**VIA EMAIL** 

January 29, 2021

Mr. David Baldridge Chief, South Branch Regulatory Division U.S. Army Corps of Engineers Louisville District 600 Dr. Martin Luther King, Jr. Place Louisville, Kentucky 40202 David.E.Baldridge@usace.army.mil CELRL.Door.To.The.Corps@usace.army.mil

#### Subject: Request for Jurisdictional Determination – DRAFT Old Heady Property Jefferson County, Kentucky Redwing Project No.: 20-236

Dear Mr. Baldridge:

On behalf of Sunshine Builders, LLC, RES Kentucky, LLC dba Redwing (Redwing) is pleased to submit this Request for Jurisdictional Determination to the U.S. Army Corps of Engineers (USACE) for the approximately 55-acre project site located on the north side of Old Heady Road, immediately West of I-265 in Jefferson County, Kentucky (Figure 1). This report describes the location, extent, and characteristics of waters/wetlands that were delineated within the project boundary.

The project site consists primarily of upland mixed-age woods, maintained open field and old field habitat (Figure 2). Based on the water/wetland delineation, jurisdictional features on the site include six intermittent streams totaling 3,138 linear feet and one open water pond measuring 0.716 acre. The non-jurisdictional water/wetland features identified on site include 23 ephemeral streams totaling 2,611 linear feet (Figure 3). These ephemeral streams are considered non-jurisdictional features under the Navigable Waters Protection Rule (NWPR 2020). No wetlands were identified on site.

#### METHODOLOGY

Redwing wetland scientists conducted a delineation of the site on January 11, 2021. The wetland delineation was accomplished through documentation of the presence/absence of hydric soils, wetland hydrology, and hydrophytic vegetation according to the Routine On-Site Determination Method, as defined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (April 2012). The presence of open waters, such as streams and ponds, within the project boundary was determined based on ordinary high water mark (OHWM), defined bed and bank features, and flow regime.

#### RESULTS

Based on the water/wetland delineation, jurisdictional features on site include:

- six jurisdictional intermittent streams totaling 3,138 linear feet (0.406 acre)
- one open water pond measuring 0.716 acre

Non-jurisdictional water/wetland features identified during the field assessment include 23 ephemeral streams totaling 2,611 linear feet (0.097 acre). No wetlands were present. Wetland determination data were formally collected at four data points within the project boundary (Figure 3) and are attached as Appendix A. The quality of intermittent streams was assessed using Rapid Bioassessment Protocol (RBP) methodology established by the U.S. Environmental Protection Agency (USEPA). The RBP forms are provided as Appendix B. An Approved Jurisdictional Determination Form is provided as Appendix C. The results of the water/wetland delineation are summarized in Table 1 (attached), depicted on Figure 3, and discussed below.

**Intermittent Stream:** Six intermittent streams were identified during the field assessment. All of them generally flow eastward and contribute flow to downstream navigable waters via Shinks Branch, Chenoweth Run, and Floyds Fork. Thus, they are considered to be under USACE jurisdiction.

<u>Intermittent Stream 1</u> is three to seven feet wide with silt, sand, gravel, cobble and bedrock substrate. During the field assessment, Intermittent Stream 1 had flowing water at depths of up to six inches. One RBP point was assessed along Intermittent Stream 1 with a score of 104 which characterizes it as "Poor" quality.

<u>Intermittent Stream 2</u> is approximately seven feet wide with silt, sand, gravel, cobble, boulders and bedrock substrate. During the field assessment, Intermittent Stream 2 had flowing water at depths of up to six inches. Two RBP points were assessed along Intermittent Stream 2 with a score of 115 and 110 which characterizes it as "Poor" quality.

<u>Intermittent Stream 3</u> is three to five feet wide with silt, sand, gravel and cobble substrate. During the field assessment, Intermittent Stream 3 had flowing water at depths less than six inches. One RBP point was assessed along Intermittent Stream 3 with a score of 100 which characterizes it as "Poor" quality.

<u>Intermittent Stream 4</u> is two to four feet wide with silt, sand, gravel and cobble substrate. During the field assessment, Intermittent Stream 4 had flowing water at depths less than six inches. One RBP point was assessed along Intermittent Stream 4 with a score of 115 which characterizes it as "Poor" quality.

<u>Intermittent Stream 5</u> is three to six feet wide with silt, sand, gravel, cobble and bedrock substrate. During the field assessment, Intermittent Stream 5 had flowing water at depths less than six inches. One RBP point was assessed along Intermittent Stream 5 with a score of 98 which characterizes it as "Poor" quality.

<u>Intermittent Stream 6</u> is two to five feet wide with silt, sand, gravel and cobble substrate. During the field assessment, Intermittent Stream 6 had flowing water at depths less than six inches. One RBP point was assessed along Intermittent Stream 6 with a score of 66 which characterizes it as "Poor" quality.

**Ephemeral Streams:** A total of 23 ephemeral streams were identified within the project boundary. The ephemeral streams are approximately one to two feet wide with bank heights ranging from one to two feet. The substrates consist primarily of silt with scattered gravel and cobble. Only shallow isolated standing pools of water were observed within the banks of the ephemeral streams during the field assessment, confirming that they only flow in direct response to precipitation. Thus, they are considered non-jurisdictional features under the NWPR.

Wetlands: No wetlands were identified on the site during the field assessment.

General site characteristics of soil, hydrology, and vegetation for the project are discussed below.

**Soils:** The USDA Soil Survey Geographic Database for Jefferson County, Kentucky maps the site as being underlain primarily by Beasley silt loam, Crider silt loam, Nicholson silt loam, and Shrouts silt loam (Figure 4). None of these soils are listed on the Hydric Soil List for Jefferson County, Kentucky. No hydric soil indicators were observed on site.

**Hydrology:** The main sources of hydrology to the site include direct precipitation and surface runoff from adjacent areas. The site is not located within the 100-year floodplain (Figure 5). No wetland hydrology indicators were observed at the four wetland data point locations.

**Vegetation:** The project boundary consists primarily of mixed-age upland woods, maintained open field, and old field habitat (Figure 2). No wetland plant communities were observed.

Common species in the upland woods habitat include: eastern red cedar (*Juniperus virginiana*), bush honeysuckle (*Lonicera maackii*), chinkapin oak (*Quercus muehlenbergii*), white oak (*Quercus alba*) and shagbark hickory (*Carya ovata*). These species are listed as upland (UPL) and facultative upland (FACU), in the National Wetland Plant List: Eastern Mountain and Piedmont Final Regional Wetland Plant List – 2018, Version 3.4 (NWPL).

Common species in the maintained open field habitat include: tall fescue (*Schedonorus arundinaceus*), yellow foxtail (*Setaria pumila*), nodding foxtail (*Setaria faberi*), broomsedge (*Andropogon virginicus*), and white clover (*Trifolium repens*). These species are listed as UPL, FACU, and facultative (FAC) in the NWPL.

Common species in the old field habitat include: eastern red cedar, tall fescue, yellow foxtail, nodding foxtail, broomsedge, Johnson grass (*Sorghum halepense*), multiflora rose (*Rosa multiflora*), and green ash (*Fraxinus pennsylvanica*). These species are listed as UPL, FACU, and FAC in the NWPL.

**Open Water:** Open Water Pond 1 is located in the south-central portion of the site. It measures 0.716 acre with an estimated maximum depth of eight feet and a primarily silt substrate. Pond 1 is hydrologically supplied by surface water and flows directly discharged from Intermittent Stream 5. The pond outlets to Intermittent Stream 6 via a culvert located in the southwest corner of the pond. This feature is considered jurisdictional based on its immediate downstream connection to Intermittent Stream 6.

#### CONCLUSION

This water/wetland delineation identified six jurisdictional intermittent streams totaling 3,138 linear feet (0.406 acre) and one open water pond measuring 0.716 acre within the project boundary. The non-jurisdictional water/wetland features identified during the field assessment include 23 ephemeral streams totaling 2,611 linear feet (0.097 acre). As the USACE holds final authority over determinations of the extent and location of jurisdictional water/wetlands, we respectfully request USACE verification of delineated water/wetland boundaries and issuance of an Approved Jurisdictional Determination for the property.

We appreciate your review of this request. Please contact Rich Fangman or Ronald Thomas at (502) 625-3009 with any questions regarding this report or the overall project.

Sincerely,



Richard J. Fangman Project Manager I

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Ronald L. Thomas Senior Project Manager

cc: Mr. Damon Garrett - Sunshine Builders, LLC

Attachments: Table Figures Photographs Appendix A: Wetland Determination Data Forms Appendix B: Rapid Bioassessment Protocol Form Appendix C: Approved Jurisdictional Determination Form (Interim)

# TABLE

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# Table 1: Water/Wetland SummaryOld Heady PropertyJefferson County, KentuckyRedwing Project: 20-236

Footuro	Stream	Stream Width	Area (aarea)	Endoral Status	
Feature	Length (feet)	(feet)	Area (acres)	reueral Status	
Intermittent Stream 1	175	5	0.020	Jurisdictional	
Intermittent Stream 2	1,789	7	0.287	Jurisdictional	
Intermittent Stream 3	102	4	0.009	Jurisdictional	
Intermittent Stream 4	458	3	0.032	Jurisdictional	
Intermittent Stream 5	365	4.5	0.038	Jurisdictional	
Intermittent Stream 6	249	3.5	0.020	Jurisdictional	
Intermittent Stream Total	3,138		0.406		
Ephemeral Stream 1	84	1	0.002	Non-Jurisdictional	
Ephemeral Stream 2	289	2	0.013	Non-Jurisdictional	
Ephemeral Stream 3	21	1.5	0.001	Non-Jurisdictional	
Ephemeral Stream 4	412	2	0.019	Non-Jurisdictional	
Ephemeral Stream 5	175	1.5	0.006	Non-Jurisdictional	
Ephemeral Stream 6	94	2	0.004	Non-Jurisdictional	
Ephemeral Stream 7	26	2.5	0.001	Non-Jurisdictional	
Ephemeral Stream 8	38	1.5	0.001	Non-Jurisdictional	
Ephemeral Stream 9	111	1.5	0.004	Non-Jurisdictional	
Ephemeral Stream 10	120	1.5	0.004	Non-Jurisdictional	
Ephemeral Stream 11	169	1.5	0.006	Non-Jurisdictional	
Ephemeral Stream 12	97	1	0.002	Non-Jurisdictional	
Ephemeral Stream 13	76	1.5	0.003	Non-Jurisdictional	
Ephemeral Stream 14	139	1.5	0.005	Non-Jurisdictional	
Ephemeral Stream 15	81	1.5	0.003	Non-Jurisdictional	
Ephemeral Stream 16	167	1.5	0.006	Non-Jurisdictional	
Ephemeral Stream 17	120	1	0.003	Non-Jurisdictional	
Ephemeral Stream 18	65	1.5	0.002	Non-Jurisdictional	
Ephemeral Stream 19	45	2	0.002	Non-Jurisdictional	
Ephemeral Stream 20	95	2	0.004	Non-Jurisdictional	
Ephemeral Stream 21	21	1	0.000	Non-Jurisdictional	
Ephemeral Stream 22	31	2	0.001	Non-Jurisdictional	
Ephemeral Stream 23	135	1.5	0.005	Non-Jurisdictional	
Ephemeral Stream Total	2,611		0.097		
Open Water 1			0.716	Jurisdictional	
Jurisdictional Open Water Total			0.716		
Jurisdictional Features Total	3,138		1.122		

# FIGURES

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Source: USGS 7.5-minute Topographic Map - Jeffersontown and Fisherville, Kentucky Quadrangle.



Source: Aerial - kyraster.ky.gov (2018).



Source:	Aerial - kyraster.ky.gov (2019).	
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		The loss	31			
Feature	Stream Length (feet)	Stream Width (feet)	Area (acres)	Federal Status		
Intermittent Stream 1	175	5	0.020	Jurisdictional		and the second
Intermittent Stream 2	1,789	7	0.287	Jurisdictional		
Intermittent Stream 3	102	4	0.009	Jurisdictional		1999 to an and the second second
Intermittent Stream 4	458	3	0.032	Jurisdictional		
Intermittent Stream 5	365	4.5	0.038	Jurisdictional		
Intermittent Stream 6	249	3.5	0.020	Jurisdictional		and the second of the second second
Intermittent Stream Total	3,138		0.406			EPH 5
Ephemeral Stream 1	84	1	0.002	Non-Jurisdictiona	EPH 6	
Ephemeral Stream 2	289	2	0.013	Non-Jurisdictiona		EPH 4
Ephemeral Stream 3	21	1.5	0.001	Non-Jurisdictiona		EDU 0
Ephemeral Stream 4	412	2	0.019	Non-Jurisdictiona	FPH7	CPI 2
Ephemeral Stream 5	1/5	1.5	0.006	Non-Jurisdictiona		
Ephemoral Stream 7	94	25	0.004	Non-Jurisdictiona		FRUG
Ephemeral Stream 8	38	2.5	0.001	Non-Jurisdictiona		ЕРН 8
Ephemeral Stream 9	111	1.5	0.001	Non-Jurisdictiona		
Ephemeral Stream 10	120	1.5	0.004	Non-Jurisdictiona	RBP2	EPH 3 / IN
Ephemeral Stream 11	169	1.5	0.006	Non-Jurisdictiona		A DEPARTURE SALES
Ephemeral Stream 12	97	1	0.002	Non-Jurisdictiona		A BAR AND A BAR AND A SHARE
Ephemeral Stream 13	76	1.5	0.003	Non-Jurisdictiona		EDH 9
Ephemeral Stream 14	139	1.5	0.005	Non-Jurisdictiona		LPHZ
Ephemeral Stream 15	81	1.5	0.003	Non-Jurisdictiona	RBP 3-	
Ephemeral Stream 16	167	1.5	0.006	Non-Jurisdictiona	DP3-	/ ODP2
Ephemeral Stream 17	120	1	0.003	Non-Jurisdictiona		— EPH 18
Ephemeral Stream 18	65	1.5	0.002	Non-Jurisdictiona	EPH 9	
Ephemeral Stream 19	45	2	0.002	Non-Jurisdictiona		
Ephemeral Stream 20	95	2	0.004	Non-Jurisdictiona		P RBP
Ephemeral Stream 21	21	1	0.000	Non-Jurisdictiona		
Ephemeral Stream 22	31	2	0.001	Non-Jurisdictiona	INT 3	
Ephemeral Stream 23	135	1.5	0.005	Non-Jurisdictiona	EPH 10 -/ EPH 10 -/	
Ephemeral Stream Total	2,611		0.097			
Open Water 1			0.716	Jurisdictional	EDU 44	EPH12
isdictional Open Water Total			0.716		- EPH 22 EPH 11	
urisdictional Features Total	3,138		1.122			
					EPH 20- EPH 19-	EPH 14
egend	_))			UN	OW 1 EPH 23 INT 6	
	Devedenc				STATISTICS AND STATISTICS	A CONTRACTOR CONTRACTOR
	Doundary		180	al man		
Open Water Pond			- 10 Ka	and a		
- Intermittant Stream			160	BALL	RBP 7	
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Wetland Determination	on Data Po	oint 🚺 🧖		Section 1		
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<ul> <li>Rapid Bioassessmer</li> </ul>	It Protocol	Point	1. 22	2 22 34		are.
			P. Martin			
and the second	and the second	All and a	EChar/	1 mil All		
						OLD HEADY PROPE
					NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE	JEFFERSON COUNTY. K
125 250	500	750	)	1,000	JANUARY 11, 2021. THESE BOUNDARIES HAVE NOT BEEN	
				Feet	VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS	
					MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.	
						BEVISED DATE: 01-22-21 DBAWN

Received April 19, 2021





Source: Aerial - kyraster.ky.gov (2018); Soil Survey Geographic (SSURGO) database for Jefferson County, Kentucky (2008).

