma}$	

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		Remarks	
0-16	10/12/2						CL		
	ι μ								
	oncentration, D=Depl					d Sand Gra		cation: PL=Pore Lining, M=Matrix	
	Indicators: (Applica	ible to all Li			ed.)		Indicate	ors for Problematic Hydric Soils ³ :	
Histoso			_ Sandy Redox (m Muck (A10)	
	pipedon (A2)	-	_ Stripped Matrix	` '				d Parent Material (TF2)	
	istic (A3)	-	_ Loamy Mucky I			MLRA 1)		ry Shallow Dark Surface (TF12)	
	en Sulfide (A4) d Below Dark Surface		_ Loamy Gleyed)		Otr	ner (Explain in Remarks)	
	ark Surface (A12)	(AII) _	_ Depleted Matrix _ Redox Dark Su				3Indicat	ors of hydrophytic vegetation and	
	Mucky Mineral (S1)		_ Depleted Dark		7)			and hydrology must be present,	
	Gleyed Matrix (S4)		_ Redox Depress		• /			ss disturbed or problematic.	
	Layer (if present):						1		
Type:									
Depth (in	ches):						Hydric Soi	Present? Yes No	
Remarks:							11,4111000		
HYDROLO)GY					· · · · · · · · · · · · · · · · · · ·			
1	drology Indicators:		abaalaall that awa	L A					
	cators (minimum of or	ne requirea;						endary Indicators (2 or more required)	
i	Water (A1)		Water-Sta			xcept	\	Nater-Stained Leaves (B9) (MLRA 1, 2,	
	ater Table (A2)			1, 2, 4A, a	ind 4B)			4A, and 4B)	
Saturati			Salt Crust		(5.40)			Orainage Patterns (B10)	
	flarks (B1)		Aquatic In					Ory-Season Water Table (C2)	
1	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)	
1	posits (B3)							Geomorphic Position (D2)	
	at or Crust (B4)		Presence		`	•		Shallow Aquitard (D3)	
	posits (B5)		Recent Iro			•		FAC-Neutral Test (D5)	
	Soil Cracks (B6)	masan, (D7)	Stunted or			1) (LRR A)		Raised Ant Mounds (D6) (LRR A)	
1	ion Visible on Aenal Ir v Vegetated Concave		Other (Ex	ыяні іп Ке	marks)		·	Frost-Heave Hummocks (D7)	
Field Obser	, ,	Suriace (Bo))						
1			4						
			Depth (in						
Water Table		esNo	-7					\checkmark	
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No X									
		gauge, moni	toring well aerial	photos pr	evious ins	nections) i	if available.		
	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:	Remarks:								

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

Project/Site: APN 212-14 - 009	C	City/County: 14m2	old	Sampling Date: 5-8-(9
Applicant/Owner: TRC				Sampling Point: Z
Investigator(s): Y. Wear			nge: NS 735,	
· · · · · · · · · · · · · · · · · · ·	*		, ,	_
Landform (hillslope, terrace, etc.): とはいし、い				Slope (%): <u>O</u> Datum: NAD 83
Subregion (LRR):				
Soil Map Unit Name:				ation:
Are climatic / hydrologic conditions on the site typical for				
Are Vegetation, Soil, or Hydrology				oresent? Yes X No
Are Vegetation, Soil, or Hydrology			eded, explain any answe	
SUMMARY OF FINDINGS – Attach site ma		sampling point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes	No	is the Sampled	Area /	
Hydric Soil Present? Western Hydrology Present?	No	within a Wetlan	17	No
Wetland Hydrology Present? Yes	No			
Remarks.				
VEGETATION – Use scientific names of pla	ants.		and the same of th	
		Dominant Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size:)		Species? Status	Number of Dominant Si	
1.			That Are OBL, FACW,	
2.			Total Number of Domin	ant /
3			Species Across All Stra	ta: (B)
4.			Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size:)		= Total Cover	That Are OBL, FACW,	or FAC: 100% (A/B)
1			Prevalence Index wor	ksheet:
2				Multiply by:
3				x1=
4.			{	x 2 =
5				x 3 =
int and a		= Total Cover		x 4 =
Herb Stratum (Plot size: 10 - radys	7 1	11 (2)		x 5 =
1. Electroris macrostachya	_ 20		Column Totals:	(A)(B)
2. Duris palens	70	Y FACW	Prevalence Index	= B/A =
3. Mentra pelision	10_	Y OBL	Hydrophytic Vegetation	on Indicators:
4. Holus Janahis		Y FAC	- Rapid Test for H	
5. Poatrivia>		Y FAC N FAC	2 - Dominance Tes	
6. Runex crispus			3 - Prevalence Inde	
7			data in Remarks	Adaptations ¹ (Provide supporting s or on a separate sheet)
9.			5 - Wetland Non-Va	
10			,	phytic Vegetation ¹ (Explain)
11				l and wetland hydrology must
		= Total Cover	be present, unless distu	
Woody Vine Stratum (Plot size:)		- Total Gover		
1.			Hydrophytic	6
2			Vegetation Present? Yes	s X No
% Bare Ground in Herb Stratum		= Total Cover	riesentr 16	3
Remarks:				

