APPENDIX G WETLAND DELINEATION REPORT

Preliminary Wetland Delineation

VORTAC Relocation Project

Pulaski County, Arkansas



Prepared For:

Little Rock Port Authority



Port of Little Rock

January 2020



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1.0 Introduction

The Little Rock Port Authority (LRPA) is proposing the relocation navigational equipment used by commercial, military, and private aircraft. The relocation would allow the expansion the LRPA industrial complex into the 53-acre plot (Study Area) and includes Very High Frequency Omni Range (VOR) and Tactical Air Navigation Aid (TACAN) equipment which are currently located approximately 5 miles south of the Clinton National Airport (LIT). The Project is known as the VORTAC Relocation Project.

The proposed relocation site, located approximately 6 miles northeast of LIT, meets the stringent criteria for equipment installation as defined by FAA. In addition to the navigational equipment, an access road, 3-phase utility power line, and a phone line would need to be installed. LRPA has retained Garver, LLC to develop planning documents and conduct a preliminary wetland delineation and completion of a National Environmental Policy Act (NEPA) Environmental Assessment.

1.1 Project Area

The proposed project area is located just east of Highway 440 approximately 2 miles north of the I-40 and I-440 interchange. Access to the site is granted from I-40 by taking exit 161 north to Diamond Dr. From here, travel west for one mile and turn north on to Harris Rd., and continue for 1.3 miles to the property gate. Wetland research was conducted within the 53-acre Study Area which included a 1-mile x 100-foot buffer for the proposed access road. The site is currently a cattle farm which grows Bermudagrass hay. The flat and open nature of the property meets the installation criteria of vertical obstruction free requirements (see Appendix B for an Overview Map). General land-use in the area is mostly agricultural land with few residences to the west and some commercial properties along I-40 to the south. Ink Bayou, an oxbow swamp, acts as the southern boundary of the Study Area.

The EPA Level IV Ecoregions describe the ecosystem as the Arkansas/Ouachita River Holocene Meander Belts. This region is characterized by flat to nearly flat floodplain (refer to Exhibit D for floodplain map) containing the meander belts of the present and past courses of





the lower Arkansas River. Ecosystem features include point bars, natural levees, abandoned channels, and oxbow lakes. Observed topography and features in or adjacent to the project area included flat agricultural land with swales, oxbows, and river meander scars.

1.1.1 Hydrology

According to the Bill and Hillary Clinton National Airport weather station, the project area received approximately 2.25 inches of rain within the previous two weeks of the site visit. Hydrology on site seemed to be a result of surface run-off and a seasonally high water table. Observed aquatic features were contained within depressions and swales which are poorly drained due to soil characteristics or poor connectivity to adjacent aquatic features. Two wetlands in the study area appeared to be river meander scars while an oxbow swamp (Ink Bayou) acted as the southern Study Area boundary. No streams or farm ponds are located within the Study Area. Hydrology indicators within aquatic features are described in Wetland Delineation Data Forms found in Appendix G.

1.1.2 Vegetation

Vegetation in the Study Area was significantly disturbed by agriculture (e.g. planting, mowing, and cattle grazing). Most of the vegetation to the north consisted of Bermudagrass (*Cynodon dactylon*) except for wet areas. Wetlands were dominated by smartweed (*Persicaria sp.*), rush (*Juncus sp.*), and flat sedge (*Cyperus sp.*). Areas to the south were also dominated by Bermudagrass hay with areas of switchgrass (*Panicum virgatum*), smartweed, lawn marsh-pennywort (*Hydrocotyle sibthorpioides*), black willow (*Salix nigra*), and buttonbush (*Cephalanthus occidentalis*) along Ink Bayou. The adjacent oxbow briefly encroaches on the southern part of the Study Area boundary and included vegetation such as rush, duckweed (*Lemna sp.*), bald cypress (*Taxodium distichum*), and water tupelo (*Nyssa aquatica*).Vegetation within aquatic features is described in Wetland Delineation Data Forms found in Appendix G.

1.1.3 Soils

Soils in the Study Area are comprised of Perry clay, 0 to 1 percent slopes, to the north and Rilla silt loam, 0 to 1 percent slopes, to the south (See Appendix F for a NRCS soils map). Rilla silt





loam is considered well drained and exhibits a 5 percent hydric component. The soil, although considered well drained by NRCS, exhibited a restrictive layer of clay loam which acts as an aquitard. Pooling in this part of the Study Area is likely a result of this characteristic and the land being built up or amended. Perry clay soils are poorly drained and have a 90 percent hydric rating. Both soil series are listed on the NRCS Hydric Soils List. Soils within aquatic features are described in Wetland Delineation Data Forms found in Appendix G.

1.2 Regulatory Basis

Discharges of dredged or fill material into waters of the United States are regulated under Section 404 of the Clean Water Act. Any such action proposed in wetlands or other waters of the U.S. are subject to review by the U.S. Army Corps of Engineers (USACE) and other federal and state agencies and require authorization by USACE. For jurisdictional purposes, USACE and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as follows: *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (USACE 1987).

2.0 Methodology

A field investigation of the Study Area was performed by Colby Marshall of Garver on November 19, 2019. The Study Area was visually inspected to locate areas of potentially jurisdictional wetlands and waterways. Detailed delineation exhibits are provided in Appendix C. Detailed information was collected at 12 locations to document the wetland and upland characteristics observed on the site. In addition to these 12 data points (DPs), as recorded in the data forms in this report, observation points were taken throughout the site. Wetland determinations were made using observable vegetation, hydrology, and soils in accordance with the routine approach described in the USACE Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). Wetland data forms can be found in Appendix G.





The U.S. Fish and Wildlife Service (USFWS) in cooperation with Cowardin, et al. (1979), have identified a classification system that is widely accepted by the USACE and USFWS in relation to classifying wetland and stream habitats (i.e., *Classification of Wetlands and Deepwater Habitats of the United States*). Using the Cowardin system, USFWS provides preliminary wetland data for the U.S. through the National Wetlands Inventory (NWI). According to the NWI, Ink Bayou (PFO 1/2F) is the only wetland identified adjacent to the Study Area (see Appendix E). Wetlands and streams on the project site have been identified utilizing the methodology presented in this classification system. The Federal Emergency Management Agency (FEMA) provides a public source for flood hazard information and was reviewed as part of this delineation. A FEMA floodplain map can be found in Appendix D.

Garver also reviewed United States Geological Survey (USGS) topographic quadrangle maps for the presence of streams and other waterbodies as well as the Natural Resources Conservation Service Soil Data (Appendix F). Photographs of the aquatic features present on the site were taken during the wetland delineation and are provided in Appendix H.

3.0 Results

3.1 Wetlands

Wetland 1 (W 1) is classified as PEM1E (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated) and is located near the property gate on Harris Rd. Originally thought to be out of the Study Area, this vegetated swale was delineated after the fact based on observation and desktop data. The hydrology indicators included inundation and saturation on aerial imagery. Vegetation observed included rush species. A total of 0.02 acre is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with oxbow swamps to the northeast, thence Forty Point Lake (a USGS-mapped aquatic feature).

Wetland 2 (W 2) is also classified as PEM1E and is located approximately 700 feet west of W 1 on Harris Rd. This wetland was also delineated after the fact based on observation and desktop data. Hydrology indicators included inundation and saturation on aerial imagery. Vegetation





observed included rush species. A total of 0.02 acre is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou (a USGS-mapped aquatic feature) to the southwest.

Wetland 3 (W 3) is also classified as PEM1E and is located approximately 520 feet west of W 2 on Harris Rd. This wetland was also delineated after the fact based on observation and desktop data. Hydrology indicators included inundation and saturation on aerial imagery. Vegetation is assumed to be hydrophytic. A total of 0.03 acre is located within the Study Area. This feature is poorly drained due to impoundment by Harris Rd., and is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou.

Wetlands W 4a & 4b are classified as PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded) and PFO1C (Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded) and are located at latitude 34.800686° and longitude -92.145987°. These fringe wetlands appeared to coincide with high-water marks on deciduous vegetation in the adjacent Ink Bayou. Wetland 4a exhibited water marks and dominant vegetation observed included sedge, rush, and lawn marsh-pennywort. Forested sections of the wetland (W 4a) included bald cypress and buttonbush. This area exhibited hydric soils (10YR 4/1 with redoximorphic features). A total of 0.03 acre (0.01 ac PEM and 0.02 ac PFO) is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou.