Source: Aerial - kyraster.ky.gov (2018); FEMA National Flood Hazard Layer (NFHL) (2015).



# **PHOTOGRAPHS**

Received April 19, 2021 Planning & Design

21-ZONE-00016

![](_page_13_Picture_0.jpeg)

![](_page_13_Picture_2.jpeg)

Photograph 2: General view of the maintained open field habitat located throughout the site. January 11, 2021.

![](_page_14_Picture_0.jpeg)

Photograph 3: General view of the old field habitat located throughout the site. January 11, 2021.

![](_page_14_Picture_2.jpeg)

Photograph 4: Open Water Pond 1 is located in the south-central portion of the site. January 11, 2021.

![](_page_15_Picture_0.jpeg)

Photograph 5: Downstream view of Ephemeral Stream 11. This is a representative view of the on-site ephemeral streams. These streams did not have flowing water at the time of the field assessment. January 11, 2021.

![](_page_15_Picture_2.jpeg)

Photograph 6: Downstream view of Intermittent Stream 2 in the central portion of the site. Downstream waters continue off site and flow under I-265 and into Shinks Branch. January 11, 2021.

# **APPENDIX A**

## WETLAND DETERMINATION DATA FORMS

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#### WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Old Heady Property		City/County: L	ouisvulle/Jeffer	rson Sampling Da	ate: 1/11	/21
Applicant/Owner:	Sunshine Builders, LL	C		State: Kentud	cky	Sampling Point:	DP1
Investigator(s):	R. Fangman/Z. Triplett			Section,	, Township, Range:		
Landform (hillslop	e, terrace, etc.):	side slope	Local relief (concave,	convex, none)	): concave	Slope (%):	2
Subregion (LRR o	r MLRA) LRR N	Lat.: 38.17245	6	Long.: -85.51	8250	Datum:	
Soil Map Unit Nan	ne: FsF - Faywood-Shrout	s-Beasley complex, 25 to 50	percent slopes		NWI Class	ification:	
Are climatic/hydro	logic conditions of the site ty	pical for this time of the year	?	Yes (	(If no, explain in remarks)		
Are vegetation	, soil	, or hydrology	significantly dist	urbed?	Are "normal cire	cumstances"	
Are vegetation	, soil	, or hydrology	naturally probler	natic?	present?		Yes
					(If needed, expla	ain any answers in re	marks)

### SUMMARY OF FINDINGS

Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?	No No No	Is the Sampled Area within a Wetland?	No
Remarks: (Explain alternative procedure Upland data point	s here or in a separate repor	t.)	

#### HYDROLOGY

Wetland Hydrology Indi	cators							
Primary Indicators (minimum of	of one is required; check	all that ap	ply)			Secondary Indicators (minimum of two required)		
Surface Water (A1)			True Aquatic Plants (B14)			Surface Soil Cracks (B6)		
High Water Table (A	(2)	Hydrogen Sulfide Odor (C1)				Sparsely Vegetated Concave Surface (B8)		
Saturation (A3)			Oxidize	d Rhizospheres on L	iving Roots (C3)	Drainage Patterns (B10)		
Water Marks (B1)			Presend	ce of Reduced Iron (0	24)	Moss Trim Lines (B16)		
Sediment Deposits (	(B2)		Recent	Iron Reduction in Till	ed Soils (C6)	Dry-Season Water Table (C2)		
Drift Deposits (B3)			Thin Mu	ick Surface (C7)		Crayfish Burrows (C8)		
Algal Mat or Crust (E	34)		Other (E	Explain in Remarks)		Saturation Visible on Aerial Imagery (C9)		
Iron Deposits (B5)			•			Stunted or Stressed Plants (D1)		
Inundation Visible or	n Aerial Imagery (B7)					Geomorphic Position (D2)		
Water-Stained Leav	es (B9)					Shallow Aquitard (D3)		
Aquatic Fauna (B13	)					Microtopographic Relief (D4)		
						FAC-Neutral Test (D5)		
Field Observations:								
Surface water present?	Yes	No	Х	Depth (inches):	N/A	Wetland		
Water table present?	Yes	No	Х	Depth (inches):	>14	hydrology		
Saturation present?	Yes	No	Х	Depth (inches):	>14	present? No		
(includes capillary fringe)		-				·		
Describe recorded data (strea	m gauge, monitoring wel	l, aerial ph	otos, pre	evious inspections), il	<sup>:</sup> available:			
Remarks:								
US Anny Corps of Eng	April 19, 20	21	Pla	anning & D	esign	21-ZONE-00916 Eastern Mountains and Pleamont Version 2.0		

### **VEGETATION (Four Strata) -- Use scientific names of plants**

VEGETATION (Four Strata)	Use scientific r	na <u>mes of pla</u>	nts	Sampling Point:	DP1
				Dominance Test Worksheet	
Tree Stratum Plot Size (30')	Absolute %	Dominant	Indicator		
1	Cover	Species	Status	Number of Dominant Species that are OBL, FACW, or FAC: 0	)(A)
23				Total Number of Dominant Species Across all Strata: 3	
4					(=)
5 6				Percent of Dominant Species that are OBL, FACW, or FAC: 0.00	<u>0% (</u> A/B)
8				Prevalence Index Worksheet	
9				Total % Cover of:	
10				OBL species x 1 =	
	0 =	Total Cover		FACW species x 2 =	
		Densinent	la di sata a	FAC species x 3 =	
Stratum Plot Size (15')	Absolute %	Species	Status	FACU species x 4 =	
1	00101	opeoles	Oldius	Column totals (A)	(P)
2					(B)
3					
4					
5				Hydrophytic Vegetation Indicators:	
6				1 - Rapid test for hydrophytic vegetat	tion
7				2 - Dominance test is >50%	
8				3 - Prevalence index is ≤3.0*	
9				4 - Morphological adaptations* (provi	ide
10				supporting data in Remarks or on a	
	0 =	Total Cover		separate sheet)	
				Problematic hydrophytic vegetation*	
Herb Stratum Plot Size (5')	Absolute %	Dominant	Indicator	(explain)	
	Cover	Species	Status	*Indicators of hydric soil and wetland	I
1 Schedonorus arundinaceus	40	Yes	FACU	hydrology must be present, unless	
2 Setaria faberi	20	Yes	UPL	disturbed or problematic	
3 Sorghum halepense	20	Yes	FACU		
4 Setaria pumila	10	No	FAC	Definitions of Four Vegetation Strate	
5				Definitions of Four vegetation Strata	
7					
8					
9					
10				Tree - Woody plants 3 in. (7.6 cm) or more in di	iameter at
11				breast height (DBH), regardless of height.	
12				Sapling/shrub - Woody plants less than 3 in. D	)BH and
13				greater than 3.28 ft (1 m) tall.	
14				Harb All borbassous (non woody) planta raga	ordiooo of oizo
15				and woody plants less than 3.28 ft tall.	Indiess of size,
	90 =	Total Cover			
				Woody vines - All woody vines greater than 3.2	28 ft in height.
Woody Vine Stratum Plot Size (30')	Absolute %	Dominant	Indicator		
4	Cover	Species	Status		
1					
2					
۵ ۸					
т				Hydrophytic	
۶		Total Cover		vegetation	
Remarks: (Include photo numbers here or o	on a separate sheet)				

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Profile Descrip	otion: (Describe to	the depth	needed to document	the indica	tor or conf	irm the ab	sence of indicators.)	
Depth	Depth Matrix Redox Fea		lox Featu	res		Texture	Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Keniaks
0-6	2.5Y 3/3	100					silty clay	
6-14	10YR 4/3	60	2.5Y 5/3	40	С	М	silty clay	
<sup>1</sup> Tvpe: C=Con	centration. D=Dep	letion. RN	=Reduced Matrix. MS	=Masked	Sand Grai	ins - <sup>2</sup> Loca	tion: PL=Lining, M=Matrix	
Hvdric Soil In	dicators:					- 2000	Indicators for Proble	ematic Hvdric Soils:
Histi	sol (A1)		Darl	k Surface	(S7)			2 cm Muck (A10) (MLRA 147)
Histi	c Epipedon (A2)		Poly	value Bel	low Surfac	e (S9) <b>(M</b>	_RA 147, 148)	Coast Prairie Redox (A16)
Blac	k Histic (A3)			Dark Su	rface (S9)	(MI RA 14	17 148)	(MI BA 147, 148)
Blac	rogen Sulfide (A4)		l	my Glava	d Matrix (E	(III _ I U I I I :2)	, , , , , , , , , , , , , , , , , , , ,	Piedmont Floodplain Soils (F19)
Strai	tified Lavors (A5)			lotod Mot		2)		
2 cm	n Muck (A10) (I RE	PN)	Dep	lov Dork	LIX (I J) Surfaco (E6	3)		Von Shallow Dark Surface (TE12)
Don	loted Bolow Dark S	Surface (A	11) Den	lotod Dor		) (E7)		Other (Evaluin in Remarka)
		5011ace (A	11)Dep	leteu Dai		(F7)		
Thic	k Dark Sunace (A dv Muck Mineral (S	12) 31) <b>(I PP I</b>		Mangane	SSIUIS (FO	e (E12) <b>(I</b> )		
					ese masse	5 (I IZ) <b>(</b> L		
	(A 147, 140)	、 、	WL	KA 130) aria Surfa	00 (E12) (	MI DA 426	100	
San	dy Gley Matrix (S4)	)	Um	Jine Surra	ce (FIS) (I	VILKA 130	NI DA 149)	*Indicators of hydrophytic vegetation
	ay Redox (S5)				ouplain Sc Astarial ( E	DIIS (F 19) (	WILKA 140)	and wetland hydrology must be
Strip	ped Matrix (S6)		Red	Parent IV	iateriai ( F.	21) (WLRA	A 127, 147)	present, unless disturbed or
								problematic
						r —		
Restrictive La	ayer (if observed)	:						
Туре:					_	Hy	dric soil present?	No
Depth (inches	):				_			
Remarks:								
1								
1								

![](_page_19_Picture_4.jpeg)

#### WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Old Heady Property		City/County: L	ouisvulle/Jeffe	rson	Sampling Dat	te: 1/11	/21
Applicant/Owner:	Sunshine Builders, LL	C		State: Kentu	icky		Sampling Point:	DP2
Investigator(s):	R. Fangman/Z. Triplett			Section	i, Township,	Range:		
Landform (hillslop	e, terrace, etc.):	terrace	Local relief (concave,	convex, none	e):	none	Slope (%):	1
Subregion (LRR o	r MLRA) LRR N	Lat.: 38.17225	3	Long.: -85.52	21867	I	Datum:	
Soil Map Unit Nan	ne: ShD3 - Shrouts silt loa	am, 12 to 25 percent slopes, s	everely eroded, very	rocky		NWI Classif	ication:	
Are climatic/hydro	logic conditions of the site t	ypical for this time of the year?	?	Yes	(If no, expla	in in remarks)		
Are vegetation	, soil	, or hydrology	significantly dist	urbed?	A	Are "normal circu	umstances"	
Are vegetation	, soil	, or hydrology	naturally probler	natic?	р	oresent?		Yes
					(I1	f needed, explai	in any answers in re	marks)

### SUMMARY OF FINDINGS

Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?	No No	Is the Sampled Area within a Wetland?	No
Remarks: (Explain alternative procedures Upland data point	s here or in a separate report.	)	

#### HYDROLOGY

Wetland Hydrology Ind	icators							
Primary Indicators (minimum	of one is required; che	ck all that app	ly)			Secondary Indicators (minimum of two required)		
Surface Water (A1) True Aquatic Plants (B14)						Surface Soil Cracks (B6)		
High Water Table (A	A2)		Hydroge	en Sulfide Odor (C1)		Sparsely Vegetated Concave Surface (B8)		
Saturation (A3)			Oxidize	d Rhizospheres on Livi	ing Roots (C3)	Drainage Patterns (B10)		
Water Marks (B1)			Presend	e of Reduced Iron (C4	ł)	Moss Trim Lines (B16)		
Sediment Deposits	(B2)		Recent	Iron Reduction in Tilled	d Soils (C6)	Dry-Season Water Table (C2)		
Drift Deposits (B3)			Thin Mu	ick Surface (C7)		Crayfish Burrows (C8)		
Algal Mat or Crust (I	B4)		Other (E	Explain in Remarks)		Saturation Visible on Aerial Imagery (C9)		
Iron Deposits (B5)						Stunted or Stressed Plants (D1)		
Inundation Visible o	n Aerial Imagery (B7)					Geomorphic Position (D2)		
Water-Stained Leav	res (B9)					Shallow Aquitard (D3)		
Aquatic Fauna (B13	)					Microtopographic Relief (D4)		
						FAC-Neutral Test (D5)		
Field Observations:								
Surface water present?	Yes	No	х	Depth (inches):	N/A	Mada and		
Water table present?	Yes	No	Х	Depth (inches):	>14	bydrology		
Saturation present?	Yes	No	X	Depth (inches):	>14	present? No		
(includes capillary fringe)								
Describe recorded data (strea	m gauge, monitoring v	vell, aerial pho	otos, pre	vious inspections), if a	available:			
Remarks:								