Sampling Point:

Profile Desc Depth	cription: (Describe Matrix	to the dept		nent the ir x Features		or confirm	the abser	nce of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	Loc²	Texture	Remarks
0-12	10x-4/1	90	7.575/6	10	C	3	CL	•
			1. 10					
		-						
				-				
¹Type: C=C	oncentration, D=Dep	etion, RM=	Reduced Matrix, CS	S=Covered	or Coate	d Sand Gra	ains. ²	Location: PL=Pore Lining, M=Matrix.
	Indicators: (Applic							ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			2	2 cm Muck (A10)
Histic E	pipedon (A2)		Stripped Matrix	(S6)			1	Red Parent Material (TF2)
Black H	istic (A3)		Loamy Mucky N	Aineral (F1) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)		Loamy Gleyed	, ,			(Other (Explain in Remarks)
	d Below Dark Surfac	e (A11)	Depleted Matrix	, ,			_	
	ark Surface (A12)		Redox Dark Su	. ,			³ Indio	cators of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark	-	7)			etland hydrology must be present,
	Sleyed Matrix (S4)		Redox Depress	ions (F8)			ur	nless disturbed or problematic.
Restrictive	Layer (if present):							
Туре:								.1
Depth (in	ches):						Hydric S	Soil Present? Yes No No
Remarks:								
HYDROLO	GY				***************************************			
Wetland Hy	drology Indicators:							
Primary India	cators (minimum of c	ne required	; check all that appl	y)			Se	econdary Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leave	s (B9) (ex	ccept		Water-Stained Leaves (B9) (MLRA 1, 2,
★ High Wa	ater Table (A2)		MLRA	1, 2, 4A, a	nd 4B)			4A, and 4B)
X Saturation	on (A3)		Salt Crust		•			_ Drainage Patterns (B10)
Water M	larks (B1)		Aquatic In	vertebrates	(B13)			_ Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
	posits (B3)		Oxidized F			iving Root	s (C3) 🕺	Geomorphic Position (D2)
	at or Crust (B4)		Presence	•	•	•	.5 (0-5)	Shallow Aquitard (D3)
	posits (B5)		Recent Iro					FAC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or			,	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	lmagery (B7				, (L (((, A)		Frost-Heave Hummocks (D7)
	Vegetated Concav			Main in Itol	nano)		_	_ 1 Tost-fleave Fluithhocks (D7)
Field Obser		0 0011000 (2						
Surface Wat		es N	No <u> </u>	oboe):				
Water Table		-1	No Depth (in		l.	-		
		7			-1000	-		
Saturation P (includes car		es X	No Depth (in	ches): <u>5</u>	rjace	Wetla	nd Hydro	logy Present? Yes No
	corded Data (stream	gauge, mo	nitoring well, aerial p	ohotos, pre	vious ins	pections), if	f available:	
Remarks:								
(Cinains,								