Wetlands W 5a & 5b are classified as PEM1E and PFO1E (Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded/Saturated) and are located at latitude 34.802558° and longitude -92.147184°. This series of pocket wetlands exhibited hydrology indicators (drainage patterns, saturation on aerial imagery, and geomorphic position) at the data point and surface water at observation points nearby. Vegetation observed included black willow, buttonbush, sedge, and switchgrass. This area exhibited hydric soils (10YR 5/2 with redoximorphic features). A total of 0.3 acre (0.25 ac PEM and 0.05 ac PFO) is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou.

Wetland 6 (W 6) is classified as a PEM1E and is located at latitude 34.803807° and longitude -92.148709°. This wetland exhibited primary hydrology indicators (surface water, saturation, and





inundation on aerial imagery), and vegetation observed included smartweed and sedge. This area exhibited hydric soils with a gleyed matrix (gley 1 4/10y). A total of 0.15 acre is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou.

Wetland 7 (W 7) is classified as a PEM1E and is located at latitude 34.804284° and longitude -92.149250°. This wetland exhibited primary hydrology indicators (surface water, saturation, and inundation on aerial imagery), and vegetation observed included switchgrass and sedge. This area exhibited hydric soils (10YR 6/2 with redoximorphic features). A total of 0.12 acre is located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with Ink Bayou.

Wetland 8 (W 8) is classified as PEM1C and is located at latitude 34.810012° and longitude -92.153452°. This vernal pool exhibited primary hydrology indicators (surface water, saturation, and inundation on aerial imagery) and vegetation observed included rush, sedge, and lawn marsh-pennywort. This area exhibited hydric soils (10YR 4/2 with redoximorphic features). A total of 3.37 acres are located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with surrounding wetlands and oxbows.

Wetland 9 (W 9) is classified as PEM1C and is located at latitude 34.810750° and longitude -92.152618°. This wetland exhibited primary hydrology indicators (surface water, saturation, and inundation on aerial imagery) and vegetation observed included smartweed and flatsedge. This area exhibited hydric soils (10YR 5/1 with redoximorphic features). A total of 6.21 acres are located within the Study Area. This feature is likely subject to regulation by the USACE due to the surface hydrology connection with surrounding wetlands and oxbows.

3.2 Summary

In summary, 9 wetlands (totaling 10.25 acres), were identified within the Study Area (Table 1). No streams, ponds or other aquatic features were present within the Study Area. This report is to be presented to the USACE for concurrence and determination of appropriate 404 permitting. Impact determination and permitting will be pursued after issuance of a Preliminary Jurisdictional Determination and the study area can be refined to minimize impacts to wetlands and other





waters.

Table 1: Wetlands

Wetland	Cowardin Classification	Acreage Within the Study Area
Wetland 1	PEM1E	0.02
Wetland 2	PEM1E	0.02
Wetland 3	PEM1E	0.03
Wetland 4a	PEM1C	0.01
Wetland 4b	PFO1C	0.02
Wetland 5a	PEM1E	0.25
Wetland 5b	PFO1E	0.05
Wetland 6	PEM1E	0.15
Wetland 7	PEM1E	0.12
Wetland 8	PEM1C	3.37
Wetland 9	PEM1C	6.21

4.0 References

Google Earth. 3/4/1994 through 10/10/2018 Aerial Imagery. Accessed 11/18/2019. Software.

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- U. S. Army Corps of Engineers (USACE). 1987. U.S. Army Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Vicksburg, Mississippi.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Survey Staff. 2017. Web Soil Survey. <u>https://websoilsurvey.sc.egov.usda.gov/</u>. Accessed 11/18/2019.
- USDA, NRCS. 2019. The PLANTS Database (http://plants.usda.gov). National Plant Data Team, Greensboro, NC 27401-4901 USA.





U. S. Fish and Wildlife Service (USFWS). 2019. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <u>https://www.fws.gov/wetlands/data/mapper.html</u>. Accessed 11/18/2019.





APPENDIX A

Site Location Map







APPENDIX B

Site Overview Map







APPENDIX C

Water Features Map – Detailed View





APPENDIX D

FEMA Floodplain Map

APPENDIX E

USFWS National Wetlands Inventory Map

APPENDIX F NRCS Soils Map

Appendix G Wetland Data Forms

Project/Site: LRPA VORTAC	City/County: Little Rock/ Pulaski	Sampling Date: 11/19/2019
Applicant/Owner: LRPA	State: <u>AR</u>	Sampling Point: DP 1
Investigator(s): Colby Marshall	Section, Township, Range: S14, T2N, R11W	
Landform (hillslope, terrace, etc.): toeslope	Local relief (concave, convex, none): concave	Slope (%): ²
Subregion (LRR or MLRA). LRR N	12245° Long: -92.147464°	Datum. WGS 84
Soil Man Linit Name. Rilla silt loam, 0 to 1 percent slopes	NWI classific	ation. none
Are climatic / bydrologic conditions on the site typical for this time of y	ar2 Vos X No (If no oxplain in P	omarka
Are contained in the site typical for this time of years X and X and X are the site typical for this time of years		enarks.)
Are vegetation, Soil, or Hydrologysignificantly	Are Normal Circumstances p	
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area	
Hydric Soil Present? Yes X No	within a Wetland 2 V_{es}	No
Wetland Hydrology Present? Yes No		
Remarks:		
Vegetation mechanically cut and grazed/tramp	bled by cattle.	
Site meets wetland criteria.		
	Secondary India	tors (minimum of two required)
Primary Indicators (minimum of one is required: check all that apply)		Cracks (B6)
Surface Water (A1)		votated Conceive Surface (B8)
High Water Table (A2)	5) (I BR II) Drainage Pa	terns (B10)
$\Box \text{ Saturation (A3)} \qquad \Box \text{ Hydrogen Sulfide (}$	Ddor (C1) $Moss Trim Li$	nes (B16)
Water Marks (B1)	peres along Living Roots (C3) Drv-Season	Water Table (C2)
Sediment Deposits (B2)	ced Iron (C4)	rows (C8)
Drift Deposits (B3)	ction in Tilled Soils (C6)	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	e (C7)	Position (D2)
Iron Deposits (B5)	Remarks) 📃 Shallow Aqu	tard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)	🔲 Sphagnum n	noss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes No _X Depth (inches	·):	
Water Table Present? Yes No Depth (inches	b): <u>> 12"</u>	× ·
Saturation Present? Yes <u>No X</u> Depth (inches	5): <u>> 12"</u> Wetland Hydrology Preser	t? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photo	os, previous inspections), if available:	
Remarks:		
Site meets wetland hydrology criteria.		

Sampling Point: DP 1

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1	·			That Are OBL, FACW, or FAC: 3 (A)
2	. <u> </u>			Total Number of Dominant
3				Species Across All Strata: <u>3</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Drevelence Index workshoet
7				Prevalence index worksneet:
8	<u> </u>			I otal % Cover of: Multiply by:
		= Total Co	ver	
50% of total cover:	20% of	total cove	:	FACW species x 2 =
Sapling/Shrub Stratum (Plot size:)				FAC species x 3 =
1				FACU species x 4 =
2.				UPL species x 5 =
3.				Column Totals: (A) (B)
4.				Provalance Index - P/A -
5.				
6				
7				1 - Rapid Test for Hydrophytic Vegetation
0 0	·			2 - Dominance Test is >50%
0		– Tatal Ca		☐ 3 - Prevalence Index is ≤3.0
			ver	Problematic Hydrophytic Vegetation' (Explain)
50% of total cover:	20% of	total cove		
Herb Stratum (Plot size:)	15	V		¹ Indicators of hydric soil and wetland hydrology must
	15			be present, unless disturbed or problematic.
2. Junicus sp.	15	1 		Definitions of Four Vegetation Strata:
3. <u>Hydrocotyle sibthorpiolaes</u>	15	¥		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4. <u>Persicaria sp. ***</u>	10	N	OBL	more in diameter at breast height (DBH), regardless of
5				neight.
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb – All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10	<u> </u>			Woody vine – All woody vines greater than 3 28 ft in
11	<u> </u>			height.
12				
	55	= Total Co	ver	
50% of total cover: 27.5	20% of	total cove	.: 11	
Woody Vine Stratum (Plot size:)				
1.				
2.				
3.				
4.				
5	<u></u> -			
	- <u> </u>	= Total Co	Vor	Hydropnytic Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
Bomarka: (If absorved, list marphalagical adaptations bal	20 % 01		·	
*Of the 30 species of Cyperus listed for Arkansas in the Atla	ntic and Gul	f Coastal P	lain Region,	73% are FAC or wetter with the majority being FACW.
**Of the 23 species of Juncus listed for Arkansas in the Atlan	ntic and Gulf	f Coastal P	lain Region,	87% are FAC or wetter with the majority being FACW.
***Of the 14 species of Persicaria listed for Arkansas in the /	Atlantic and	Gulf Coasta	al Plain Regi	ion, 100% are FAC or wetter with the majority being OBL.
Site meets hydrophytic vegetation criteria.				