### **VEGETATION (Four Strata) -- Use scientific names of plants**

The Stratum         Piot Size (20)         Absolute %         Dominant         Indicator           1         Jungerous virginiana         40         Yea         FACU         Total Number of Dominant Species           2         Jungerous virginiana         10         No         FACU         Total Number of Dominant Species           3         Yea         FACU         FACU         Total Number of Dominant Species           4         Bendra rigon         10         No         FACU         Total Number of Dominant Species           5	VEGETATION (Four Strata) -	<ul> <li>Use scientific r</li> </ul>	names of pla	ints	Sampling Point: DP2	
The Stratum         Post Size (307)         Absolute %         Dominant Spaces         Indicator Spaces         Number of Dominant Species           1         Angewark reginants         40         Yes         FACW         Stratus           3         Facult         FACW         Facult         Spaces         Accession         5         (h)           3         Facult         FACW         Facult         Spaces         Accession         5         (h)           3         Facult Spaces         10         No         FACW         Spaces         Spaces         (h)         Total Number of Dominant Spaces         Intervent of Dominant Spaces         I					Dominance Test Worksheet	
dubberus organisana         40         Yes.         FACU         That are Cell, FACU, or FACL         2         (A)           2         Jimas amonganisana         30         Yes.         FACU         Total Mumber of Dominant         5         (B)           3         Betus migra         10         No         FACW         Total Mumber of Dominant         5         (B)           4         Betus migra         10         No         FACW         Total S Cover of Comment Special         5         (A)         (A)           5         Satisficitad         96         = Total Cover         FACW         FACW for Size (S)         4         -	Tree Stratum Plot Size (30')	Absolute % Cover	Dominant Species	Indicator Status	Number of Dominant Species	
2         Units at Member of a Stratum         30         Yes         FACW FACW FACW         FACW FACW         Total Number of Damiant         5         (6)           3         Fradmar persynamica         10         No         FACW         Species Across all Stratus         5         (6)           4         Betuis rigro         10         No         FACW         Species Across all Stratus         5         (6)           7         Section Stratus         5         (6)         Prevalence Index Mortaheet         7           8         Stational Strick         Pick Store of:         40.00%         (A8)         7           1         Lonicer maacki         00         Yes         UPL         7         2         (6)           3         Macoluto %         Dominant         Indicator         Status         (7)         4         (8)           1         Lonicer maacki         00         Yes         UPL         7         4         (8)           2         Status         Status         Status         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)         (1)	1 Juniperus virginiana	40	Yes	FACU	that are OBL, FACW, or FAC: 2	(A)
a       15       No       FACW       Species Across al Strata:       5       (6)         Betule rigro       10       No       FACW       Species Across al Strata:       5       (6)         Betule rigro       10       No       FACW       Species Across al Strata:       5       (6)         Betule rigro       10       No       FACW       Species Across al Strata:       5       (A)         Betule rigro       10       10       Species Across al Strata:       10       200%       (A)         Betule rigro       10       15       Total % Cover of       OB, species       x = 1       PAC species       PAC species       x = 1       PAC species       PAC species       x = 1       PAC species       PAC species       PAC species       PAC species       R = 1       PAC species       PAC species       PAC species       PAC species       PAC species       PAC species       PAC species<	2 Ulmus americana	30	Yes	FACW	Total Number of Dominant	_``
<ul> <li></li></ul>	3 Fraxinus pennsylvanica	15	No	FACW	Species Across all Strata: 5	(B)
s	4 Betula nigra	10	No	FACW		_``
g	5				Percent of Dominant Species	
7       3       3       10	6				that are OBL. FACW. or FAC: 40.00%	(A/B)
8	7					
9	8				Prevalence Index Worksheet	
10       95       = Total Cover       OBL species       x 1 = FACK species         Statum       Pict Size (15)       Absolute %       Dominant       Indicator         1       Lonicera mackil       00       Yes       UPL         3       00       Total Cover       Provalence index = B/A =         4       00       Yes       UPL         5       00       Total Cover       Provalence index = B/A =         6       00       Yes       UPL         7       00       Boot Stratum       Provalence index is 50%         10       80       = Total Cover	9				Total % Cover of:	
95       =       Total Cover         Stabiling(Shud).       Piot Size (15)       Absolute %       Dominant       Indicator         Stabiling(Shud).       FAC(S species       x 3 =       FAC(S species       x 4 =         1       Loncera masckii       60       Yes       UPL       UPL species       x 5 =       (A)         2	10				OBL species x 1 =	
SandingShrub Bitation       Plot Size (15)       Absolute % Cover       Dominant Species       Indicator Status       FAC species       x 4 =		95 =	Total Cover		FACW species x 2 =	_
Saturalization Stratum       Plot Size (15')       Absolute % Cover       Dominant Spaces       Indicator Status       FACU species       x 4 =					FAC species x 3 =	_
Stratum       Piot Size (15)       Cover       Species       Status         1       Lonicera maecki       60       Yes       UPL         3       60       Yes       UPL         3       60       Yes       UPL         4	Sapling/Shrub	Absolute %	Dominant	Indicator	FACU species x 4 =	_
1       Lonicera meackii       60       Yes       UPL       Column totals       (A)       (B)         2	Stratum Plot Size (15')	Cover	Species	Status	UPL species $x_5 =$	-
2       100       00       00       100       100       100       100       100       100       100       100       100       100       100       20       20       100       20       20       100       20       20       100       20       20       100       20	1 Lonicera maackii	60	Yes	LIPI	Column totals (A)	(B)
3	2		100	012	$\frac{B}{A} = \frac{B}{A}$	_(")
4	3			·		-
S	4					
0       0       0       1       - Rapid test for hydrophylic vegetation         7       - </td <td>5</td> <td></td> <td></td> <td></td> <td>Hydrophytic Vegetation Indicators:</td> <td></td>	5				Hydrophytic Vegetation Indicators:	
0       1	6				1 - Ranid test for hydronhytic vegetation	
8	7				2 - Dominance test is >50%	
0       0	8				$3 - $ Prevalence index is $\leq 3.0^*$	
0	°				4 - Morphological adaptations* (provide	
Image: separate sheet)       separate sheet)         Herb Stratum       Plot Size (5)       Absolute %       Dominant       Indicator         1       Lonicera maeckii       10       Yes       UPL       Problematic hydrophytic vegetation*         2       Carex blanda       5       Yes       FAC       Indicator       Indicator of hydric soil and wetland hydrology must be present, unless disturbed or problematic         4       5       No       UPL       UPL       Definitions of Four Vegetation Strata         5	9				supporting data in Remarks or on a	
	10		Total Cover		separate sheet)	
Herb Stratum       Plot Size (5')       Absolute % Cover       Dominant Species       Indicator         1       Lonicera mackii       10       Yes       UPL         2       Carex blanda       5       Yes       FAC         3       Euonymus fortunei       3       No       UPL         6						
Hath Stratum       Plot Size (5')       Absolute %       Dominant       Indicator       (explain)         1       Lonicera maackii       10       Yes       UPL       *Indicators of hydric soil and wetland hydrology must be present, unless         2       Carex blanda       5       Yes       FAC         3       Euronymus fortunei       3       No       UPL         4		A h = = h + h = 0/	Densinent	la di sata a	Problematic hydrophytic vegetation*	
1       Lonicera maackii       10       Yes       UPL       "Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic         2       Carex blanda       5       Yes       UPL       hydrology must be present, unless disturbed or problematic         3       Euonymus fortunei       3       No       UPL       Definitions of Four Vegetation Strata         4	Herb Stratum Plot Size (5')	ADSOIUTE %	Dominant	Status	(explain)	
1       Londreid Indextun       10       Tes       OPL       hydrology must be present, unless         2       Carex blanda       5       Yes       FAC       disturbed or problematic         3       Euonymus fortunei       3       No       UPL       Definitions of Four Vegetation Strata         6	1 Lonicoro mocolii	10	Vee		*Indicators of hydric soil and wetland	
2       2       2       3       No       UPL         3       No       UPL       Definitions of Four Vegetation Strata         6			Yes		hydrology must be present, unless	
3		5	Yes	FAC	disturbed or problematic	
4		3	NO	UPL		
0	4				Definitions of Four Venetation Otanta	
o	5				Definitions of Four vegetation Strata	
1	6					
8	/					
9	8	·				
10       Inter-troop pains on the first of the damage of the	9	·			<b>Tree</b> - Woody plants 3 in (7.6 cm) or more in diamet	er at
11	10				breast height (DBH), regardless of height.	er at
12	11	·			5 ( ), 5 5	
13	12				Sapling/shrub - Woody plants less than 3 in. DBH ar	nd
14	13				greater than 3.28 ft (1 m) tall.	
15	14				Harb All berbasses (non-weaks) plants, recording	
18       = Total Cover         Woody Vine Stratum       Plot Size (30')         Absolute %       Dominant         Secies       Status         Moody vines - All woody vines greater than 3.28 ft in height.         Moody vines       Hydrophytic         Void       Vine Stratum         No       No	15				and woody plants less than 3 28 ft tall	s of size,
Woody Vine Stratum       Plot Size (30')       Absolute % Cover       Dominant Species       Indicator Status         1		18 =	Total Cover			
Woody Vine Stratum       Plot Size (30')       Absolute % Cover       Dominant Species       Indicator Status         1					Woody vines - All woody vines greater than 3.28 ft ir	n height.
1	Woody Vino Stratum Plot Sizo (30')	Absolute %	Dominant	Indicator		
1	woody ville Stratum Plot Size (50)	Cover	Species	Status		
2 3 4 5 	1					
3	2					
4	3					
5     0     =     Total Cover     rygropnytic       0     =     Total Cover     vegetation       present?     No	4				Hydrophytic	
0     =     Total Cover     vegetation       0     =     Total Cover     present?     No	5				nyurophytic vegetation	
Remarks: (Include photo numbers here or on a separate sheet)		0 =	Total Cover		present? No	
Remarks: (Include photo numbers here or on a separate sheet)						
	Remarks: (Include photo numbers here or o	n a separate sheet)				

Depth	Matrix		Re	dox Featu	res		Texture	Remarks
Inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/3	100					silty clay loam	
4-14	2.5Y 6/4	100					silty clay loam	
				-				
				-				
			De duce d Metric MC				tions DI - Linin n. MA-Mastria	
e: C=Cor	icentration, D=Dep	letion, RM	Reduced Matrix, MS	S=Masked	Sand Grai	ns - "Loca	tion: PL=Lining, M=Matrix	
IC SOIL II	idicators:						Indicators for Prob	iematic Hydric Solis:
	icel (A1)		5	dr C	(07)			2 cm Muck (A10) (MI DA 447)
Hist	isul (A1)		Da	K Surface	(SI) Iow Surfee	0 (SO) /M	DA 147 149	
	k Histic (A2)			n Dark Su	rface (SO)	(09) (IVII (MI PA 4)	-ma 147, 140) 17 148)	
Blac	K HISUC (A3)			- I nin Dark Surface (S9) (MLRA 147, 148)			(MLRA 147, 148) Diadment Floodulain Saila (F10)	
Hyu	tified Lavors (A5)		L0a	Depleted Metrix (F2)			(MI DA 136 147)	
2 cr	n Muck (A10) <b>(I RR</b>	2 N)	De	Depieted Matrix (F3)			(MERA 130, 147)	
2 01	leted Below Dark S	Surface (A1	1) De	Redox Dark Surface (F6)			Other (Explain in Remarks)	
	k Dark Surface (A	12)		Depleted Dark Surface (F7)				
San	dv Muck Mineral (S	1) (I RR N		n-Mandane	ssions (no	) s (F12) <b>(I</b>	RRN	
	RA 147 148)	/// ( <b>_</b> /(t)	MI	RA 136)		o (i 12) <b>(</b> =		
San	dy Glev Matrix (S4)	)	Um	bric Surfa	ce (F13) ( <b>N</b>	MLRA 136	. 122)	
San	dy Redox (S5)	,	Pie	dmont Flo	odplain So	oils (F19) (	, ·, MLRA 148)	*Indicators of hydrophytic vegetation
Stri	oped Matrix (S6)		Re	d Parent M	laterial (F2	21) (MLR/	A 127, 147)	and wetland hydrology must be
							,	problematic
								prozionidato
trictive L	aver (if observed):							
·· · · · · · · · · · · · · · · · · · ·	. <b>.</b>					Hv	tric soil present?	No
h (inches	.).				-	,		
					-			
arks:								

![](_page_22_Picture_4.jpeg)

#### WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Old Heady Property		City/County: Lo	ouisvulle/Jeffe	rson	Sampling Dat	te: 1/1	1/21
Applicant/Owner:	Sunshine Builders, LL	.C		State: Kentu	cky		Sampling Point:	DP3
Investigator(s):	R. Fangman/Z. Triplett			Section	, Township	, Range:		
Landform (hillslop	e, terrace, etc.):	terrace	Local relief (concave,	convex, none	):	none	Slope (%):	3
Subregion (LRR o	r MLRA) LRR N	Lat.: 38.1721	67	Long.: -85.52	2690		Datum:	
Soil Map Unit Nan	ne: ShD3 - Shrouts silt lo	am, 12 to 25 percent slopes,	severely eroded, very r	rocky		NWI Classif	ication:	
Are climatic/hydro	logic conditions of the site t	ypical for this time of the year	r?	Yes	(lf no, expla	ain in remarks)		
Are vegetation	, soil	, or hydrology	significantly dist	urbed?		Are "normal circu	umstances"	
Are vegetation	, soil	, or hydrology	naturally problem	natic?		present?	_	Yes
					(	lf needed, explai	in any answers in r	emarks)

### SUMMARY OF FINDINGS

Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?	No No No	Is the Sampled Area within a Wetland?	No
Remarks: (Explain alternative procedure Upland data point	es here or in a separate repo	rt.)	