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region Project/Site: APN: 212-142-009 City/County: Hmbold Sampling Date: 5-8-19 State: Sampling Point: Applicant/Owner: K. Wear Section, Township, Range: WS, T3S, K3E Investigator(s): Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%): 1 Lat E 432224.0 Long: 4446860.3 Datum: MAD 87 Subregion (LRR): ____ Coyolerock - Yorknoth NWI classification: Soil Map Unit Name: Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No _____ (If no, explain in Remarks.) Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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? Is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: VEGETATION - Use scientific names of plants. Absolute Dominant Indicator **Dominance Test worksheet:** Tree Stratum (Plot size:) % Cover Species? Status Number of Dominant Species 7___ (A) That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: (B) Percent of Dominant Species ____ = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: _____) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = ____ FACW species _____ x 2 = ____ ____ x 3 = ___ FAC species FACU species _____ x 4 = ____ Herb Stratum (Plot size: 10 - vad, = Total Cover ____ x 5 = ____ Column Totals: _____ (A) _____ (B) FACL FACE Prevalence Index = B/A = ___ FAC 20 Hydrophytic Vegetation Indicators: OPL 1 - Rapid Test for Hydrophytic Vegetation FAC 2 - Dominance Test is >50% N UPL 3 - Prevalence Index is ≤3.01 discolor FAC __ 4 - Morphological Adaptations¹ (Provide supporting

FACU

FIACI

= Total Cover

____= Total Cover

Remarks:

TOOCHAENS

Woody Vine Stratum (Plot size: ____)

% Bare Ground in Herb Stratum _____

data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

5 - Wetland Non-Vascular Plants1

Hydrophytic Vegetation Present?

		2	
Sampling	Point:		

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	Textur	e Remarks
0-12	10yr3/1	90	7.57r5/6	10		M	\mathcal{L}	
	1 1		/ /					
		-						
		-						
	·							
			, , , , , , , , , , , , , , , , , , ,					
			Reduced Matrix, CS			d Sand Gra		² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all L	RRs, unless other		ed.)		Indi	icators for Problematic Hydric Soils ³ :
Histosol		-	Sandy Redox (S					2 cm Muck (A10)
	pipedon (A2)	-	Stripped Matrix (Red Parent Material (TF2)
1	istic (A3)		Loamy Mucky M	-		MLKA 1)		Very Shallow Dark Surface (TF12)
1	en Sulfide (A4) d Below Dark Surfac	·ο (Δ11)	Loamy Gleyed N Depleted Matrix		,			Other (Explain in Remarks)
	ark Surface (A12)	ε (ΛΙΙ) .	Redox Dark Sur				3Ind	licators of hydrophytic vegetation and
	flucky Mineral (S1)		Depleted Dark S		7)			wetland hydrology must be present,
	Gleyed Matrix (S4)	•	Redox Depressi	•	.,			unless disturbed or problematic.
	Layer (if present):						T	
Type:								
Depth (in	ches):						Hydric	Soil Present? Yes No
Remarks:								
	100100000000000000000000000000000000000							
HYDROLO	GY							
Wetland Hy	drology Indicators							
1			; check all that apply)			5	Secondary Indicators (2 or more required)
	Water (A1)				s (BQ) (a)	rcent		Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)		,	, 2, 4A, a		copt	***	4A, and 4B)
Saturati			Salt Crust (na 4D)			Drainage Patterns (B10)
	larks (B1)		Aquatic Inv		s (B13)		_	Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen S				_	Saturation Visible on Aerial Imagery (C9)
I	posits (B3)		Oxidized R			ivina Root	ts (C3)	Geomorphic Position (D2)
	at or Crust (B4)		Presence o		-	_	10 (00) _	Shallow Aquitard (D3)
-	posits (B5)		Recent Iron		*	,) -	✓FAC-Neutral Test (D5)
1	Soil Cracks (B6)		Stunted or					Raised Ant Mounds (D6) (LRR A)
1 —	on Visible on Aerial	imagery (B7				., (=,	_	Frost-Heave Hummocks (D7)
1	y Vegetated Concav				,			
Field Obser		0 00.100 (2	,					
Surface Wat		/ec N	lo Depth (inc	hoe).		İ		
Water Table			lo Depth (inc					% .
						i	أأسيال المسأ	-1
Saturation P (includes car		es N	lo Depth (inc	nes):		- AAetia	ana Hyar	ology Present? Yes No
		gauge, mo	nitoring well, aerial p	hotos, pre	vious ins	pections), i	if available	e:
Remarks:	Λ.				i	i		\ (\(\frac{1}{2}\)
	water fl	wwy	in stream	Cha	innel	ody	acert	to plot
						•		•