(inches)	Color (moist)	0/2	Color (moist)	%	Type ¹	1 oc^2	Toxturo	Remarks
0-2"	10 YR 3/3	100		/0			Silt Loam	Significant amount of cow manure.
2-6"	10 YR 4/1	96	10 YR 4/6	4	С	М	Silt Loam	
6-12"	5 YB 5/8	90					Clay Loam	
6-12"	10 VR 5/2							
0-12								
	<u> </u>							
¹ Type: C=C	Concentration, D=De	pletion, RN	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to al	LRRs, unless othe	rwise not	ed.)		Indicators	s for Problematic Hydric Soils ³ :
Histoso	bl (A1)		Polyvalue Be	elow Surfa	ace (S8) (l	.RR S, T, I	J) 1 cm	Muck (A9) (LRR O)
Histic E	Epipedon (A2)		Thin Dark Su	urface (S9) (LRR S,	T, U)		Muck (A10) (LRR S)
Black H	listic (A3)			ky Mineral	(F1) (LRF	R O)		ced Vertic (F18) (outside MLRA 150A,
Hydrog	en Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)			nont Floodplain Soils (F19) (LRR P, S, 1
	ed Layers (A5)		Depleted Ma	atrix (F3)				alous Bright Loamy Soils (F20)
	C Bodies (A6) (LRR F	P, I, U)		Surface (I	-6)			RA 153B)
	lucky Mineral (A7) (L	.RR P, I, U		rk Surface	∋(⊢/)			arent Material (TF2)
	resence (A8) (LRR (U)		essions (F	-8)			Shallow Dark Surface (TF12)
	luck (A9) (LRR P, T)	(044)		_RR U)		E4)	U Other	(Explain in Remarks)
	ed Below Dark Surfac	ce (A11)		nric (F11)		51) 'I DD O D	31	
	Dark Surface (A12)		Iron-Mangar		ses (F12) (I) India	cators of hydrophytic vegetation and
	Prairie Redox (A16) (, U)	we	itiand hydrology must be present,
	миску мineral (S1) ((LRR 0, 5)		·(F17)(IVII 	LRA 151)		uni	less disturbed or problematic.
	Gleyed Matrix (S4)			rtic (F18)	(MLRA 1:	(MI DA 4)		
	Redox (S5)			oodpiain S	solis (F19)		19A)	4620)
	d Matrix (S6)	ст II)	<u> </u>	Bright Loa	my Solis (F20) (MLF	(A 149A, 153C	J, 153D)
Dark St	Laver (if observed)	S, I, U)					1	
Restrictive	Layer (if observed)):						
Type:								Y
Depth (ir	nches):						Hydric Soi	Present? Yes <u>^</u> No
Remarks: c	Site monte hve	tria agil	oritorio				•	
3	site meets nyc	and som	cniena.					

Project/Site: LRPA VORTAC	City/County: Little Ro	ck/ Pulaski	Sampling Date: <u>11/19/2019</u>
Applicant/Owner:		State: AR	Sampling Point: DP 2
Investigator(s): Colby Marshall	_ Section, Township, R	ange: S14, T2N, R11W	
Landform (hillslope, terrace, etc.): hillslope	_ Local relief (concave,	convex, none): linear	Slope (%): <u>15</u>
Subregion (LRR or MLRA): LRR N		Long: -92.147422°	Datum: WGS 84
Soil Map Unit Name: Rilla silt loam, 0 to 1 percent slopes		NWI classific	ation: none
Are climatic / hydrologic conditions on the site typical for this time of y	vear? Yes X No	(If no, explain in R	emarks)
Are Vegetation X Soil or Hydrology significant	v disturbed?	"Normal Circumstances" r	present? Ves X No
Are Vegetation, Soil, or Hydrology significant	roblomatic? (If r		rs in Romarks)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point	locations, transects	, important features, etc.
		·	· · ·
Hydrophytic Vegetation Present? Yes No	- Is the Sample	d Area	
Hydric Soil Present? Yes No Wetland Hydrology Present? Ves No	within a Wetla	and? Yes	No <u></u>
Remarks:	-		
Vegetation mechanically cut and grazed/tram	pled by cattle.		
Site meets wetland criteria.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil	Cracks (B6)
Surface Water (A1)	13)	└── Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2) Mari Deposits (B1	(LRR U)	Drainage Pa	tterns (B10)
Saturation (A3) Hydrogen Sulfide	Door (C1)	ta (C2) Dry Saasan	Ines (B16) Water Table (C2)
Sediment Deposits (B2)	red Iron (C4)	Cravfish Bur	rows (C8)
\square Drift Deposits (B3) \square Recent Iron Redu	iction in Tilled Soils (C6) Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	e (C7)	Geomorphic	Position (D2)
Iron Deposits (B5)	Remarks)	Shallow Aqu	itard (D3)
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)		🔲 Sphagnum n	noss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes <u>No</u> Depth (inche	s):		
Water Table Present? Yes <u>No </u> Depth (inche	s):		Υ
Saturation Present? Yes <u>No ^</u> Depth (inche (includes capillary fringe)	s): W	/etland Hydrology Preser	nt? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspectior	ns), if available:	
Remarks:			
Site does not meet wetland hydrology criteria	•		

Sampling Point: DP 2

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1.				That Are OBL, FACW, or FAC: ¹ (A)
2				
2				Total Number of Dominant
· · · · · · · · · · · · · · · · · · ·				Species Across All Strata:(B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				
7.				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
· · · · · · · · · · · · · · · · · · ·		- Total Cov		OBL species x 1 =
50% 51.1.1				FACW species x 2 =
50% of total cover:	20% 01	total cover	:	FAC species x 3 =
<u>Sapling/Shrub Stratum</u> (Plot size:)				
1				raco species x 4
2				UPL species x 5 =
3.				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
0	·		<u> </u>	Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				$\boxed{\square}$ 3 - Prevalence Index is $\leq 3.0^1$
		= Total Cov	/er	Broblomatic Hydronbytic Vegetation ¹ (Evaluin)
50% of total cover:	20% of	total cover		
Harb Stratum (Plataiza: $\frac{30' \times 20'}{20'}$)	2070 01			
Paniaum virgatum	60	V	EAC	¹ Indicators of hydric soil and wetland hydrology must
		- T		be present, unless disturbed or problematic.
2. Cyperus sp.*	15	Y	FACW	Definitions of Four Vegetation Strata:
3. <u>Junucs sp.**</u>	10	Y	FACW	Tree – Woody plants, excluding vines, 3 in (7.6 cm) or
4. Solanum carolinense	10	Ν	FACU	more in diameter at breast height (DBH), regardless of
5.				height.
6				
7				than 3 in DBH and greater than 3 28 ft (1 m) tall
/				
8				Herb – All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11.				height.
12				
	95	- Total Cov	(or	
F00/ 51 (J 475			19	
	20% 01	total cover	:	
Woody Vine Stratum (Plot size:)				
1				
2				
3.				
4				
5				
0				Hydrophytic Vegetation
		= I otal Cov	/er	Present? Yes ^X No
50% of total cover:	20% of	total cover	:	
Remarks: (If observed, list morphological adaptations belo	ow).			
*Of the 30 species of Cyperus listed for Arkansas in the A	tlantic and	Gulf Coast	al Plain Re	gion, 73% are FAC or wetter with the majority being
FACW.				
**Of the 23 species of Juncus listed for Arkansas in the A	tlantic and		al Plain Roy	aion 87% are EAC or wetter with the majority being
I the 20 species of burieus listed for Arkansas III the A	and and	Sun Ouasla		gion, or to are three or weller with the majority being