#### HYDROLOGY

Wetland Hydrology Indi	cators									
Primary Indicators (minimum o	of one is required; che	ck all that app	y)			Secondary Indicators (minimum of two required)				
Surface Water (A1) True Aquatic Plants (B14)						Surface Soil Cracks (B6)				
High Water Table (A	(2)	I	Hydroge	en Sulfide Odor (C1)		Sparsely Vegetated Concave Surface (B8)				
Saturation (A3)			Oxidize	d Rhizospheres on Livi	ng Roots (C3)	Drainage Patterns (B10)				
Water Marks (B1)		F	resend	e of Reduced Iron (C4	·)	Moss Trim Lines (B16)				
Sediment Deposits (	B2)	I	Recent	Iron Reduction in Tilled	d Soils (C6)	Dry-Season Water Table (C2)				
Drift Deposits (B3)			Thin Mu	ick Surface (C7)		Crayfish Burrows (C8)				
Algal Mat or Crust (E	34)		Other (E	Explain in Remarks)		Saturation Visible on Aerial Imagery (C9)				
Iron Deposits (B5)						Stunted or Stressed Plants (D1)				
Inundation Visible or	n Aerial Imagery (B7)					Geomorphic Position (D2)				
Water-Stained Leave	es (B9)					Shallow Aquitard (D3)				
Aquatic Fauna (B13)	)					Microtopographic Relief (D4)				
						FAC-Neutral Test (D5)				
Field Observations:										
Surface water present?	Yes	No	х	Depth (inches):	N/A	We do a f				
Water table present?	Yes	No	X		>14	bydrology				
Saturation present?	Yes	<u>No</u>	X	Depth (inches):	>14	present? No				
(includes capillary fringe)			~							
( 1 , 3 ,										
Describe recorded data (streat	m gauge, monitoring v	vell, aerial pho	tos, pre	vious inspections), if a	vailable:					
Remarks:										

### **VEGETATION (Four Strata) -- Use scientific names of plants**

VEGETATION (Four Strata) I	Jse scientific r	names of pla	nts	Sampling Point: DP3
				Dominance Test Worksheet
Tree Stratum Plot Size (30')	Absolute % Cover	Dominant Species	Indicator Status	Number of Dominant Species
1 Juniperus virginiana	40	Yes	FACU	that are OBL, FACW, or FAC: 2 (A)
2 Fraxinus pennsylvanica	20	Yes	FACW	Total Number of Dominant
3 Juglans nigra	20	Yes	FACU	Species Across all Strata: 7 (B)
4				Demonst of Demission to reaction
6				that are OBL, FACW, or FAC: 28.57% (A/B)
7				Provolance Index Worksheet
o				Total % Cover of
10		·		OBL species x 1 =
	= 08	Total Cover		FACW species x 2 =
				FAC species x 3 =
Sapling/Shrub Plot Size (15')	Absolute %	Dominant	Indicator	FACU species x 4 =
Stratum	Cover	Species	Status	UPL species x 5 =
1 Lonicera maackii	40	Yes		Column totals (A) (B)
2 Cornus fiorida	10	Yes	FACU	
3				
5				Hydrophytic Vegetation Indicators:
6	·			1 - Rapid test for hydrophytic vegetation
7				2 - Dominance test is >50%
8				3 - Prevalence index is ≤3.0*
9				4 - Morphological adaptations* (provide
10				supporting data in Remarks or on a separate sheet)
	50 =	Total Cover		
	Absoluto %	Dominant	Indicator	Problematic hydrophytic vegetation*
Herb Stratum Plot Size (5')	Cover	Species	Status	
1 Glechoma hederacea	20	Yes	FACU	*Indicators of hydric soil and wetland
2 Microstegium vimineum	20	Yes	FAC	disturbed or problematic
3 Carex blanda	10	No	FAC	
4 Ligustrum sinense	10	No	FACU	
5				Definitions of Four Vegetation Strata
6				
7				
8				
10				Tree - Woody plants 3 in. (7.6 cm) or more in diameter at
11				breast height (DBH), regardless of height.
12				Sapling/shrub - Woody plants less than 3 in. DBH and
13				greater than 3.28 ft (1 m) tall.
14				
15				and woody plants less than 3.28 ft tall.
	60 =	Total Cover		
				<b>Woody vines</b> - All woody vines greater than 3.28 ft in height.
Woody Vine Stratum Plot Size (30')	Absolute %	Dominant	Indicator	
1	00101	opeoles	Olalus	
2				
3	·			
4				Hydrophytic
5				vegetation
	0 =	Total Cover		present? No
Remarks: (Include photo numbers here or on a	separate sheet)			

S	0	I	L
_	_		

Inches)         Color (moist)         %         Color (moist)         %         Type <sup>1</sup> Loc <sup>2</sup> Inthin the second seco	
0-4         10YR 4/3         100         silty clay           4-14         10YR 5/4         100         silty clay           4-14         10YR 5/4         100         silty clay           4.14         10YR 5/4         10         silty clay           4.14         10YR 5/4         10         10	
4.14       10YR 5/4       100       silty clay         Image: Structure of the second	
e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ric Soil Indicators:         Histisol (A1)	
Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Indicators:       Indicators for Problematic Hydric Soils:         Histics (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147, 148)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Piedmont Floodplai         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Indicators:         Histisol (A1)       Dark Surface (S7)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)	
Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depleted Matrix (F3)       Image: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Image: C=Concentration, D=Depleted Matrix (F3)       Image: C=Concentration, D=Depleted Matrix (F3)         Image: C=Concentration, D=Depleted Matrix (F3)       Image: C=Concentration, D=Depleted Matrix (F3)	
e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:         Histisol (A1)         Histic Epipedon (A2)         Black Histic (A3)         Hydrogen Sulfide (A4)         Loamy Gleyed Matrix (F3)	
e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:         Histisol (A1)       Dark Surface (S7)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)	
e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         it Soil Indicators:	
e: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (M         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
a: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (N         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
a: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (N         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
a: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         ic Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (N         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redoo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplaid         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
ic Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (N         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redo         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
Histisol (A1)Dark Surface (S7)2 cm Muck (A10) (NHistic Epipedon (A2)Polyvalue Below Surface (S9) (MLRA 147, 148)Coast Prairie RedoBlack Histic (A3)Thin Dark Surface (S9) (MLRA 147, 148)(MLRA 147, 148)Hydrogen Sulfide (A4)Loamy Gleyed Matrix (F2)Piedmont FloodplaiStratified Layers (A5)Depleted Matrix (F3)(MLRA 136, 147)	
Histisol (A1)Dark Surface (S7)2 cm Muck (A10) (IHistic Epipedon (A2)Polyvalue Below Surface (S9) (MLRA 147, 148)Coast Prairie RedoBlack Histic (A3)Thin Dark Surface (S9) (MLRA 147, 148)(MLRA 147, 148)Hydrogen Sulfide (A4)Loamy Gleyed Matrix (F2)Piedmont FloodplaiStratified Layers (A5)Depleted Matrix (F3)(MLRA 136, 147)	
Histic Epipedon (A2)Polyvalue Below Surface (S9) (MLRA 147, 148)Coast Prairie RedoBlack Histic (A3)Thin Dark Surface (S9) (MLRA 147, 148)(MLRA 147, 148)Hydrogen Sulfide (A4)Loamy Gleyed Matrix (F2)Piedmont FloodplaiStratified Layers (A5)Depleted Matrix (F3)(MLRA 136, 147)	ILRA 147)
Black Histic (A3)Thin Dark Surface (S9) (MLRA 147, 148)(MLRA 147, 148)Hydrogen Sulfide (A4)Loamy Gleyed Matrix (F2)Piedmont FloodplaiStratified Layers (A5)Depleted Matrix (F3)(MLRA 136, 147)	(A16)
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplai         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)	
Stratified Layers (A5)Depleted Matrix (F3) (MLRA 136, 147)	n Soils (F19)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark	Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain In R	emarks)
Inick Dark Surface (A12)     Redox Depressions (F8)     Sandy Muck Minoral (S1) (LPP N     Iron Manganese Masses (E12) (LPP N	
Sandy Clev Matrix (S4)	
Sandy Bedox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) *Indicators of hydro	ohytic vegetation
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) and wetland hydrole	egy must be
capped managed (co) present, diffess dist	
trictive Layer (if observed):	
Hydric soil present? No	
th (inches):	
narks:	

#### WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Old Heady Property		City/County: Lo	ouisvulle/Jeffer	rson Sam	npling Date:	1/11/	21
Applicant/Owner:	Sunshine Builders, L	LC		State: Kentu	cky	Samp	ling Point:	DP4
Investigator(s):	R. Fangman/Z. Triplett			Section,	Township, Range	e:		
Landform (hillslop	e, terrace, etc.):	terrace	Local relief (concave,	convex, none	): conc	cave	Slope (%):	0
Subregion (LRR o	r MLRA) LRR N	Lat.: 38.1704	97	Long.: -85.51	9718	Datum	:	
Soil Map Unit Nan	ne: ShD3 - Shrouts silt lo	am, 12 to 25 percent slopes,	severely eroded, very r	ocky	NV	VI Classification	:	
Are climatic/hydro	logic conditions of the site	typical for this time of the yea	ır?	Yes	(If no, explain in re	emarks)		
Are vegetation	, soil	, or hydrology	significantly distu	urbed?	Are "no	ormal circumstar	nces"	
Are vegetation	, soil	, or hydrology	naturally problen	natic?	present	t?		Yes
					(If need	ed, explain any a	answers in rer	marks)

### SUMMARY OF FINDINGS

Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?	No No	Is the Sampled Area within a Wetland?	No
Remarks: (Explain alternative procedures Upland data point	s here or in a separate report.	)	

#### HYDROLOGY

Wetland Hydrology Indie	cators					
Primary Indicators (minimum c	of one is required; cheo	ck all that appl	y)			Secondary Indicators (minimum of two required)
Surface Water (A1) True Aquatic Plants (B14)						Surface Soil Cracks (B6)
High Water Table (A	.2)		Hydrogen Sulfide Odor (C1)			Sparsely Vegetated Concave Surface (B8)
Saturation (A3)			Oxidize	d Rhizospheres on Livi	ng Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)		F	Presend	ce of Reduced Iron (C4	)	Moss Trim Lines (B16)
Sediment Deposits (	B2)	F	Recent	Iron Reduction in Tilled	d Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)		1	Thin Mu	ick Surface (C7)		Crayfish Burrows (C8)
Algal Mat or Crust (E	34)		Other (E	Explain in Remarks)		Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)						Stunted or Stressed Plants (D1)
Inundation Visible or	n Aerial Imagery (B7)					Geomorphic Position (D2)
Water-Stained Leave	es (B9)					Shallow Aquitard (D3)
Aquatic Fauna (B13)	)					Microtopographic Relief (D4)
						FAC-Neutral Test (D5)
Field Observations:						
Surface water present?	Yes	No	х	Depth (inches):	N/A	Wotland
Water table present?	Yes	No	Х	Depth (inches):	>14	hydrology
Saturation present?	Yes	No	Х	Depth (inches):	>14	present? No
(includes capillary fringe)				, _		
Describes as social electric (stars as						
Describe recorded data (strear	m gauge, monitoring w	/eii, aeriai pho	tos, pre	evious inspections), if a	ivaliable:	
Remarks:						

### **VEGETATION (Four Strata) -- Use scientific names of plants**

VEGETATION (Four Strata)	<u>Use scientific r</u>	names of pla	nts	Sampling Point: DP4
				Dominance Test Worksheet
Trop Stratum Plot Size (30')	Absolute %	Dominant	Indicator	
The Stratum Fibroize (50)	Cover	Species	Status	Number of Dominant Species
1				that are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across all Strata: 1 (B)
4				
5				Percent of Dominant Species
6				that are OBL, FACW, or FAC: 0.00% (A/B)
7				
8				Prevalence Index Worksheet
9				Total % Cover of:
10				OBL species x 1 =
	0 =	Total Cover	<b></b>	FACW species x 2 =
				FAC species x 3 =
Sapling/Shrub Plot Size (15')	Absolute %	Dominant	Indicator	FACU species x 4 =
Stratum	Cover	Species	Status	UPL species x 5 =
1				Column totals (A) (B)
2				Prevalence Index = B/A =
3				
4				
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid test for hydrophytic vegetation
7				2 - Dominance test is >50%
8				3 - Prevalence index is ≤3.0*
9				4 - Morphological adaptations* (provide
10				supporting data in Remarks or on a
	0 =	Total Cover		separate sneet)
				Problematic hydrophytic vegetation*
Harb Stratum Plat Size (5')	Absolute %	Dominant	Indicator	(explain)
	Cover	Species	Status	*Indicators of hvdric soil and wetland
1 Schedonorus arundinaceus	80	Yes	FACU	hydrology must be present, unless
2 Carex blanda	10	No	FAC	disturbed or problematic
3 Sorghum halepense	10	No	FACU	
4				
5				Definitions of Four Vegetation Strata
6				
7				
8				
9				
10				<b>Tree -</b> Woody plants 3 in. (7.6 cm) or more in diameter at
11				breast height (DBH), regardless of height.
12				Sapling/shrub - Woody plants less than 3 in. DBH and
13				greater than 3.28 ft (1 m) tall.
14				
15				Herb - All herbaceous (non-woody) plants, regardless of size,
	100 =	Total Cover		and woody plants less than 3.28 it tall.
				Woodv vines - All woodv vines greater than 3.28 ft in height.
Marchelling Stratium - Diot Sizo (201)	Absolute %	Dominant	Indicator	, , , , , , , , , , , , , , , , , , ,
Woody vine Stratum Piot Size (30)	Cover	Species	Status	
1				
2				
3				
4				Hydrophytic
5				vegetation
	0 =	Total Cover		present? No
Remarks: (Include photo numbers here or o	on a separate sheet)			