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

Project/Site: APN: 212-142-007		City/County	v: Huml	Sampling Date: 5-9-19
Applicant/Owner: TRC		ony/odding	,	State: CM Sampling Point: 4
				nge: WS, T35, R3E
Landform (hillslope, terrace, etc.): Lillslope				
Subregion (LRR):	Late F	4322	47 4	Leng: N 4446833.4 Datum: NA) 83
Soil Map Unit Name: Coyolevale-				NWI classification:
Are climatic / hydrologic conditions on the site typical for t			,	
Are Vegetation, Soil, or Hydrology				Normal Circumstances" present? Yes No eded, explain any answers in Remarks.)
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site mai			,	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes	L/	j.	he Sampled	Area /
Wetland Hydrology Present? Yes	No X	with	hin a Wetlan	nd? YesNo
Remarks:				
VEGETATION – Use scientific names of pla	ınte			
	Absolute	Dominan	t Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				
3.				Total Number of Dominant Species Across All Strata: (B)
4				
751- 016		= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: 301- valus	10	Ų	FACU	Prevalence Index worksheet:
1. Querus garryma 2. Pseudolsz menzicsii			FACU	Total % Cover of: Multiply by:
3. unbelolog califorice		\	FAC	OBL species x 1 =
4.			1.70	FACW species x 2 =
5.				FAC species x 3 =
		= Total Co	over	FACU species x 4 =
Herb Stratum (Plot size: 10' - radus)			1.100	UPL species x 5 =
1. Briza maxima	— } —	40	A	Column Totals: (A) (B)
2. Dachilis glomerala		10	FACU	Prevalence Index = B/A =
3. Ins purcty; 4. Anthoxanthum odoralum	- 1	10	FACU	Hydrophytic Vegetation Indicators:
5. Morsalm sp	- \ \		UAL .	1 - Rapid Test for Hydrophytic Vegetation
6. Ranunula sp	- iv		3	2 - Dominance Test is >50%
7. Sistrinchian bellun	- W	7.	FACW	3 - Prevalence Index is ≤3.0¹ 4 Membelogical Adoptations¹ (Provide supporting
8. Vicia hirz-la	N	7-	DPL	 4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)
9. Elymus glavers	W	2	FACU	5 - Wetland Non-Vascular Plants ¹
10. Calocharlus tolmiei	W	2	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)
11. Tolohom sublerrance	_ ~	2	JYL	¹Indicators of hydric soil and wetland hydrology must
		= Total Co	ver	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1	-			Hydrophytic /
<u> </u>		= Total Co		Present? Yes No
% Bare Ground in Herb Stratum		- Total Co	ver	
Remarks:		, p		

_	-		
~	_		
•		41	

Sampling Point:

	• •	s and aspan in				he absence of indicators.)
Depth	Matrix		Redox Fea	atures		
(inches)	Color (moist)	<u>%</u> C	Color (moist)	% Type'	Loc ²	Texture Remarks
0-16	10,12/2					<u>CL</u>
	,					
		-				
	oncentration, D=Deple				d Sand Grai	
Hydric Soil	Indicators: (Application	ble to all LRR	ts, unless otherwise	noted.)		Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Sandy Redox (S5)						2 cm Muck (A10)
Histic Epipedon (A2) Stripped Matrix (S6)						Red Parent Material (TF2)
Black H	istic (A3)	_	Loamy Mucky Miner		MLRA 1)	Very Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed Matri			Other (Explain in Remarks)
1	d Below Dark Surface		Depleted Matrix (F3)			3
	ark Surface (A12)		Redox Dark Surface			³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)					wetland hydrology must be present,	
	Gleyed Matrix (S4)		Redox Depressions	(F8)		unless disturbed or problematic.
1	Layer (if present):					
						· · · · · · · · · · · · · · · · · · ·
Depth (in	iches):		-			Hydric Soil Present? Yes No
Remarks:						
1						
HYDROLC	IGY					
Wetland Hy	drology Indicators:					
Primary Indi	cators (minimum of on	ne required: ch				
	Water (A1)		eck all that apply)			Secondary Indicators (2 or more required)
1				eaves (B9) (e	xcept	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
g	` '		Water-Stained		xcept	Water-Stained Leaves (B9) (MLRA 1, 2,
Saturati	ater Table (A2)		Water-Stained MLRA 1, 2,	4A, and 4B)	xcept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturati	ater Table (A2) on (A3)		Water-Stained MLRA 1, 2, Salt Crust (B11	4A, and 4B)	xcept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Water N	ater Table (A2) ion (A3) Marks (B1)		Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Inverte	4A, and 4B)) brates (B13)	xcept	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Water N	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2)		MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic	4A, and 4B)) brates (B13) de Odor (C1)		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Water M Sedime Drift De	ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3)		Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo	4A, and 4B)) brates (B13) de Odor (C1) spheres along	Living Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) G(C3) Geomorphic Position (D2)
Water M Sedime Drift De Algal M	ater Table (A2) fon (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4)	Living Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Water M Sedime Drift De Algal M: Iron De	ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		MLRA 1, 2, MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tilled	Living Roots +) d Soils (C6)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Water M Sedime Drift De Algal M Iron De Surface	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)		Mater-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced iron (C4 duction in Tillee ssed Plants (D	Living Roots +) d Soils (C6)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Water M Sedime Drift De Algal M Iron De Surface	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im	nagery (B7)	MLRA 1, 2, MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced iron (C4 duction in Tillee ssed Plants (D	Living Roots +) d Soils (C6)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Water M Sedime Sedime Drift De Algal M Iron De Surface Inundati	ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave	nagery (B7)	Mater-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced iron (C4 duction in Tillee ssed Plants (D	Living Roots +) d Soils (C6)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Water M Sedime Drift De Algal M Iron De Surface	ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave	nagery (B7) Surface (B8)	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tillet ssed Plants (D in Remarks)	Living Roots i) d Soils (C6) 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Water M Sedime Sedime Drift De Algal M Iron De Surface Inundati	ater Table (A2) Ion (A3) Marks (B1) Int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) Ion Visible on Aerial Im y Vegetated Concave rvations: ter Present?	nagery (B7) Surface (B8)	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stree Other (Explain	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tiller ssed Plants (D in Remarks)	Living Roots i) d Soils (C6) 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel	ater Table (A2) Ion (A3) Marks (B1) Int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) Ion Visible on Aerial Im y Vegetated Concave rvations: ter Present?	nagery (B7) Surface (B8)	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tiller ssed Plants (D in Remarks)	Living Roots i) d Soils (C6) 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Water M Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser	ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave rvations: ter Present? Yes	nagery (B7) Surface (B8) es No _ es No _	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced fron (C4 duction in Tilled ssed Plants (D in Remarks)	Living Roots i) d Soils (C6) 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Water M Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave rvations: ter Present? Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes	nagery (B7) Surface (B8) es No _ es No _ es No _	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in Depth (inches) Depth (inches)	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tilled ssed Plants (D in Remarks)	Living Roots d Soils (C6) l) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Water M Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave rvations: ter Present? Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes	nagery (B7) Surface (B8) es No _ es No _ es No _	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in Depth (inches) Depth (inches)	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tilled ssed Plants (D in Remarks)	Living Roots d Soils (C6) l) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Water M Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave rvations: ter Present? Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes Present? Yes	nagery (B7) Surface (B8) es No _ es No _ es No _	Water-Stained MLRA 1, 2, Salt Crust (B11 Aquatic Invertel Hydrogen Sulfic Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain in Depth (inches) Depth (inches)	4A, and 4B)) brates (B13) de Odor (C1) spheres along duced Iron (C4 duction in Tilled ssed Plants (D in Remarks)	Living Roots d Soils (C6) l) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Appendix B. Comparison of 2014, 2016, and 2019 NAIP Images.



Appendix C. Comparison of 2014 and 2019 Google Earth Images.





Aquatic Resources Delineation September 2019
APN: 214-142-009 Appendix C

Appendix D. Representative Photos



Photo 1. Ephemeral stream flowing into Wetland 1, looking north from near the road.



Photo 2. Wetland 1, looking southwest towards greenhouses.



Photo 3. Wetland 2, looking south.



Photo 4. Ephemeral stream draining into Wetland 2, looking north.



Photo 5. Wetland 3, looking south from road.



Photo 6. Road drainage feature from Wetland 2, looking northeast.



Photo 7. Greenhouses adjacent to Wetland 1, looking west.



Photo 8. Cultivation area on fill in Wetland 1, looking east.



Photo 9. Intermittent stream through disturbed portion of Wetland 1, looking south from road.



Photo 10. Intermittent stream through disturbed portion of Wetland 1, looking north.