Site meets hydrophytic vegetation criteria.

|--|

Color (moist) % Color (moist) % Type1 Loc2 Texture Remarks 0-2" 10YR 3/2 100 Silt Loam Significant amount of cow manure. Silt Loam Significant amount of cow manure. 2-5" 10YR 4/3 95 Silt Loam Silt Loam Significant amount of cow manure. 5-12" 5YR 5/6 95 Silt Loam Silt Loam Silt Loam 5-12" 10YR 4/3 5 Silt Loam Silt Loam Silt Loam 5-12" 10YR 4/3 5 Silt Clay Loam Silt Clay Loam Silt Clay Loam "Type: C=C-Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. *Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils3: Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Indicators for Problematic Hydric Soils3: Histic (A1) Polyvalue Below Surface (S9) (LRR S, T, U) I cm Muck (A9) (LRR O) Reduced Vertic (F18) (outside MLRA 150/ Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F20) Red Parent Material (TF2) Piedmont Floodplain Soils (F20) Maria (F10) (LRR V) Depleted Matrix (F2
0-2" 10YR 3/2 100 Silt Loam Significant amount of cow manure. 2-5" 10YR 4/3 95 Silt Loam Silt Loam 5-12" 5YR 5/6 95 Silt Loam Silt Loam 5-12" 10YR 4/3 5 Silt Loam Silt Loam 5-12" 10YR 4/3 5 Silt Loam Silt Joan 5-12" 10YR 4/3 5 Silt Joan Silt Joan 7 10YR 4/3 5 Silt Joan Silt Joan 7 10YR 4/3 5 Silt Joan Silt Joan 7 10YR 4/3 5 Silt Joan Silt Joan 1 1 Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : 1 1 Inm Muck (A9) (LRR 0) Loamy Gleyed Matrix (F2) <td< th=""></td<>
2-5" 10YR 4/3 95 Silt Loam 5-12" 5YR 5/6 95 Silt Loam 5-12" 10YR 4/3 5 Silt Loam 5 10YR 4/3 5 Silt Loam 5 10YR 4/3 10YR 4/3 Silt Loam
5-12" 5YR 5/6 95 Silt Loam 5-12" 10YR 4/3 5 Silty Clay Loam 5-12" 10YR 4/3 5 Silty Clay Loam 5-12" 10YR 4/3 5 Silty Clay Loam Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. tydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Histosol (A1) Dolyvalue Below Surface (S8) (LRR S, T, U) 2 cm Muck (A9) (LRR O) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) Reduced Vertic (F18) (outside MLRA 150/A) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S) Stratified Layers (A5) Depleted Dark Surface (F6) Anomalous Bright Loamy Soils (F20) Graine Bodies (A6) (LRR P, T, U) Redox Depressions (F8) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Siltocators of hydrophytic vegetation and wetland hydrology must be present, unders distributed as precharation Sandy Murchy Mineral (S1) (MER 0 S) Dathecherig (S1) (MER 0 S) Depleted
5-12" 10YR 4/3 5 Silty Clay Leam Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Histosol (A1) Dolyvalue Below Surface (S9) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR S, T, U) 2 cm Muck (A10) (LRR S) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) Reduced Vertic (F18) (outside MLRA 150/ Hydrogen Sulfide (A4) Depleted Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S) Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) (LRR P, T, U) Redox Depressions (F8) Anomalous Bright Loamy Soils (F20) Muck (A9) (LRR P, T) Marl (F10) (LRR U) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Iron-Manganese Masses (F12) (LRR O, P, T) ³ Indicators of hydrophytic vegetation and wetand hydrology must be present, unlace disturbed or problematic Sandy Wucky Minery (S1) (LRR P, T, U) Depleted Orbric Surface (F13) (LRR P, T, U) ³ I
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Histosol (A2) Thin Dark Surface (S9) (LRR S, T, U) 2 cm Muck (A0) (LRR S) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) Reduced Vertic (F18) (outside MLRA 150/ Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) (LRR P, S) Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B) S cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material (TF2) Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Sindicators of hydrophytic vegetation and wetland hydrology must be present, unlease disturbed or problematic Sandy Wucky Mineral (S1) (URR O, S) Delta Ochric (F17) (ML PA 151) Inon-Manganese Masses (F12) (LRR O, P, T) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unlease disturbed or problematic
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed):

Project/Site: LRPA VORTAC	_ City/County: Little Roo	ck/ Pulaski	Sampling Date: 11/19/2019
Applicant/Owner: LRPA		State: AR	Sampling Point: DP 3
Investigator(s); Colby Marshall	Section, Township, Ra	ange: S14, T2N, R11W	
Landform (hillslope, terrace, etc.); shoulder slope	Local relief (concave.	convex, none); convex	Slope (%): 15
Subregion (I RR or MI RA). LRR N	02354°	Long: -92.147380°	UGS 84
Soil Mon Linit Name: Rilla silt Ioam, 0 to 1 percent slopes		NW/L classifi	Datam
Are elimetic / hydrologic conditions on the site typical for this time of a	Vea X Na		
Are cirinatic / hydrologic conditions on the site typical for this time of y		(II no, explain in F	
Are vegetation, Soil, or Hydrology significant	ly disturbed? Are	"Normal Circumstances"	present? Yes <u>^</u> No
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If n	eeded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point	locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	- Is the Sample	d Aroa	
Hydric Soil Present? Yes NoX	- within a Wetla	u Alea und? Yes	No X
Wetland Hydrology Present? Yes No		103 <u></u>	
Remarks:			
Vegetation mechanically cut and grazed/tram	pled by cattle.		
Site does not meet wetland criteria.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	()	Surface Soil	Cracks (B6)
Surface Water (A1)	313)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	15) (LRR U)	🔲 Drainage Pa	tterns (B10)
Saturation (A3)	e Odor (C1)	📙 Moss Trim L	ines (B16)
Water Marks (B1)	pheres along Living Root	is (C3) 📙 Dry-Season	Water Table (C2)
Sediment Deposits (B2)	uced Iron (C4)	Crayfish Bur	rows (C8)
Drift Deposits (B3)	uction in Tilled Solis (Ub)) <u>L</u> Saturation v	isible on Aerial Imagery (C9)
	Ce (U1) Remarks)		$\frac{POSILION(D2)}{Itard(D3)}$
Inundation Visible on Aerial Imagery (B7)	(c)	FAC-Neutra	Test (D5)
Water-Stained Leaves (B9)		🔲 Sphagnum r	noss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No X Depth (inche	es):		
Water Table Present? Yes No Depth (inche	es):		X
Saturation Present? Yes No X Depth (inche	es): <u>> 14"</u> W	etland Hydrology Prese	nt? Yes <u>No ^X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspection	s), if available:	
Remarks:			
Site does not meet wetland hydrology criteria			

Sampling Point: DP 3

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: ³ (B)
4.				(_)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: (A/B)
				Prevalence Index worksheet:
/				Total % Cover of: Multiply by:
8				$\frac{1}{1} = \frac{1}{1} = \frac{1}$
		= Total Cov	/er	
50% of total cover:	20% of	total cover	:	
Sapling/Shrub Stratum (Plot size:)				FAC species x 3 =
1.				FACU species x 4 =
2.				UPL species x 5 =
2				Column Totals: (A) (B)
4				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
6				1 - Rapid Test for Hydrophytic Vegetation
7				2 - Dominance Test is >50%
8				$\boxed{\square}$ 3 - Prevalence Index is $\leq 3.0^1$
		= Total Cov	/er	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cover		
Herb Stratum (Plot size: ^{30'x20'})				
A Panicum virgatum	30	Y	FAC	Indicators of hydric soil and wetland hydrology must
I	30	v	FACU	
2. <u>Hudragstula sibtharnisidas</u>			FACW	Definitions of Four Vegetation Strata:
3. Hydrocotyle sibilitorpioldes		<u> </u>		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4. Solanum carolinense	15	N	FACU	more in diameter at breast height (DBH), regardless of
5				height.
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8.				
9				of size, and woody plants less than 3.28 ft tall
10				
				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	100	= Total Cov	/er	
50% of total cover: 50	20% of	total cover	. 20	
Woody Vine Stratum (Plot size:)				
1.				
2				
3				
4				
5				Hydrophytic
	. <u> </u>	= Total Cov	/er	Vegetation Present? Vec ^X No
50% of total cover:	20% of	total cover	:	
Remarks: (If observed, list morphological adaptations bel	ow).			
Site meets hydrophytic vegetation crite	ria.			