hesp       Color (moist)       %       Calor (moist)       %       Type'       Loc'         14       10YR 4/3       80       10YR 5/4       20       C       M       silty day         14       10YR 4/3       80       10YR 5/4       20       C       M       silty day         14       10YR 4/3       80       10YR 5/4       20       C       M       silty day         14       10YR 4/3       80       10YR 5/4       20       C       M       silty day         14       10	est       Color (moles)       %       Type       Loc*         14       10YR 4/3       80       10YR 5/4       20       C       M       silly clay	epth	Matrix		Red	lox Featur	es1		Texture	Remarks		
14       10YR 4/3       80       10YR 5/4       20       C       M       silly clay         Image: Stratige Layser (A1)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)         Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)         Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A2)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)         Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A3)       Image: Stratige Layser (A4)       Image: Stratig	Id         TOYR 4/3         B0         TOYR 5/4         20         C         M         silly clay           Image: International Control of the international Contrector international Contrector	ches)	Color (moist)	%	Color (moist)	%	Type'	Loc <sup>2</sup>				
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:         Histico (A1)         Histico (A2)         Black Histic (A3)         Hydrogen Sulfide (A4)         Soil mode water (A3)         Timi Dark Surface (S7)         Polyvalue Below Surface (S9) (MLRA 147, 148)         Depleted Below Surface (S9) (MLRA 147, 148)         Depleted Matrix (F2)         Depleted Matrix (F3)         2 cm Muck (A10) (LRR N)         Depleted Dark Surface (F7)         MLRA 147, 149)         Sandy Muck Mineral (S1) (LRR,N         Sandy Gley Matrix (S4)         Sandy Redox (S5)         Stripped Matrix (S6)         Red Parent Material (F21) (MLRA 147, 147)         Trick Layer (if observed):         (inches):	Image: Sector	-14	10YR 4/3	80	10YR 5/4	20	С	М	silty clay			
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:         Histics (A1)         Histics (A3)         Hydrogen Sulfide (A4)         Soil Indicators:         Init Dark Surface (S7)         Polyvalue Below Surface (S9) (MLRA 147, 148)         Hydrogen Sulfide (A4)         Stratified Layers (A5)         Depleted Matrix (F3)         Depleted Dark Surface (A11)         Depleted Dark Surface (A12)         Sandy Muck Mineral (S1) (LRR, N)         Sandy Meck (Mineral (S1)         Sandy Redox (S5)         Stripped Matrix (S6)         Red Parent Material (F21) (MLRA 147, 147)         Thick Layers (if observed):         (inches):	Image: Section of the section of th											
Image: Solution of the second seco	Image: State of the state											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:         Histisol (A1)       Dark Surface (S7)         Histisol (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F7)         Thin Dark Surface (F6)       Umbric Surface (F1)         Depleted Matrix (F2)       Redox Dark Surface (F1)         Sandy Muck Mineral (S1) (LRR,N)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 147, 147)         Sandy Meck Miseral (S5)       Piedmont Floodplain Soils (F19) (MLRA 148, 120, 120, 120, 120, 120, 120, 120, 120	Image: State of the served is the served											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:         Histisc [A1)         Histisc [A1)         Histisc [A3)         Stratified Layers (A5)         2 cm Muck (A10) (LRR N)         Redox Dark Surface (F3)         Stratified Layers (A5)         2 cm Muck (A10) (LRR N)         Redox Dark Surface (F6)         Sandy Gley Matrix (S4)         Sandy Gley Matrix (S4)         Sandy Redox (S5)         Striped Matrix (S6)         Red Parent Material (F21) (MLRA 147, 147)         Hydric soil present?         Murk soil (F6)         No	c=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>1</sup> Cocation: PL=Lining, M=Matrix         C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>1</sup> Cocation: PL=Lining, M=Matrix         Soll Indicators:       Indicators for Problematic Hydric Soils:         Histics (A1)											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)         Histisol (A1)       Dark Surface (S9) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)         Hydrogen Suffide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)         Thick Dark Surface (A12)       Redox Dark Surface (F3)         Sandy Muck Mineral (S1) (LRR,N)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Gley Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 147, 148)         Sandy Gley Matrix (S6)       Red Parent Material (F21) (MLRA 136, 122)         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)         thyrize soil present?       No	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soli Indicators:       Indicators for Problematic Hydric Solis:         Histiac [A1)											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147, 148)         Hydrogen Sulfide (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Stratified Layers (A5)       Depleted Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       "Indicators of hydrophylic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Gley Matrix (S6)       Piedmont Floodplain Soils (F19) (MLRA 147, 147)       "Indicators of hydrophylic vegetatic and wetland hydrology must be present, unless disturbed or problematic         title Layer (if observed):       Hydric soil present?       No	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soli Indicators:       Indicators:         Histisol (A1)											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisci (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Hydrogen Sulfde (A4)       Dapited Matrix (F2)       Peldynatize (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       Peldynatize (F12)         Other (Explain in Remarks)       Peldynatize (F12)       Other (Explain in Remarks)         Sandry Muck Mineral (S1) (LIRR, M       MLRA 136)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Sandry Muck Mitrix (S6)       Pelerent Material (F21) (MLRA 135, 122)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         stripped (ff observed):       Index       Mich Si       Indicators of hydrophytic set											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Stratified Layers (A5)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Dark Surface (F7)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Imon-Manganese Masses (F12) (LRR N       "Indicators of hydrophytic vegetatic and wetland hydrology must be present floodplain Soils (F19) (MLRA 148)         Sandy Redox (S5)       Red Parent Material (F21) (MLRA 127, 147)       "Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):       Hydric soil present?       No	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soll Indicators:       Indicators for Problematic Hydric Solls:         Histisol (A1)											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)	Ca-Concentration, D-Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lhing, M=Matrix         Soil Indicators:         Histisol (A1)         Histisol (A2)         Histisol (A3)         Histisol (A1)         Black Histic (A3)         Histisol (A1)         Black Histic (A3)         Histisol (A1)         Black Histic (A3)         Histisol (A1)         Depleted Matrix (F3)         Carcondrive (S9) (MLRA 147, 148)         Depleted Matrix (F3)         Depleted Matrix (F3)         Depleted Dark Surface (F6)         Depleted Dark Surface (F1)         Depleted Dark Surface (F1)         Thin Dark Surface (F1)         Depleted Dark Surface (F1)         Depleted Dark Surface (F1)         Depleted Dark Surface (F1)         Redox Dark Surface (F1)         MLRA 147, 148)         MLRA 147, 148)         MLRA 147, 148)         Depleted Matrix (S6)         Sardy Muck (A10) (LRR N)         Redox Depressions (F8)         Sardy Mack (S5)         Stripped Matrix (S6)         Depleted Matrix (S6)         Perement Floodplain Solis (F19) (MLRA 142)         Red Parent Material (F21) (MLRA 127, 147) <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratfied Layers (A5)       Depleted Matrix (F3)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F7)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)         Thick Dark Surface (A12)       Redox Dares Surface (F7)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N         MLRA 147, 148)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Gley Matrix (S4)       Piedmont Floodplain Soils (F19) (MLRA 148)         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):       Hydric soil present?       No	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix Indicators is Indicators is Indicators is Indicators is Indicators for Problematic Hydric Soils:  Histics Epipedon (A2) Histics (A3) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A1) Depleted Matrix (F3) Coast Prairie Redox (A16) (MLRA 147, 148) Depleted Matrix (F3) Coast Prairie Redox (A17) Uters Surface (A12) Trinc Dark Surface (F6) Depleted Below Dark Surface (A11) Trinc Dark Surface (F7) Trick Dark Surface (A12) Bandy Muck Mineral (S1) (LRR.N MLRA 147, 148) MuRA 147, 148) Sandy Gley Matrix (S4) Sandy Gley Matrix (S6) Hurden T Floodpiain Soils (F19) (MLRA 136, 122) Shipped Matrix (S6) Hurden T Floodpiain Soils (F19) (MLRA 136, 122) Trick Dark Surface (S1) Red Parent Material (F21) (MLRA 136, 122) Shipped Matrix (S6) Hurden T Floodpiain Soils (F19) (MLRA 148) Sandy Gley Matrix (S6) Hurden T Floodpiain Soils (F19) (MLRA 147, 147) Ket Layer (If observed): Hydric soil present? No											
C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location; PL=Lining, M=Matrix         Soil Indicators:       Indicators for Problematic Hydric Soils:         Histis (A1)	C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains - <sup>2</sup> Location: PL=Lining, M=Matrix Soil Indicators: Indicators for Problematic Hydric Solis: Indicator field Hydric Solis: Indicator Hydrocopy must be present; Indicators for Problematic Hydric Solis: Indicators for Problematic Hydric Hydric Solis: Indicators for Problematic Hydric Hyd							-				
Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 147, 148)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       "Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)       "Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         trive Layer (if observed):       Hydric soil present?       No	Soil Indicators:     Indicators for Problematic Hydric Solls:       Histiso (A1)     Dark Surface (S7)     2 cm Muck (A10) (MLRA 147, 148)       Histio (A3)     Polyvalue Below Surface (S9) (MLRA 147, 148)     Coast Prairie Redox (A16)       Hydrogen Sulfade (A4)     Depleted Matrix (F2)     MLRA 147, 148)       Stratified Layers (A5)     Depleted Matrix (F3)     Peldmont Floodplain Solis (F19)       2 cm Muck (A10) (LRR N)     Depleted Matrix (F3)     Peldmont Floodplain Solis (F19)       Dick Dark Surface (A12)     Redox Dark Surface (F7)     Peldmont Floodplain Solis (F19)       Sandy Muck Mineral (S1) (LRR N)     Depleted Matrix (F3)     Peldmont Floodplain Solis (F19) (MLRA 148)       Sandy Gley Matrix (S4)     Umbric Surface (F13) (MLRA 136, 122)     Piedmont Floodplain Solis (F19) (MLRA 147, 148)       Sandy Redox (S5)     Peldmont Floodplain Solis (F19) (MLRA 147, 148)     Piedmont Floodplain Solis (F19) (MLRA 147, 149)       Stripped Matrix (S6)     Piedmont Floodplain Solis (F19) (MLRA 148)     Piedmont Floodplain Solis (F19) (MLRA 147, 149)       Stripped Matrix (S6)     MLRA 147, 148)     Piedmont Floodplain Solis (F19) (MLRA 147, 148)       Stripped Matrix (S6)     Hydric soil present?     No_	C=Con	centration, D=Depl	letion, RM	=Reduced Matrix, MS	=Masked	Sand Grai	ins - <sup>2</sup> Loca	tion: PL=Lining, M=Matrix			
Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):       Hydric soil present?       No	Histisol (A1)	Soil In	dicators:						Indicators for Prob	lematic Hydric Soils:		
Histisol (A1)       Dark Surface (S7)       2 cm Muck (A10) (MLRA 147)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 147, 148)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic	Histics (A1)       Dark Surface (S7)       2 cm Muck (A10) (URLA 147)         Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Praine Redox (A16)         Bick Histic (A3)       Loamy Gleyed Matrix (F2)       Coast Praine Redox (A16)         Stratified Layers (A5)       Depleted Matrix (F2)       Piedmont Floodplain Soils (F19)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Very Shallow Dark Surface (TF12)         Depleted Netrix (S1)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iton-Manganese Masses (F12) (LRR N         MLRA 147, 148)       Umbric Surface (F13) (MLRA 148, 122)       Piedmont Floodplain Soils (F19) (MLRA 148)         Sandy Muck Mineral (S1) (LRR,N       Iton-Manganese Masses (F12) (LRR N       *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Pied Parent Material (F21) (MLRA 147)       *Indicators of hydrophytic vegetation and wetland hydrology must be present; unless disturbed or problematic         strip extreme (if observed):       Hydric soil present?       No         inches):       No											
Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Dark Surface (F13) (LRR N       MLRA 136, 122)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):	Histic Epipedon (A2)       Polyvalue Below Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       Coast Prairie Redox (A16)         Hydrogen Sulfde (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Solis (F19)         Stratified Layers (A5)       Depleted Dark Surface (F7)       Very Shallow Dark Surface (TF12)         Depleted Bow Dark Surface (A11)       Depleted Dark Surface (F7)       Very Shallow Dark Surface (TF12)         Sandy Muck Mineral (S1) (LRR,N       MLRA 136, 122)       Very Shallow Dark Surface (F13) (MLRA 136, 122)         Sandy Gley Matrix (S6)       Piedmont Floodplain Solis (F19) (MLRA 147, 147)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       No         stripped matrix (S6)       Hydric soil present?       No	Histi	sol (A1)		Dar	k Surface	(S7)			2 cm Muck (A10) (MLRA 147)		
Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       Iron-Manganese Masses (F12) (LRR N         MLRA 147, 148)       MLRA 136)       "Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)       *Indicators disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       No	Black Histic (A3)       Thin Dark Surface (S9) (MLRA 147, 148)       (MLRA 147, 148)         Hydrogen Suffide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F2)       (MLRA 136, 147)         2 or Muck (A10) (LRR N)       Redox Dark Surface (F6)       (MLRA 136, 147)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Very Shallow Dark Surface (TF12)         Sandy Rodx Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Rodx (S5)       Umbric Surface (F13) (MLRA 136, 122)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         stripped (if observed):	Histi	c Epipedon (A2)		Pol	yvalue Bel	ow Surfac	e (S9) <b>(M</b> I	_RA 147, 148)	Coast Prairie Redox (A16)		
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Piedmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Sandy Redox (S5)       Piedmont Floodplain Soils (F21) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):       Mydric soil present?       No	Hydrogen Sulfide (A4)       Loamy Gleged Matrix (F2)       Pledmont Floodplain Soils (F19)         Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F1)       Uery Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A12)       Redox Dark Surface (F1)       Uery Shallow Dark Surface (TF12)         Sandy Muck Mineral (S1) (LRR,N)       MLRA 136)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 136, 122)       *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       *Indicators of nydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         stripped Matrix (F6)       Hydric soil present?       No         stripped Matrix (F6)       K5       No	Blac	k Histic (A3)		Thi	n Dark Su	rface (S9)	(MLRA 14	17, 148)	(MLRA 147, 148)		
Stratified Layers (A5)       Depleted Matrix (F3)       (MLRA 136, 147)         2 cm Muck (A10) (LRR N)       Redox Dark Surface (F6)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       Iron-Manganese Masses (F12) (LRR N         MLRA 147, 148)       MLRA 136)       Iron-Manganese Masses (F12) (LRR N         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 136, 122)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)         trive Layer (if observed):	Stratinge Layers (Ac)	Hydr	rogen Sulfide (A4)		Loa	my Gleye	d Matrix (F	2)		Piedmont Floodplain Soils (F19)		
2 clin Mude (Arb) (LKK N)       Redox Dark Surface (P6)       Very Strailow Dark Surface (P12)         Depleted Below Dark Surface (A11)       Depleted Dark Surface (F7)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Depressions (F8)       Other (Explain in Remarks)         Sandy Muck Mineral (S1) (LRR,N       Iron-Manganese Masses (F12) (LRR N       MLRA 147, 148)         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 136, 122)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       Present, unless disturbed or problematic         ctive Layer (if observed):	2 Unimade (H0) (LNK N)	Strai	Muck (A10) (I PP	N)	Dep	bleted Mat	rix (⊢3) Surfees (⊏(	2)		(MLRA 136, 147)		
Depicted Below Dark Surface (A11)       Depicted Dark Surface (A12)       Coller (Explain in Kentars)         Thick Dark Surface (A12)       Redox Depressions (F8)       Iron-Manganese Masses (F12) (LRR N         MLRA 147, 148)       MLRA 136)       Sandy Gley Matrix (S4)       Piedmont Floodplain Soils (F19) (MLRA 136, 122)         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 148)       and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       Piedmont Floodplain Soils (F19) (MLRA 127, 147)	Depreted Below Dark Suitace (r1)	Dop	lotod Bolow Dork S	an) Surfoco (Ar	11) Rec	lox Dark a	ыпасе (Ft	) (E7)		Very Shallow Dark Surface (TF12)		
Index Dark Outlace (A12)       Iten-Manganese Masses (F12) (LRR N         Sandy Muck Mineral (S1) (LRR,N       Iten-Manganese Masses (F12) (LRR N         MLRA 147, 148)       MLRA 136)         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 148)         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)         reserved):       Iten-Manganese Masses (F12) (MLRA 127, 147)         (inches):       No	Interval       Income Variable         Sandy Muck Minerial (S1) (LRR,N       Ircom-Manganese Masses (F12) (LRR N         MLRA 147, 148)       MLRA 136)         Sandy Muck Minerial (S1)       Ircom-Manganese Masses (F12) (LRR N         Sandy Muck Minerial (S1)       MLRA 136,         Sandy Medox (S5)       Piedmont Floodplain Soils (F19) (MLRA 148)         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)         robuster       Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic         titve Layer (if observed):       Indicators         (inches):       No         (inches):       No		k Dark Surface (A		II)De		ssions (E8	( <i>Г1)</i>				
MLRA 147, 148)       MLRA 136)         Sandy Gley Matrix (S4)       Umbric Surface (F13) (MLRA 136, 122)         Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 148)         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)         return Layer (if observed):       No         (inches):       No	MIRA 147, 148)       MIRA 136)         Sandy Gley Matrix (S4)       Piedmont Floodplain Soils (F19) (MIRA 148)         Stripped Matrix (S6)       Red Parent Material (F21) (MIRA 127, 147)         *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         trive Layer (if observed):	Sand	dv Muck Mineral (S	12) (LRR.N		-Mangane	ssions (no se Masse	s (F12) <b>(L</b>	RR N			
	Sandy Gley Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)   Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148)   Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147)     "Indicators of hydrophytic vegetation   and wetland hydrology must be   present, unless disturbed or   problematic   tive Layer (if observed):   [inches]:   Hydric soil present? No	MLR	RA 147, 148)			RA 136)		• (· · <i>_</i> ) <b>(</b> _				
Sandy Redox (S5)       Piedmont Floodplain Soils (F19) (MLRA 148)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       *Indicators of hydrophytic vegetatic and wetland hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):	Sandy Redox (S5)Piedmont Floodplain Soils (F19) (MLRA 148)and wetland hydrology must be present, unless disturbed or problematic	San	dv Glev Matrix (S4)		Um	bric Surfa	c Surface (F13) ( <b>MLRA 136. 122</b> )					
Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       and wetand hydrology must be present, unless disturbed or problematic         ctive Layer (if observed):	Stripped Matrix (S6)       Red Parent Material (F21) (MLRA 127, 147)       and weard in subody must be present, unless disturbed or problematic         stive Layer (if observed):	Sand	dy Redox (S5)		Pie	dmont Flo	odplain Sc	oils (F19) <b>(</b>	MLRA 148)	*Indicators of hydrophytic vegetation		
ctive Layer (if observed): (inches):	tive Layer (if observed): Hydric soil present? No ks:	Strip	ped Matrix (S6)		Rec	l Parent N	laterial (F	21) (MLR/	A 127, 147)	present, unless disturbed or		
ctive Layer (if observed): (inches):	tive Layer (if observed): [inches): Ks:									problematic		
ctive Layer (if observed): (inches):	ctive Layer (if observed):     (inches):     Multic soil present?     No        ks:											
ctive Layer (if observed): Hydric soil present? No	tive Layer (if observed):           (inches):											
(inches): No	(inches): No	ctive La	ayer (if observed):									
(inches):	(inches):ks:						_	Hy	dric soil present?	No		
	ks:	(inches)	):				-					
	KS:											
ks:		'ks:										