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	x Features	s			
(inches)	Color (moist)	%	Color (moist)	%	Type'	_Loc ²	Texture Remarks	
0-3"	10YR 4/2	100					Silt Loam	
3-7"	10YR 4/3	90					Silt Loam	
3-7"	5YR 5/6	10					Silt Loam	
7-14"	5YR 5/6	95					Silty Clay Loam	
7-14"	10YR 4/3	5						
<u> </u>				·				
17						·	21	<u> </u>
Type: C=C Hydric Soil	Indicators: (Appl	epietion, Rivi=r	RRs unless other	S=IVIASKed		uns.	Indicators for Problematic Hydric	x. Soils ³
Histosol Histic E Black H Hydroge Stratified Organic 5 cm Mu Muck Pr 1 cm Mu Deplete Thick D Coast P Sandy M Sandy C Stripped	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) Bodies (A6) (LRR ucky Mineral (A7) (resence (A8) (LRR P, T d Below Dark Surfa ark Surface (A12) rairie Redox (A16) Mucky Mineral (S1) Bleyed Matrix (S4) Redox (S5) H Matrix (S6)	P, T, U) LRR P, T, U) U)) ace (A11) (MLRA 150A) (LRR O, S)	 Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye Depleted Ma Redox Dark 3 Depleted Da Redox Depre Marl (F10) (L Depleted Ocl Iron-Mangan Umbric Surfa Delta Ochric Reduced Ver Piedmont Flo Anomalous E 	elow Surfac Inface (S9) y Mineral 1 ad Matrix (trix (F3) Surface (F rk Surface essions (F4 .RR U) hric (F11) ese Masse ice (F13) ((F17) (ML tic (F18) (bodplain S Bright Loar	(F1) (LRR S, (F1) (LRR S, (F1) (LRR F2) (F7) 8) (MLRA 15 (LRR P, T, .RA 151) (MLRA 156 oils (F19) my Soils (F	RR S, T, U T, U) O) RR O, P, U) DA, 150B) (MLRA 14 20) (MLR	 J) 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside I Piedmont Floodplain Soils (F19) Anomalous Bright Loamy Soils ((MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF1 Other (Explain in Remarks) T) ³Indicators of hydrophytic vege wetland hydrology must be p unless disturbed or problema (9A) (A 149A, 153C, 153D) 	VILRA 150A,B) (LRR P, S, T) (F20) (2) tation and resent, ttic.
Dark Su	rface (S7) (LRR P	, S, T, U)		ngni Luai	ny oons (i	20) (МЕК	A 143A, 1330, 133D)	
Restrictive	Layer (if observe	d):						
Type:								
Depth (in	ches):						Hydric Soil Present? Yes	NoX
Remarks:								
S	ite does not	meet hydi	ric soil criteri	а.				

Project/Site: LRPA VORTAC		City/County: Little	Rock/ Pulaski	Sampling Date: <u>11/19/2019</u>
Applicant/Owner: LRPA			State: AR	Sampling Point: DP 4
Investigator(s): Colby Marshall		Section, Township	, Range: S14, T2N, R1	1W
Landform (hillslope, terrace, etc.): swale	Local relief (conca	ve, convex, none): con	cave Slope (%): ⁰
Subregion (LRR or MLRA): LRR	N Lat: ³	34.802407°	Lona: -92.147243°	Datum: WGS 84
Soil Map Unit Name: Rilla silt loa	am, 0 to 1 percent slopes			lassification: ^{none}
Are climatic / hydrologic conditio	ns on the site typical for this time	of vear? Yes X	No (lf no, expla	ain in Remarks.)
Are Vegetation X . Soil	or Hydrology signific	cantly disturbed?	Are "Normal Circumsta	nces" present? Yes X No
Are Vegetation Soil	or Hydrology natura	lly problematic?	(If needed, explain any	answers in Remarks.)
SUMMARY OF FINDING	S – Attach site map show	wing sampling poi	nt locations, trans	sects, important features, etc.
Hydrophytic Vegetation Presen Hydric Soil Present? Wetland Hydrology Present?	t? Yes <u>X</u> No <u></u> Yes <u>X</u> No <u></u> Yes <u>X</u> No <u></u>	Is the Sam	pled Area etland? Yes	s <u>X</u> No
Remarks:	ally out and grazed/tr	ampled by cattle		
vegetation mechanic	any cut and grazed/tra	ampied by callie	•	
Site meets wetland c	riteria.			
HYDROLOGY				
Wetland Hydrology Indicator	s:		Secondary	/ Indicators (minimum of two required)
Primary Indicators (minimum of	f one is required; check all that a	pply)	Surfac	ce Soil Cracks (B6)
Surface Water (A1)	Aquatic Faun	a (B13)	L Spars	ely Vegetated Concave Surface (B8)
High Water Table (A2)	Marl Deposits	s (B15) (LRR U)	<u>⊻</u> Draina	age Patterns (B10)
Saturation (A3)	Hydrogen Sul	lfide Odor (C1)		Trim Lines (B16)
\square Water Marks (B1)		cospheres along Living F	$(C3) \square Dry-So \square Crave$	eason water Table (C2)
\square Drift Deposits (B3)		Reduction in Tilled Soils ((C6) Crayin	ation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Su	Irface (C7)	Geom	orphic Position (D2)
Iron Deposits (B5)	🔲 Other (Explai	n in Remarks)	🔲 Shallo	w Aquitard (D3)
Inundation Visible on Aeria	☐ Inundation Visible on Aerial Imagery (B7)			
Water-Stained Leaves (B9)		🔲 Sphag	gnum moss (D8) (LRR T, U)
Field Observations:	N.			
Surface Water Present?	Yes <u>No X</u> Depth (in	nches):		
Water Table Present?	Yes <u>No X</u> Depth (in	nches): <u>> 20"</u>		×
Saturation Present? (includes capillary fringe)	Yes No Depth (in	nches): <u>> 20"</u>	Wetland Hydrology I	Present? Yes <u> </u>
Describe Recorded Data (strea	m gauge, monitoring well, aerial	photos, previous inspec	tions), if available:	
Remarks [.]				
Site meets wetland h	vdrology criteria			
	yarology enterial			

Sampling Po	oint: ^{DP}	4
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, ,	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: ^{50'x5'})	% Cover	Species?	Status	Number of Deminent Creation
1 Cephalanthus occidentalis	50	Y	OBL	That Are OBL EACW or EAC: 4 (A)
o Salix nigra	20	Y	OBL	
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Demonst of Deminent Creation
5.				That Are OBL_EACW/ or EAC: 100 (A/B)
6				
7				Prevalence Index worksheet:
-				Total % Cover of: Multiply by:
8		. <u> </u>		OBI species x 1 =
	70	= Total Cov	/er	
50% of total cover: ³⁵	20% of	total cover	: 14	FACW species x 2 =
Sapling/Shrub Stratum (Plot size:				FAC species x 3 =
1				FACU species x 4 =
				UPL species x 5 =
2				Column Totale: (A) (B)
3				
4				Prevalence Index = B/A =
5.				
6				nyurophytic vegetation indicators:
0				1 - Rapid Test for Hydrophytic Vegetation
/				2 - Dominance Test is >50%
8				3 - Prevalence Index is $\leq 3.0^{1}$
		= Total Cov	/er	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	f total cover		
Horb Stratum (Plot size: $50'x5'$			·	1
	20	v	EACW	Indicators of hydric soil and wetland hydrology must
			TACW	be present, unless disturbed or problematic.
2. Panicum virgatum	20	Y	FAC	Definitions of Four Vegetation Strata:
3				Tree Mondy plants evoluting vince 2 in (7.6 cm) or
4.				more in diameter at breast height (DBH), regardless of
5				height.
5				
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				Herb – All berbaceous (non-woody) plants, regardless
9.				of size, and woody plants less than 3.28 ft tall.
10				
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	40	= Total Cov	ver	
50% of total cover: ²⁰	20% of	total cover	8	
Woody Vine Stratum (Plot size:				
2				
3				
4	_			
5				
		- Total Occ		nyarophytic Vegetation
			rei	Present? Yes ^X No
50% of total cover:	20% of	total cover	:	
Remarks: (If observed, list morphological adaptations bel	ow).			
*Of the 30 species of Cyperus listed for Ark	ansas in	the Atlai	ntic and	Gulf Coastal Plain Region. 73% are FAC
or wetter with the majority being FACW				
Site moste hydrophytic vegetation eriteria				