![](_page_28_Picture_4.jpeg)

# **APPENDIX B**

## **RAPID BIOASSESSMENT PROTOCOL FORMS**

Received April 19, 2021 Planning & Design

21-ZONE-00016

				High Gradier	nt Bioa	assessi	nent S	Strea	m Visit	Sheet			
STREAM NAM	1E:	Intermitte	nt Strea	m 1			LOCATI	ON:	Old Head	ly Property			
STATION #: F	RBP 1						COUNT	Y:	Jefferson		PRO.	JECT: 20-236	
INVESTIGAT	ORS:	R. Fangm	nan/ Z. T	riplett			DATE:	1/11/2	2021	TIME:	9:41	АМ 🗸	РМ 🗌
Verify Site LAT/L	ONG v	s GPS	Yes	No N/A					CANO	PY COVER::		STREAM T	YPE:
								Fully	Exposed	(0-25%)	$\checkmark$	Perennial	
Г		Station		Downstream		Upstream	ı	Parti	ally Expos	ed (25-50%)		Ephemeral	
LAT	:	38.172507	,					Parti	ally Shade	ed (50-75%)		Intermittent	$\checkmark$
LONG	-	85.51808 <sup>,</sup>	1					Fully	Shaded (	75-100%)			
WEATHE	R	Now	Past 2	4 hours	<u>.</u>	LOC	AL WAT	ERSI	IED FEAT	URES (Predon	ninant S	Surrounding Land	<u>Use):</u>
				Heavy rain		Surface N	/lining		Construct	tion		Forest	$\checkmark$
scouring rain in	n a n the			Steady rain		Deep Min	ing		Commerc	cial		Pasture/Grazing	
last 14 days?				Intermittent show	/ers	Oil Wells			Industrial			Silviculture	
Yes 🗌				Clear/sunny		Land Dis	oosal		Row Crop	os		Urban Runoff/ Storm Sewers	1
No 🗹		$\checkmark$	$\checkmark$	Cloudy		Residenti	al	$\checkmark$					
INSTRE	EAM FE	EATURES		HYDRAULIC STRUC	TURES	STREAM	I FLOW		RIPARIA	N VEGETATION	I	CHANNEL ALTE	RATIONS
Stream Width		3-7	ft	Dams		Dry		Trees	;   ✓	Herbaceous	$\checkmark$	Dredging	
Maximum Dept	th	0.5	ft	Bridge Abutments		Pooled		Grass	ses 🗸	Shrubs		Channelization	
Reach Length		50	m	Island		Low		Dom.	Tree/Shru	ub Taxa:		(Full) (Pa	artial)
Discharge	1		cfs	Waterfalls		High			white	e oak		shagbark hic	kory
	1		-	Other:		Normal	$\checkmark$		sugar	maple			
Riffle/Ru	n/Poo	l Sequend	;e	(No. Sampled in R	each)		R	iffle	Run _	Pool			
P-CHEM				Instrument Used:						Date Calibra	ted:		
Temp(°F)			D.C	). (mg/l)	%Satu	ration		-	oH(S.U.)	Cond. (µS	6/cm)	Turb	

#### Substrate Characterization Riffle 15 P.C. % Run 70 % % Reach Total Est. Pool 15 Substrate Silt/Clay (<0.06 mm/0.002 in) Х Х Х х х Х Sand (0.06–2 mm/0.002–0.08 in) Х Х Х Gravel (2-64 mm/0.08-2.52 in) Cobble (64–256 mm/2.52–10.08 in) Х Х Х Boulders (>256 mm/10.08 in) Х Х Х Bedrock

Bluegrass Bioregie (High Gradient Assess	Headwater (<5.0 mi <sup>2</sup> )	Wadeable (>5.0 mi <sup>2</sup> )	
Fully Supporting	(Excellent)	156-200	130-200
Supporting but Threatened and Partially Supporting	(Average)	142-155	114-129
Not Supporting	(Poor)	0-141	0-113

![](_page_30_Picture_3.jpeg)

Project Name:	Old Heady Property Stream Name: Intermittent Stream 1									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory	_						
Parameter	Optimal	Suboptimal	Marginal	Poor						
SCORE 1 Enifaunal	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	54321						
Substrate/ Available Cover 7 Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
2. Embeddedness										
12 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 8 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 14 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 14 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 17 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 9 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability4LB 7 RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection <u>3</u> LB 3RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 3LB 3RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone. NOTES/COMMENTS:	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
104	Poor Quality									

				High Gradier	nt Bioa	assessi	nent S	Strea	m Visit	Sheet			
STREAM NAM	IE: 1	ntermitte	nt Strea	m 2			LOCATI	ON:	Old Head	ly Property			
STATION #: R	RBP 2						COUNT	Y:	Jefferson		PRO.	JECT: 20-236	;
INVESTIGATO	DRS:	R. Fangm	nan/ Z. T	riplett			DATE:	1/11/2	2021	TIME:	11:15	AM 🗸	РМ 🗌
Verify Site LAT/L	ONG vs	GPS	Yes	No N/A					CANO	PY COVER::		STREAM	TYPE:
								Fully	Exposed	(0-25%)		Perennial	
		Station		Downstream		Upstream	ı	Parti	ally Expos	ed (25-50%)		Ephemeral	
LAT	3	8.172897	,					Parti	ally Shade	ed (50-75%)		Intermittent	$\checkmark$
LONG	-6	35.522723	3					Fully	Shaded (	75-100%)	$\checkmark$		
WEATHER	२	Now	Past 2	4 hours	J,	LOC	AL WAT	ERSH	IED FEAT	URES (Predon	ninant S	Surrounding Land	<u>l Use):</u>
				Heavy rain		Surface N	lining		Construc	tion		Forest	~
Has there been scouring rain in	the			Steady rain		Deep Min	ing		Commer	cial		Pasture/Grazing	
last 14 days?				Intermittent show	/ers	Oil Wells	0		Industrial			Silviculture	
Yes 🗌				Clear/sunnv		Land Dis	osal		Row Cro	os		Urban Runoff/	_ _
				Cloudy		Pooidonti	al					Storm Sewers	
					TUDES	STREAM							
		ATURES		HIDRAULIC STRUC		SIREAN		<b>-</b>		VEGETATION			
Stream Width	-	6-10	π -	Dams		Dry		Trees	; <u> </u>	Herbaceous		Dreaging	
Maximum Dept	h	0.4	ft	Bridge Abutments		Pooled		Grass	ses 🗖	Shrubs	$\checkmark$	Channelization	
Reach Length		50	m	Island		Low		Dom.	Tree/Shru	ıb Taxa:		(Full) 🗌 (F	Partial)
Discharge			cfs	Waterfalls		High			gree	n ash		bush honeys	suckle
	_		-	Other:		Normal	$\checkmark$		Eastern	red cedar		hackber	ry
Riffle/Ru	n/Pool	Sequenc	ce	(No. Sampled in R	each)		R	iffle	Run _	Pool			
P-CHEM				Instrument Used:						Date Calibra	ted:		
Temp(°F)			D.C	). (mg/l)	%Satur	ration		-	pH(S.U.)	Cond. (µS	6/cm)	Tu	b

#### Substrate Characterization Riffle 20 Reach Total P.C. % 50 % Substrate Est. Run % Pool 30 Silt/Clay (<0.06 mm/0.002 in) Х Х Х х х Sand (0.06–2 mm/0.002–0.08 in) Х Х Х Х Gravel (2-64 mm/0.08-2.52 in) Cobble (64–256 mm/2.52–10.08 in) Х Х Х Х Х Х Boulders (>256 mm/10.08 in) Х Х Х Bedrock

Bluegrass Bioregio (High Gradient Assess)	on ments)	Headwater (<5.0 mi <sup>2</sup> )	Wadeable (>5.0 mi <sup>2</sup> )
Fully Supporting	(Excellent)	156-200	130-200
Supporting but Threatened and Partially Supporting	(Average)	142-155	114-129
Not Supporting	(Poor)	0-141	0-113

![](_page_32_Picture_3.jpeg)

Project Name:	Old Heady Property Stream Name: Intermittent Stream 2								
	R	BP High Gradient Habit	at						
Habitat		Condition Categ	jory						
Parameter	Optimal	Suboptimal	Marginal	Poor					
1 Enifaunal	20 19 10 17 10	15 14 15 12 11	10 9 0 7 0	54321					
Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
2. Embeddedness									
7 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.					
3. Velocity/Depth Regime 13 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).					
4. Sediment Deposition 6 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.					
5. Channel Flow Status 10 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.					
6. Channel Alteration 18 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
7. Frequency of Riffles (or bends) 11 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.					
Left/Right Bank	10 9	8 7 6	5 4 3	2 1					
8. Bank Stability <u>3</u> LB <u>3</u> RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
9. Vegetative Protection           8         LB           8         RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
10. Riparian Vegetative Zone Width 8LB 8 RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.					
115	Poor Quality								