SOI	L
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Profile Dese	cription: (Describe	to the dep	th needed to docun	nent the i	indicator	or confirr	n the absence of i	indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type'	_Loc ²	Texture	Remarks
0-3"	10 YR 4/2	100					Silt Loam	
3-7"	10 YR 5/2	97	10 YR 5/6	3	С	М	Silt Loam	
7-20"	5 YR 5/6	100					Silty Clay Loam	
7.20" 5 YR 5/6 100 Silt Udant 9 Silt Udant Silt Udant Silt Udant 100 Silt Udant Silt Udant Silt Udant 11 Silt Udant Silt Udant Silt Udant 12 Silt Udant Silt Udant Silt Udant 13 Silt Udant Silt Udant Silt Udant 14 Silt Udant Silt Udant Silt Udant 14 Silt Udant Silt Udant Silt Udant								
Restrictive	Layer (if observed)	:						
Туре:								
Depth (in	ches):						Hydric Soil Pre	esent? Yes ^X No
Remarks: S	ite meets hyd	ric soil d	criteria.					

Project/Site: LRPA VORTAC	_ City/County: Little Rock/ Pr	ulaski	Sampling Date: <u>11/19/2019</u>	
Applicant/Owner: LRPA		State: AR	Sampling Point: DP 5	
Investigator(s): Colby Marshall	Section, Township, Range	S14, T2N, R11W		
Landform (hillslope, terrace, etc.); agricultural field	Local relief (concave, conv	/ex. none): concave	Slope (%): 0	
Subregion (LRR or MLRA). LRR N	02752° Lon	g92.147302°	UGS 84	
Soil Man Unit Name. Rilla silt loam, 0 to 1 percent slopes	101	9NWI classifi	Datam	
Are climatic / bydralagic conditions on the site typical for this time of	Voor2 Voc X No		Pomarka)	
Are Viscontation X Opil Are a liveled and a site typical for this time of	year res No			
Are vegetation, Soll, or Hydrology significant	Iy disturbed? Are Nor	rmai Circumstances	present? Yes <u></u> No	
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If neede	ed, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showir	ig sampling point loca	ations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes X No				
Hydric Soil Present? Yes No	- Is the Sampled Ard	ea Vaa X	No	
Wetland Hydrology Present? Yes No	- within a wetland?	Yes <u>**</u>	NO	
Remarks:				
Vegetation mechanically cut and grazed/tram	pled by cattle.			
Site does not meet wetland criteria.				
		Coordination in the disc		
Wetland Hydrology Indicators:	a)	Secondary Indica	ators (minimum of two required)	
Primary indicators (minimum of one is required; check all that apply	<u>')</u>		Cracks (B6)	
L High Water Table (A2)	13) 15) (I DD II)	Drainage Pa	getated Concave Surface (B8)	
Saturation (A3)	Odor(C1)		ines (B16)	
Water Marks (B1)	beres along Living Roots (C	3) Dry-Season	Water Table (C2)	
\Box Sediment Deposits (B2) \Box Presence of Red	uced Iron (C4)	Cravfish Bur	rows (C8)	
Drift Deposits (B3)	uction in Tilled Soils (C6)	Saturation V	isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	ce (C7)	Geomorphic	Position (D2)	
Iron Deposits (B5)	Remarks)	Shallow Aqu	iitard (D3)	
Inundation Visible on Aerial Imagery (B7)		FAC-Neutral Test (D5)		
Water-Stained Leaves (B9)		🔲 Sphagnum r	noss (D8) (LRR T, U)	
Field Observations:				
Surface Water Present? Yes No Depth (inche	≥s):			
Water Table Present? Yes No Depth (inche	≥s):>14"			
Saturation Present? Yes <u>No X</u> Depth (inche	es): <u>> 14"</u> Wetlar	nd Hydrology Prese	nt? Yes <u>No ^X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial pho		available:		
Remarks:				
Site does not meet wetland hydrology criteria				

Sampling Point: DP 5

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size:) 1	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)		
2				Total Number of Dominant		
3				Species Across All Strata: (B)		
4				Percent of Dominant Species		
5				That Are OBL, FACW, or FAC: 100 (A/B)		
6				Drevelance Index workshoet		
7				Tetal % Cover of Multiply by		
8						
		= Total Co	ver			
50% of total cover:	20% of	total cover	:	FAC opposing x 2		
Sapling/Shrub Stratum (Plot size:)				FAC species x 3		
1						
2				Column Totolo: (A) (P)		
3				(A)(B)		
4				Prevalence Index = B/A =		
5				Hydrophytic Vegetation Indicators:		
6				1 - Rapid Test for Hydrophytic Vegetation		
7				✓ 2 - Dominance Test is >50%		
8				\Box 3 - Prevalence Index is $\leq 3.0^1$		
		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)		
50% of total cover:	20% of	total cover	:			
Herb Stratum (Plot size: ^{30'})				¹ Indicators of hydric soil and wetland hydrology must		
1. Panicum virgatum	85	Y	FAC	be present, unless disturbed or problematic.		
2. Persicara sp.*	15	N	OBL	Definitions of Four Vegetation Strata:		
3				Tree – Woody plants, excluding vines 3 in (7.6 cm) or		
4				more in diameter at breast height (DBH), regardless of		
5				height.		
6				Sapling/Shrub – Woody plants, excluding vines, less		
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
8				Herb – All herbaceous (non-woody) plants, regardless		
9				of size, and woody plants less than 3.28 ft tall.		
10				Woody vine – All woody vines greater than 3 28 ft in		
11				height.		
12						
	100	= Total Co	ver			
50% of total cover: ⁵⁰	20% of	total cover	. 20			
Woody Vine Stratum (Plot size:)						
1						
2						
3						
4						
5				Hydrophytic		
		= Total Co	ver	Vegetation		
50% of total cover:	20% of	total cover	:	Present? Yes No		
Remarks: (If observed, list morphological adaptations bel	ow).					
*Of the 14 species of Persicaria listed f	or Arkar	nsas in	the Atla	ntic and Gulf Coastal Plain Region,		
100% are FAC or wetter with the majority being OBL.						
		,				
Site meets hydrophytic vegetation crite	ria.					