				High Gradier	nt Bioa	assessi	ment S	Strea	m Visit S	Sheet			
STREAM NAM	IE:	Intermitte	nt Strea	m 3			LOCATI	ON:	Old Heady	Property			
STATION #: F	RBP 3						COUNT	Y:	Jefferson		PRO.	JECT: 20-236	
INVESTIGAT	ORS:	R. Fangr	1an/ Z. 1	<b>Triplett</b>			DATE:	1/11/	2021	TIME:	11:30	АМ 🗸	РМ 🗌
Verify Site LAT/L	ONG vs	GPS	Yes	No N/A					CANOP	Y COVER::		STREAM T	YPE:
								Fully	Exposed (0	)-25%)		Perennial	
Γ		Station		Downstream		Upstream	ı	Parti	ally Expose	d (25-50%)		Ephemeral	
LAT	3	8.172015	5					Parti	ally Shaded	(50-75%)		Intermittent	$\checkmark$
LONG	-6	35.52227	8					Fully	Shaded (7	5-100%)	$\checkmark$		
WEATHE	R	Now	Past 2	4 hours	<u>.</u>	LOC	AL WAT	ERSI	IED FEATU	JRES (Predon	ninant S	Surrounding Land	<u>Use):</u>
Lion there hear				Heavy rain		Surface N	/lining		Constructio	on		Forest	$\checkmark$
scouring rain in	the			Steady rain		Deep Min	ing		Commerci	al		Pasture/Grazing	
last 14 days?				Intermittent show	/ers	Oil Wells			Industrial			Silviculture	
Yes 🗌				Clear/sunny		Land Dis	oosal		Row Crops	5		Urban Runoff/ Storm Sewers	$\checkmark$
No 🗸		$\checkmark$	$\checkmark$	Cloudy		Residenti	al	$\checkmark$					
INSTRE	EAM FE	ATURES		HYDRAULIC STRUC	TURES	STREAM	I FLOW		RIPARIAN	VEGETATION	I	CHANNEL ALTE	RATIONS
Stream Width	_	3-5	ft	Dams		Dry		Trees	s 🗸	Herbaceous	$\checkmark$	Dredging	
Maximum Dept	th -	0.2	ft	Bridge Abutments		Pooled		Gras	ses 🗌	Shrubs	$\checkmark$	Channelization	
Reach Length	-	50	m	Island		Low		Dom.	Tree/Shrut	Taxa:		(Full) 🗌 (Pa	artial)
Discharge			cfs	Waterfalls		High			pin o	ak		flowering dog	wood
			-	Other:		Normal	$\checkmark$		bush hone	eysuckle		Eastern red c	edar
Riffle/Ru	n/Pool	Sequen	ce	(No. Sampled in R	each)		R	iffle _	Run	Pool			
P-CHEM				Instrument Used:						Date Calibra	ted:		
Temp(°F)			D.C	D. (mg/l)	%Satu	ration		. I	pH(S.U.)	Cond. (µS	6/cm)	Turb	

#### Substrate Characterization Riffle 10 P.C. % Run 80 % % Reach Total Est. Pool 10 Substrate Silt/Clay (<0.06 mm/0.002 in) Х Х Х х Х Х Sand (0.06–2 mm/0.002–0.08 in) Х Х Х Gravel (2-64 mm/0.08-2.52 in) Cobble (64–256 mm/2.52–10.08 in) Х Х Х Boulders (>256 mm/10.08 in) Bedrock

Bluegrass Bioregi (High Gradient Assess	Headwater (<5.0 mi <sup>2</sup> )	Wadeable (>5.0 mi <sup>2</sup> )	
Fully Supporting	(Excellent)	156-200	130-200
Supporting but Threatened and Partially Supporting	(Average)	142-155	114-129
Not Supporting	(Poor)	0-141	0-113

![](_page_34_Picture_3.jpeg)

Project Name:	Old Heady Property Stream Name: Intermittent Stream 3									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory	_						
Parameter	Optimal	Suboptimal	Marginal	Poor						
5CORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	54321						
Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
2. Embeddedness										
7 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 6 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 11 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 7 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 18 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 5 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability4LB4RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection 7 LB 7 RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 8LB 8RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone. NOTES/COMMENTS:	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
100	Poor Quality									

				High Gradier	nt Bioa	assessr	nent S	Strea	m Visit	t Sheet			
STREAM NAM	IE:	Intermitte	nt Strea	ım 2			LOCATI	ON:	Old Head	dy Property			
STATION #: R	RBP 4						COUNT	Y:	Jeffersor	ו	PRO.	JECT: 20-236	
INVESTIGATO	ORS:	R. Fangr	nan/ Z. T	riplett			DATE:	1/11/2	2021	TIME:	2:15	АМ 🗌	РМ 🗸
Verify Site LAT/L	ONG v	s GPS	Yes	No N/A					CANC	OPY COVER ::		STREAM TYPE:	
								Fully	Exposed	(0-25%)		Perennial	
		Station		Downstream		Upstream	ı	Parti	ally Expos	sed (25-50%)	$\checkmark$	Ephemeral	
LAT	3	38.170468	3					Parti	ally Shade	ed (50-75%)		Intermittent	$\checkmark$
LONG	-	85.51935	9					Fully	Shaded (	(75-100%)			
WEATHER	R	Now	Past 2	24 hours	<u></u>	LOC	AL WAT	ATERSHED FEATURES (Predominant Surrounding Land Use):					Use):
				Heavy rain		Surface N	lining		Construc	tion		Forest	~
Has there been scouring rain in	i a i the			Steady rain		Deep Min	ing		Commer	cial		Pasture/Grazing	
last 14 days?				Intermittent show	/ers	Oil Wells	0		Industria	I		Silviculture	
Yes 🗌				Clear/sunnv		Land Disr	osal		Row Cro	os		Urban Runoff/	
				Cloudy		Booidonti	ol			F -	_	Storm Sewers	
					TUDES	CTDEAN							BATIONS
		ATURES		HIDRAULIC STRUC	TURES	SIREAN		-					
Stream Width	-	3-7	-ft	Dams		Dry		Irees		Herbaceous		Dredging	
Maximum Dept	th .	0.5	ft	Bridge Abutments		Pooled		Grass	ses 🗹	Shrubs	$\checkmark$	Channelization	
Reach Length	_	50	m	Island		Low		Dom.	Tree/Shr	ub Taxa:		(Full) 🗌 (F	artial)
Discharge	-		cfs	Waterfalls		High			syca	amore		white oa	k
	•		-	Other:		Normal	$\checkmark$		eastern	red cedar		sugar map	ole
Riffle/Ru	n/Pool	Sequence	e	(No. Sampled in R	each)		R	iffle _	Run _	Pool			
P-CHEM				Instrument Used:						Date Calibra	ted:		
Temp(°F)			D.C	). (mg/l)	%Satu	ration		-	pH(S.U.)	Cond. (µS	S/cm)	Tur	). 

#### Substrate Characterization Riffle 20 P.C. % Run 50 % % Reach Total Est. Pool 30 Substrate Silt/Clay (<0.06 mm/0.002 in) Х Х Х х Х Х Sand (0.06–2 mm/0.002–0.08 in) Х Х Х Gravel (2-64 mm/0.08-2.52 in) Cobble (64–256 mm/2.52–10.08 in) Х Х Х Boulders (>256 mm/10.08 in) Bedrock

Bluegrass Bioregi (High Gradient Assess	on ments)	Headwater (<5.0 mi <sup>2</sup> )	Wadeable (>5.0 mi <sup>2</sup> )
Fully Supporting	(Excellent)	156-200	130-200
Supporting but Threatened and Partially Supporting	(Average)	142-155	114-129
Not Supporting	(Poor)	0-141	0-113

![](_page_36_Picture_3.jpeg)

Project Name:	Old Heady Property Stream Name: Intermittent Stream 2									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory							
Parameter	Optimal	Suboptimal	Marginal	Poor						
1 Enifaunal	20 19 10 17 10	15 14 15 12 11	10 9 0 7 0	54521						
Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
2. Embeddedness										
7 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 10 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 11 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 15 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	ater reaches base of both lower banks, nd minimal amount of channel substrate is posed. Water fills >75% of the available channel; or <25% of channel substrate is exposed.		Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 18 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 13 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability <u>4</u> LB <u>4</u> RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection 5 LB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 3LB 3RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
110	Poor Quality									

				High Gradier	nt Bioa	assessi	ment S	Strea	m Visit	Sheet				
STREAM NAM	1E:	Intermitte	nt Strea	m 4			LOCATI	ON:	Old Head	ly Property				
STATION #: F	RBP 5						COUNT	Y:	Jefferson		PRO.	JECT: 20-23	36	
INVESTIGAT	ORS:	R. Fangr	nan/ Z. 1	<b>Triplett</b>			DATE:	1/11/2	2021	TIME:		AM	_ PN	и 🗆
Verify Site LAT/L	.ONG v	s GPS	Yes	No N/A					CANO	PY COVER::		STREAM	I TYPE	
								Fully	Exposed	(0-25%)		Perennial		
ΙΓ		Station		Downstream		Upstream	ı	Parti	ally Expos	ed (25-50%)		Ephemeral		
LAT	:	38.171913	3					Partially Shaded (50-75%)				Intermittent		$\checkmark$
LONG	-	85.52072	5					Fully	Shaded (	75-100%)	$\checkmark$			
WEATHE	WEATHER Now Past 24 hours LOCAL WA						AL WAT	ATERSHED FEATURES (Predominant Surrounding Land Use):					<u>;):</u>	
				Heavy rain		Surface N	/lining		Construc	tion		Forest		~
scouring rain ir	n a n the			Steady rain		Deep Min	ing		Commer	cial		Pasture/Grazi	ng	
last 14 days?	last 14 days?			Intermittent show	/ers	Oil Wells			Industrial			Silviculture		
Yes 🗌				Clear/sunny		Land Disp	oosal		Row Cro	os		Urban Runo Storm Sewe	ff/ rs	
No 🗹		$\checkmark$	$\checkmark$	Cloudy		Residenti	al	$\checkmark$						
INSTRE	EAM FI	EATURES	i	HYDRAULIC STRUC	TURES	STREAM	I FLOW		RIPARIA	N VEGETATION	I	CHANNEL AL	TERAT	rions
Stream Width		2-4	ft	Dams		Dry		Trees	; 🗸	Herbaceous	$\checkmark$	Dredging		
Maximum Dep	th	0.2	ft	Bridge Abutments		Pooled		Grass	ses 🗌	Shrubs	$\checkmark$	Channelization	n	
Reach Length		25	m	Island		Low		Dom.	Tree/Shru	ub Taxa:		(Full)	(Partia	l)
Discharge			cfs	Waterfalls		High			bush hor	neysuckle		white	oak	
			-	Other:		Normal	$\checkmark$		Eastern	red cedar				
Riffle/Ru	n/Poo	l Sequen	се	(No. Sampled in R	each)		R	iffle _	Run _	Pool				
P-CHEM				Instrument Used:						Date Calibra	ted:			
Temp(°F)			D.C	). (mg/l)	%Satu	ration		-	oH(S.U.)	Cond. (µS	6/cm)	т	urb.	

Substrate Characterization											
Substrate Est. P.C.	Riffle	20 %	Run 70	%	Pool 10 %	Reach Total					
Silt/Clay (<0.06 mm/0.002 in)		Х	Х		x						
Sand (0.06–2 mm/0.002–0.08 in)		Х	Х		х						
Gravel (2–64 mm/0.08–2.52 in)		Х	Х		х						
Cobble (64–256 mm/2.52–10.08 in)		Х	Х		х						
Boulders (>256 mm/10.08 in)											
Bedrock											

#### NOTES/COMMENTS: Headwater Wadeable **Bluegrass Bioregion** (High Gradient Assessments) (<5.0 mi<sup>2</sup>) (>5.0 mi<sup>2</sup>) Fully Supporting (Excellent) 156-200 130-200 Supporting but Threatened and (Average) 142-155 114-129 Partially Supporting Not Supporting (Poor) 0-141 0-113

![](_page_38_Picture_3.jpeg)

Project Name:	: Old Heady Property Stream Name: Intermittent Stream 4									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory							
Parameter	Optimal	Suboptimal	Marginal	Poor						
1. Epifaunal	20 13 10 17 10	13 14 13 12 11	10 3 0 7 0	54521						
Substrate/ Available Cover 8	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
Score										
2. Embeddeaness 10 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 6 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 12 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 10 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 18 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 9 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability <u>5</u> LB <u>5</u> RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection           8         LB           8         RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 8LB 8RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone. NOTES/COMMENTS:	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
115	Poor Quality									

				High Gradier	nt Bioa	assessi	ment S	Strea	m Visit	Sheet				
STREAM NAM	1E:	Intermitte	nt Strea	m 5			LOCATI	ON:	Old Head	y Property				
STATION #: F	RBP 6						COUNT	Y:	Jefferson		PRO	JECT: 20-2	36	
INVESTIGAT	ORS:	R. Fangm	nan/ Z. 1	riplett			DATE:	1/11/2	2021	TIME:	3:56	AM	D PN	/ 🗸
Verify Site LAT/L	ONG v	s GPS	Yes	□ No □ N/A					CANO	PY COVER::		STREAM TYPE:		
								Fully	Exposed (	(0-25%)		Perennial		
Γ		Station		Downstream		Upstream	ı	Parti	ally Expos	ed (25-50%)		Ephemeral		
LAT	:	38.170885	5					Parti	ally Shade	d (50-75%)		Intermittent		$\checkmark$
LONG	-	85.52406	4					Fully Shaded (75-100%)			$\checkmark$			
WEATHE	WEATHER Now Past 24 hours LOCAL WA					AL WAT	ATERSHED FEATURES (Predominant Surrounding Land Use):					e):		
				Heavy rain		Surface N	<i>A</i> ining		Construct	ion		Forest		
Has there been scouring rain in	ו a the			Steady rain		Deep Min	ning		Commerc	ial		Pasture/Grazi	ng	$\checkmark$
last 14 days?				Intermittent show	ers	Oil Wells	0		Industrial			Silviculture	0	
Yes 🗌				Clear/sunnv		Land Dis	oosal		Row Crop	S		Urban Rund	off/	
		_ _	-	Cloudy		Residenti	al					Storm Sewe	ers	
	AM FI				TURES	STREAM			RIPARIAN		1	CHANNEL AI	TERAT	
Stream Width		3.6	fi	Dame				Troop		Herbaceous				
Maximum Dan	th	0.0	<b>-</b>	Bridge Abutmente		Decled		Crook		Chruha		Channalizatio	<b>n</b>	
	un	0.2	π	Bridge Abutments		Pooled		Grass		Shrubs	Ľ		n (S. ii	
Reach Length		50	m	Island		Low		Dom.	Tree/Shru	ib l'axa:		(Full)	(Partia	l)
Discharge			cfs	Waterfalls		High			eastern r	ed cedar		green	ash	
				Other:		Normal	$\checkmark$		black	walnut		sugar n	naple	
Riffle/Ru	n/Poo	l Sequend	ce	(No. Sampled in R	each)		R	iffle	Run	Pool				
P-CHEM				Instrument Used:						Date Calibra	ted:			
Temp(°F)			D.C	D. (mg/l)	%Satu	ration		-	oH(S.U.)	Cond. (µS	6/cm)		Furb.	