Profile Desc	ription: (Describ	e to the depth	n needed to docu	nent the indicator	or confirm	the absence of in	dicators.)	
Depth	Matrix		Redo	x Features				
<u>(inches)</u>	Color (moist)	%	Color (moist)	<u>%</u> Type ¹	Loc ²	Texture	Remark	(S
0-8"	10YR 5/3	98				Silt Loam		
0-8"	5YR 5/6	2				Silt loam		
9.14"				· ·				<u> </u>
	5 fh 5/4			·				
				· ·				
				· ·				
¹ Type: C=Co	oncentration, D=De	epletion, RM=F	Reduced Matrix, M	S=Masked Sand Gr	ains.	² Location: PL=I	Pore Lining, M=M	latrix.
Hydric Soil	Indicators: (Appl	icable to all L	RRs, un <mark>l</mark> ess othe	wise noted.)		Indicators for F	Problematic Hyd	ric Soils ³ :
Histosol	(A1)		Polyvalue Be	low Surface (S8) (L	.RR S, T, U	J) 🔲 1 cm Muck	(A9) (LRR O)	
Histic Ep	bipedon (A2)		Thin Dark Su	rface (S9) (LRR S,	T, U)	2 cm Muck	(A10) (LRR S)	
Black Hi	stic (A3)		Loamy Muck	y Mineral (F1) (LRF	(O)	Reduced Ve	ertic (F18) (outsid	de MLRA 150A,B)
Hydroge	en Sulfide (A4)		Loamy Gleye	d Matrix (F2)		D Piedmont F	loodplain Soils (F	19) (LRR P, S, T)
Stratified	d Layers (A5)		Depleted Ma	trix (F3)		<u> </u>	Bright Loamy So	ils (F20)
Drganic	Bodies (A6) (LRR	P, T, U)	Redox Dark	Surface (F6)		(MLRA 15	53B)	
📘 5 cm Mu	icky Mineral (A7) (LRR P, T, U)	Depleted Da	k Surface (F7)		Red Parent	Material (TF2)	
D Muck Pr	esence (A8) (LRR	U)	Redox Depre	essions (F8)		Uery Shallo	w Dark Surface (⁻	TF12)
1 cm Mu	ıck (A9) (LRR P, T)	Marl (F10) (L	.RR U)		Other (Expl	ain in Remarks)	
Depleted	d Below Dark Surfa	ace (A11)	Depleted Oc	nric (F11) (MLRA 1	51)	0		
Thick Da	ark Surface (A12)		Iron-Mangar	ese Masses (F12) (LRR O, P,	T) °Indicators	of hydrophytic ve	egetation and
Coast Pi	rairie Redox (A16)	(MLRA 150A)		ce (F13) (LRR P, T	, U)	wetland	hydrology must b	e present,
Sandy M	lucky Mineral (S1)	(LRR O, S)		(F17) (MLRA 151)		unless d	isturbed or proble	ematic.
Sandy C	Bleyed Matrix (S4)			tic (F18) (MLRA 15	0A, 150B)			
Sandy R	(edox (S5)			odplain Soils (F19)	(MLRA 14	9A)	D)	
	Matrix (S6)	с т II)		sright Loamy Soils (F20) (MLR	A 149A, 153C, 153	D)	
Dark Su	nace (S7) (LRR P,	, S, I, U)						
	Layer (if observed	1):						
Туре:								v
Depth (ind	ches):					Hydric Soil Pres	ent? Yes	No
Remarks:	ita dese pet	moot bud	ria agil gritari	2		·		
3		meet nyu	ne son enten	a.				

Project/Site: LRPA VORTAC	City/County: Little Rock/ Pulask	i	Sampling Date: 11/19/2019
Applicant/Owner: LRPA	s s <u> </u>	tate: AR	Sampling Point: DP 6
Investigator(s): Colby Marshall	Section, Township, Range: S1	4, T2N, R11W	
Landform (hillslope, terrace, etc.):agricultural field	Local relief (concave, convex, r	one): <u>concave</u>	Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat: Lat:	Long: <u>-9</u>	2.149250	Datum: <u>WGS 84</u>
Soil Map Unit Name: Hilla silt loam, 0 to 1 percent slopes		NWI classifica	ation: <u>none</u>
Are climatic / hydrologic conditions on the site typical for this time of year	ar? Yes <u>X</u> No (1	f no, explain in Re	emarks.)
Are Vegetation X, Soil, or Hydrology significantly	disturbed? Are "Normal	Circumstances" p	resent? Yes X No
Are Vegetation, Soil, or Hydrology naturally pro	blematic? (If needed, ex	kplain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locatio	ns, transects,	, important features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Yes X No	Is the Sampled Area within a Wetland?	Yes X	No
Vegetation mechanically cut and grazed/tramp Site meets wetland criteria.	ed by cattle.		
HYDROLOGY			
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) Marl Deposits (B15) Saturation (A3) Hydrogen Sulfide O Sediment Deposits (B1) Oxidized Rhizosphe Drift Deposits (B3) Presence of Reduct Algal Mat or Crust (B4) Thin Muck Surface Iron Deposits (B5) Other (Explain in Reference) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches) Water Table Present? Yes No Depth (inches) Saturation Present? Yes X No Depth (inches) Saturation Present? Yes) (LRR U) dor (C1) res along Living Roots (C3) ed Iron (C4) on in Tilled Soils (C6) (C7) emarks) 2 2 2 3 2 0 Wetland Here s, previous inspections), if avai	Secondary Indica Surface Soil (Sparsely Veg Drainage Pat Moss Trim Liu Dry-Season V Crayfish Burr Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Sphagnum m ydrology Presen able:	tors (minimum of two required) Cracks (B6) letated Concave Surface (B8) terns (B10) nes (B16) Water Table (C2) ows (C8) sible on Aerial Imagery (C9) Position (D2) tard (D3) Test (D5) loss (D8) (LRR T, U)
Remarks: Clayey soil at 3" acted as aquitard. Site meets wetland hydrology criteria.			

Sampling Point: DP 6

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.)	<u>% Cover</u>	<u>Species</u>	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4			·	Percent of Dominant Species
5			·	That Are OBL, FACW, or FAC: 100 (A/B)
6			·	Prevalence Index worksheet:
7			·	Total % Cover of: Multiply by:
8			·	OBL species x 1 =
		= Total Co	ver	FACW species x 2 =
50% of total cover:	20% of	total cove	r:	FAC species x 3 =
Sapling/Shrub Stratum (Plot size:)				FACU species x 4 =
1			·	UPL species x 5 =
2				Column Totals: (A) (B)
3			·	
4			·	Prevalence Index = B/A =
5			·	Hydrophytic Vegetation Indicators:
6		·	·	1 - Rapid Test for Hydrophytic Vegetation
/				2 - Dominance Test is >50%
8			·	3 - Prevalence Index is ≤3.0 ¹
50% 51.4		= Total Co	ver	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cove	r:	
Herb Stratum (Plot size: 50)	90	Y	FAC	¹ Indicators of hydric soil and wetland hydrology must
Persicara sp.*	10	N	OBL	Definitions of Four Vegetation Strata:
3			·	Definitions of Four Vegetation Otrata.
3				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
+. <u></u> 5			·	height.
6.			·	
7			·	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8				
9				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	100	= Total Co	ver	
50% of total cover: ⁵⁰	20% of	total cove	r: 20	
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5				Hydrophytic
		= Total Co	ver	Vegetation
50% of total cover:	20% of	total cove	r:	
Remarks: (If observed, list morphological adaptations be	ow).			
*Of the 14 species of Persicaria listed f	or Arkar	nsas in	the Atla	ntic and Gulf Coastal Plain Region,
100% are FAC or wetter with the major	rity being	g OBL.		
Site meets hydrophytic vegetation crite	ria.			

SOI	L
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Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es1		_	
(inches)	Color (moist)	%	Color (moist)		<u>Type'</u>		<u> </u>	Remarks
0-3"	10YR 5/1	92	10YR 5/8	8	C	M	Silt Loam	
3-12"	10 YR 6/2	97	10YR 5/6	2	С	М	Clay Silt Ioam	
3-12"	10YR 2/1	1						
¹ Type: C=Cd Hydric Soil Histosol Histoc Ep Black Hi Hydroge Stratified Organic Organic Coast Pi Land Ku Sandy M Sandy R Stripped Dark Su Restrictive I Type: Depth (int	Diricentration, D=Dep Indicators: (Applic (A1) Dipedon (A2) stic (A3) on Sulfide (A4) d Layers (A5) Bodies (A6) (LRR P icky Mineral (A7) (Ll esence (A8) (LRR L ick (A9) (LRR P, T) d Below Dark Surface (A12) rairie Redox (A16) (I fucky Mineral (S1) (Sleyed Matrix (S4) redox (S5) Matrix (S6) rface (S7) (LRR P, S -ayer (if observed)	- ' 	■ Reduced Matrix, MS LRRs, unless other Polyvalue Be Thin Dark Su Loamy Mucky Loamy Gleye Depleted Matrix Depleted Dar Redox Dark S Depleted Dar Redox Depre Marl (F10) (L Depleted Och Iron-Mangane A) Umbric Surfa Delta Ochric Reduced Ver Piedmont Flo Anomalous B	S=Maske wise not low Surfa rface (SS y Mineral d Matrix trix (F3) Surface (i k Surface (i k Surf		ains. .RR S, T, I T, U) CO) 51) LRR O, P, , U) 50A, 150B) (MLRA 14 F20) (MLF	² Location: Indicators U) 1 cm M 2 cm M 2 cm M Piedmo Anoma (MLF Red Pa Very S Other (49A) A 149A, 153C Hydric Soil	PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ : Auck (A9) (LRR O) Auck (A10) (LRR S) ed Vertic (F18) (outside MLRA 150A,B) ont Floodplain Soils (F19) (LRR P, S, T) alous Bright Loamy Soils (F20) RA 153B) arent Material (TF2) shallow Dark Surface (TF12) (Explain in Remarks) extors of hydrophytic vegetation and cland hydrology must be present, ess disturbed or problematic. , 153D) Present? Yes X No
Remarks: S	ite meets hyd	ric soil	criteria.					