Substrate Characterization											
Substrate Est. P.C.	Riffle	10	%	Run	80	%	Pool	10	%	Reach Total	
Silt/Clay (<0.06 mm/0.002 in)		Х			Х			Х			
Sand (0.06–2 mm/0.002–0.08 in)	X				Х			Х			
Gravel (2–64 mm/0.08–2.52 in)		Х			Х			Х			
Cobble (64–256 mm/2.52–10.08 in)		x			X			Х			
Boulders (>256 mm/10.08 in)											
Bedrock		х			Х			Х			

#### NOTES/COMMENTS: Headwater Wadeable **Bluegrass Bioregion** (High Gradient Assessments) (<5.0 mi<sup>2</sup>) (>5.0 mi<sup>2</sup>) Fully Supporting (Excellent) 156-200 130-200 Supporting but Threatened and (Average) 142-155 114-129 Partially Supporting Not Supporting (Poor) 0-141 0-113

![](_page_40_Picture_3.jpeg)

Project Name:	Old Heady Property Stream Name: Intermittent Stream 5									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory							
Parameter	Optimal	Suboptimal	Marginal	Poor						
4 Enifaunal	20 19 10 17 10	15 14 13 12 11	10 9 0 7 0	54321						
Substrate/ Available Cover 7 Score	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
2. Embeddedness										
8 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 6 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 8 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 8 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 17 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 8 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability <u>4</u> LB <u>4</u> RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection 8LB 8 RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 6 LB 6 RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone. NOTES/COMMENTS:	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
98	Poor Quality									

r				- ingli oradior										
STREAM NA	/IE:	ntermitte	nt Strea	.m 6			LOCATI	ON:	Old Hea	dy Property				
STATION #:	RBP 7						COUNT	Y:	Jefferso	n	PRO	JECT: 20-2	36	
INVESTIGAT	ORS: F	R. Fangn	nan/ Z. T	riplett			DATE:	1/11/2	2021	TIME:	4:20	АМ	□ PM ✓	
Verify Site LAT/I	_ONG vs	GPS	Yes	No N/A					CAN	OPY COVER::		STREAM TYPE:		
								Fully	Exposed	l (0-25%)		Perennial		
		Station		Downstream		Upstrean	ı	Parti	ally Expo	sed (25-50%)		Ephemeral		
LAT	3	8.169314	4					Partially Shaded (50-75%)			$\checkmark$	Intermittent	$\checkmark$	
LONG	-8	35.52282	4			Fully Shad			Shaded	Shaded (75-100%)				
WEATHER Now Past 24 hours LOCAL WATERSH						IED FEA	TURES (Predon	ninant	Surrounding La	and Use <u>):</u>				
Has there bee	na			Heavy rain		Surface N	<i>l</i> ining		Constru	ction		Forest	✓	
scouring rain i	n the			Steady rain		Deep Mir	ning		Comme	rcial		Pasture/Graz	ing 🗸	
last 14 days?				Intermittent show	/ers	Oil Wells			Industria	ıl		Silviculture		
Yes 🗌				Clear/sunny		Land Dis	posal		Row Cro	ops		Urban Runo Storm Sewe	off/	
No 🗹		7	$\checkmark$	Cloudy		Residenti	al	$\checkmark$						
INSTR	EAM FE	ATURES	í.	HYDRAULIC STRUC	TURES	STREAM	I FLOW		RIPARIA	N VEGETATION	I	CHANNEL A	LTERATION	
Stream Width		2-5	ft	Dams		Dry		Trees	; ✓	Herbaceous	$\checkmark$	Dredging		
Maximum Dep	oth	0.2	ft	Bridge Abutments		Pooled		Grass	ses 🗹	Shrubs	$\checkmark$	Channelizatio	n 🗌	
Reach Length	_	25	m	Island		Low		Dom.	Tree/Sh	rub Taxa:		(Full) 🗌	(Partial)	
Discharge			cfs	Waterfalls		High			eastern	red cedar		hackb	erry	
			-	Other:		Normal	$\checkmark$		syc	amore		sugar r	naple	
Riffle/Ru	ın/Pool	Sequen	се	(No. Sampled in R	leach)		R	iffle	Run	Pool				
P-CHEM				Instrument Used:						Date Calibra	ted:			
Temp(°F)			D.C	). (mg/l)	%Satu	ration		-	oH(S.U.)	Cond. (µS	S/cm)		Turb.	

#### Substrate Characterization Riffle 10 P.C. % 80 % % Reach Total Est. Run Pool 10 Substrate Silt/Clay (<0.06 mm/0.002 in) Х Х Х х Х Х Sand (0.06–2 mm/0.002–0.08 in) Х Х Х Gravel (2-64 mm/0.08-2.52 in) Cobble (64–256 mm/2.52–10.08 in) Х Х Х Boulders (>256 mm/10.08 in) Bedrock

Bluegrass Bioregi (High Gradient Assess	on ments)	Headwater (<5.0 mi <sup>2</sup> )	Wadeable (>5.0 mi <sup>2</sup> )
Fully Supporting	(Excellent)	156-200	130-200
Supporting but Threatened and Partially Supporting	(Average)	142-155	114-129
Not Supporting	(Poor)	0-141	0-113

(2011) (Revision 1)

![](_page_42_Picture_3.jpeg)

#### High Gradient Bioassessment Stream Visit Sheet

Project Name:	Old Heady Property Stream Name: Intermittent Stream 6									
	R	BP High Gradient Habit	at							
Habitat		Condition Categ	gory	_						
Parameter	Optimal	Suboptimal	Marginal	Poor						
5CORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	54321						
Substrate/ Available	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well- suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.						
2. Embeddedness										
7 Score	Gravel, cobble, and boulder particles are 0- 25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.						
3. Velocity/Depth Regime 5 Score	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast- shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).						
4. Sediment Deposition 8 Score	Little or no enlargement of islands or point bars and less than 5% (<20% for low- gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low- gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50- 80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.						
5. Channel Flow Status 6 Score	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed. Water fills >75% of the available channel; or <25% of channel substrate is exposed.		Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.						
6. Channel Alteration 10 Score	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr.) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.						
7. Frequency of Riffles (or bends) 5 Score	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.						
Left/Right Bank	10 9	8 7 6	5 4 3	2 1						
8. Bank Stability4LB4RB	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.						
9. Vegetative Protection 4 LB 4 RB	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well- represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.						
10. Riparian Vegetative Zone Width 1LB 3_RB Total Score	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear- cuts, lawns, or crops) have not impacted zone. NOTES/COMMENTS:	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.						
66	Poor Quality									

## **APPENDIX C**

# APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)

Received April 19, 2021 Planning & Design

21-ZONE-00016

### I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 1/29/2021 ORM Number:

Associated JDs: N/A

Review Area Location<sup>1</sup>: State/Territory: Kentucky City: Louisville County/Parish/Borough: Jefferson Center Coordinates of Review Area: Latitude 38.171698° Longitude -85.521692°

### **II. FINDINGS**

- **A. Summary:** Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.
  - □ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
  - □ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
  - ☑ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
  - There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

#### B. Rivers and Harbors Act of 1899 Section 10 (§ 10)<sup>2</sup>

§ 10 Name	§ 10 Size	;	§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

#### C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters): <sup>3</sup>						
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination		
N/A.	N/A.	N/A.	N/A.	N/A.		

Tributaries ((a)(2) waters):							
(a)(2) Name	(a)(2) Siz	ze	(a)(2) Criteria	Rationale for (a)(2) Determination			
Intermittent 1	175	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Intermittent Stream 1 is three to seven feet wide with silt, sand, gravel, cobble and bedrock substrate. During the January 11, 2021 site visit the channel contained flowing and pooled water which indirectly contribute to an (a)(1) water.			
Intermittent 2	1,789	linear feet	(a)(2) Intermittent tributary contributes	Intermittent Stream 2 is approximately seven feet wide with silt, sand, gravel, cobble, boulders and bedrock substrate. During the January 11, 2021 site			

<sup>1</sup> Map(s)/figure(s) are attached to the AJD provided to the requestor.

<sup>2</sup> If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

<sup>3</sup> A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

Tributaries ((a)(2) waters):						
(a)(2) Name	(a)(2) Siz	ze	(a)(2) Criteria	Rationale for (a)(2) Determination		
			surface water flow directly or indirectly to an (a)(1) water in a typical year.	visit the channel contained flowing and pooled water which indirectly contribute to an (a)(1) water.		
Intermittent 3	102	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Intermittent Stream 3 is three to five feet wide with silt, sand, gravel and cobble substrate. During the January 11, 2021 site visit the channel contained flowing and pooled water which indirectly contribute to an $(a)(1)$ water.		
Intermittent 4	458	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Intermittent Stream 4 is two to four feet wide with silt, sand, gravel and cobble substrate. During the January 11, 2021 site visit the channel contained flowing and pooled water which indirectly contribute to an (a)(1) water.		
Intermittent 5	365	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Intermittent Stream 5 is three to six feet wide with silt, sand, gravel, cobble and bedrock substrate. During the January 11, 2021 site visit the channel contained flowing and pooled water which indirectly contribute to an (a)(1) water.		
Intermittent 6	249	linear feet	(a)(2) Intermittent tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Intermittent Stream 6 is two to five feet wide with silt, sand, gravel and cobble substrate.During the January 11, 2021 site visit the channel contained flowing and pooled water which indirectly contribute to an (a)(1) water.		

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):						
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination		
Pond 1	0.716	acre(s)	(a)(3) Lake/pond or impoundment of a jurisdictional water contributes surface water flow directly or indirectly to an	Pond 1 has a presumed maximum depth of eight feet with a silt substrate. Pond 1 is connected to downstream (a)(1) waters via Intermittent Stream 6.		

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):					
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination	
			(a)(1) water in a typical year.		
N/A.	N/A.	N/A.	N/A.	N/A.	

Adjacent wetlands ((a)(4) waters):						
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination		
N/A.	N/A.	N/A.	N/A.	N/A.		

#### **D. Excluded Waters or Features**

Excluded waters ((b)(1) – (b)(12)): <sup>4</sup>					
Exclusion Name	Exclusion	Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination	
Ephemeral 1	84	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 1 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 1 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 2	289	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 2 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 2 is a $(b)(3)$ water and is therefore excluded from the rule.	
Ephemeral 3	21	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 3 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 3 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 4	412	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 4 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 4 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 5	175	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 5 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 5 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 6	94	linear feet	(b)(3) Ephemeral feature, including an ephemeral	Eph 6 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field	

<sup>&</sup>lt;sup>4</sup> Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area. <sup>5</sup> Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

Excluded waters ((b)(1) – (b)(12)):4					
Exclusion Name	Exclusion	n Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination	
			stream, swale,	assessment. Eph 6 is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	
Ephemeral 7	26	linear	(b)(3) Ephemeral	Eph 7 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream, swale,	assessment. Eph 7 is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	
Ephemeral 8	38	linear	(b)(3) Ephemeral	Eph 8 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream, swale,	assessment. Eph 8 is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	
Ephemeral 9	111	linear	(b)(3) Ephemeral	Eph 9 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream, swale,	assessment. Eph 9is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	
Ephemeral 10	120	linear	(b)(3) Ephemeral	Eph 10 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream, swale,	assessment. Eph 19 is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	
Ephemeral 11	169	linear	(b)(3) Ephemeral	Eph 11 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream, swale,	assessment. Eph 11 is a (b)(3) water and is	
	07	12	gully, rill, or pool.	therefore excluded from the rule.	
Epnemeral 12	97	linear	(b)(3) Epnemeral	Eph 12 only contains surface water flowing or	
		teet	reature, including	pooling in direct response to precipitation and	
			an epnemeral	nad no flow in the channel during the field	
			stream, swale,	assessment. Eph 12 is a $(D)(3)$ water and is	
Ephomoral 12	76	lineer	(b)(2) Ephamoral	End 12 only contains surface water flowing or	
⊏priemeral 13	10	foot	(u)(o) ⊏priemeral	Epril 15 only contains surface water howing of	
		ieet	an enhomoral	bad no flow in the channel during the field	
			stream swale	assessment Enh 13is a (b)(3) water and is	
			aully rill or pool	therefore excluded from the rule	
Enhemeral 14	130	linear	(h)(3) Ephemeral	Enh 14 only contains surface water flowing or	
	100	feet	feature including	nooling in direct response to precipitation and	
		1000	an enhemeral	had no flow in the channel during the field	
			stream swale	assessment Fnh 14 is a (h)(3) water and is	
			aully, rill, or pool	therefore excluded from the rule	
Ephemeral 15	81	linear	(b)(3) Enhemeral	Eph 15 only contains surface water flowing or	
		feet	feature, including	pooling in direct response to precipitation and	
			an ephemeral	had no flow in the channel during the field	
			stream. swale.	assessment. Eph 15 is a (b)(3) water and is	
			gully, rill, or pool.	therefore excluded from the rule.	

Excluded waters ((b)(1) – (b)(12)):4					
Exclusion Name	Exclusion	n Size	Exclusion <sup>5</sup>	Rationale for Exclusion Determination	
Ephemeral 16	167	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 16 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 16 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 17	120	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 17 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 17 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 18	65	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 18 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 18 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 19	45	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 19 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 19 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 20	95	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 20 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 20 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 21	21	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 21 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 21 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 22	31	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 22 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 22 is a (b)(3) water and is therefore excluded from the rule.	
Ephemeral 23	135	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Eph 23 only contains surface water flowing or pooling in direct response to precipitation and had no flow in the channel during the field assessment. Eph 23 is a (b)(3) water and is therefore excluded from the rule.	

### **III. SUPPORTING INFORMATION**

**A.** Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

Information submitted by, or on behalf of, the applicant/consultant: Request for Jurisdictional Determination for Sunrise Builders, LLC

This information is sufficient for purposes of this AJD.

Rationale: N/A

- □ Data sheets prepared by the Corps: Title(s) and/or date(s).
- Photographs: Aerial and Other: site photographs January 11, 2021
- $\Box$  Corps site visit(s) conducted on: Date(s).
- Previous Jurisdictional Determinations (AJDs or PJDs): ORM Number(s) and date(s).
- Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*
- USDA NRCS Soil Survey: SSURGO, Jefferson County, Kentucky (2008).
- USFWS NWI maps: Title(s) and/or date(s).
- USGS topographic maps: 1:24,000 Jeffersontown, Kentucky Quadrangle.

#### Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

- **B.** Typical year assessment(s): N/A or provide typical year assessment for each relevant data source used to support the conclusions in the AJD.
- C. Additional comments to support AJD: N/A or provide additional discussion as appropriate.