Project/Site: LRPA VORTAC	City/County: Little Rock/ Pulas	ski	Sampling Date: 11/19/2019
Applicant/Owner: LRPA		State: AR	Sampling Point: DP 7
Investigator(s): Colby Marshall	Section. Township, Range: S	14, T2N, R11W	
Landform (hillslope, terrace, etc.); agricultural field	Local relief (concave, convex,	none): concave	Slope (%): 0
Subregion (I RR or MI RA). LRR N Lat. 34.80	4189°	92.149171°	Datum. WGS 84
Soil Map Linit Name. Rilla silt loam, 0 to 1 percent slopes		NWI classific	pation. none
Are elimetic / bydrologic conditions on the site typical for this time of y	oor2 Ves X No	/If no, evolain in R	Domorke)
Are climatic / nyurologic conditions on the site typical for this time or y			
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are norma	I Circumstances	
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed,	explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locatio	ons, transects	, important features, etc.
Hvdrophytic Veaetation Present? Yes X No			
Hydric Soil Present? Yes No	Is the Sampled Area	Vac	No X
Wetland Hydrology Present? Yes NoX	Within a wetiand r	tes	NO
Remarks:			
Vegetation mechanically cut and grazed/tram	oled by cattle.		
Site does not meet wetland criteria.			
HYDROLOGY			
Wetland Hydrology Indicators:			ators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	<u> </u>		Cracks (B6)
Surface Water (A1)	13) 5) (LBB II)		getated Concave Surface (B8)
High Water Lable (A2) III Niati Deposits (D)	Oder(C1)		itterns (B10)
Saturation (A3)	Udor (UT)		$\frac{100}{100}$
	indices along Living Roots (CO_{f}	Cravfish Bur	$\frac{1}{1000} = \frac{1}{1000} = \frac{1}{1000}$
Drift Deposits (B3)	ction in Tilled Soils (C6)	Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	e (C7)	Geomorphic	Position (D2)
Iron Deposits (B5)	Remarks)	Shallow Aqu	itard (D3)
Inundation Visible on Aerial Imagery (B7)	,	FAC-Neutral	Test (D5)
Water-Stained Leaves (B9)		Sphagnum n	noss (D8) (LRR T, U)
Field Observations:			
Surface Water Present? Yes No X Depth (inches	s):		
Water Table Present? Yes No Depth (inches	s): <u>> 12"</u>		X
Saturation Present? Yes <u>No X</u> Depth (inches (includes capillary fringe)	s): <u>>12"</u> Wetland I	Hydrology Preser	nt? Yes No X
Describe Recorded Data (stream gauge, monitoring well, aerial phot	tos, previous inspections), if ava	ailable:	
Remarks:			
Site does not meet wetland hydrology criteria.			

Sampling Point: DP 7

		Absolute	Dominant	Indicator	Dominance Test workshe	et:	<u> </u>
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Speci	es	
1					That Are OBL, FACW, or FA	AC: 1	(A)
2					Total Number of Deminent		
3.					Species Across All Strata:	1	(B)
4							(2)
5					Percent of Dominant Specie	es 100	
5:				·	That Are OBL, FACW, or FA	AC:	(A/B)
. 6				·	Prevalence Index worksho	eet:	
7		·	·	·	Total % Cover of:	Multiply by:	
8				·		<u> </u>	_
			= Total Co	ver			_
50%	of total cover:	20% of	total cove	r:	FACW species	_ x2=	_
Sapling/Shrub Stratum (Plot size:)				FAC species	_ x 3 =	_
1	<i>,</i>				FACU species	_ x 4 =	_
2					UPL species	_ x 5 =	_
2				·	Column Totals:	(A)	(B)
3		·		·		_ 、 ,	_ 、 /
4				·	Prevalence Index = E	3/A =	
5				·	Hydrophytic Vegetation Ir	ndicators:	
6					1 - Rapid Test for Hvdr	ophytic Vegetation	
7					2 - Dominance Test is	>50%	
8.						$< 3.0^{1}$	
			= Total Co	ver			
50%	of total opvor:	20% of	total aqua		Problematic Hydrophyt	ic Vegetation (Expla	iin)
50 %	or total cover	20 % 01	IUIAI COVE	•			
Herb Stratum (Plot size:)	05	V	FAC	¹ Indicators of hydric soil and	d wetland hydrology	must
1. Panicum virgatum		95	Y	FAC	be present, unless disturbe	d or problematic.	
2					Definitions of Four Vegeta	ation Strata:	
3					Tree Woody plants exclu	ding vines 3 in (76	cm) or
4					more in diameter at breast l	height (DBH), regard	less of
5.					height.	0 (), 0	
6							
7					than 3 in DBH and greater	than 3 28 ft (1 m) tal	s, iess
/				·			
8				·	Herb – All herbaceous (nor	n-woody) plants, rega	rdless
9				·	of size, and woody plants le	ess than 3.28 ft tall.	
10				·	Woody vine – All woody vi	nes greater than 3.28	3 ft in
11					height.	5	
12							
		95	= Total Co	ver			
50%	of total cover: 47.5	20% of	total cove	r. 19			
Moody Vino Stratum (Plot size:)	20/001					
)						
¹							
2				·			
3				·			
4				·			
5					Hydrophytic		
			= Total Co	ver	Vegetation		
50%	of total cover:	20% of	total cove	r.	Present? Yes	× No	
Demarket (If abaam od list marshales		20 /0 01		•			
Site meets hydrophytic ve	egetation criter	ria.					

SOIL

Profile Des	cription: (Describe	e to the dept	າ needed to docເ	ment the i	ndicator	or confirm	n the absence	of indicators.)	
Depth	Matrix		Red	ox Features	<u>s</u> 1				
(inches)	Color (moist)	%	Color (moist)	%	Type'		Texture	Remarks	
0-12"	10YR 5/3	98	10YR 5/6	2	С	M	Silt Loam		
						·			
						·			<u> </u>
						·			
¹ Type: C=C	oncentration, D=De	pletion, RM=I	Reduced Matrix, M	1S=Masked	Sand G	ains.	² Location:	PL=Pore Lining, M=Matrix	
Hydric Soil	Indicators: (Appli	cable to all L	RRs, unless oth	erwise note	ed.)		Indicators	for Problematic Hydric S	oils ³ :
Histoso	l (A1)		Polyvalue B	elow Surfa	ce (S8) (I	_RR S, T, l) 🛄 1 cm M	luck (A9) (LRR O)	
Histic E	pipedon (A2)		Thin Dark S	urface (S9)	(LRR S,	T, U)	2 cm M	luck (A10) (LRR S)	
Black H	istic (A3)		Loamy Muc	ky Mineral	(F1) (LR	R O)		ed Vertic (F18) (outside M	LRA 150A,B)
Hydrog	en Sulfide (A4)		Loamy Gley	ved Matrix (F2)		L Piedmo	ont Floodplain Soils (F19) ((LRR P, S, T)
Stratifie	d Layers (A5)		Depleted M	atrix (F3)			L Anoma	lous Bright Loamy Soils (F	20)
Drganic	Bodies (A6) (LRR I	P, T, U)	Redox Dark	Surface (F	6)			RA 153B)	
5 cm M	ucky Mineral (A7) (L	.RR P, T, U)	Depleted Da	ark Surface	(F7)		Red Pa	arent Material (TF2)	
L Muck P	resence (A8) (LRR	U)	Redox Dep	ressions (F	B)		Very SI	hallow Dark Surface (TF12	2)
1 cm M	uck (A9) (LRR P, T)		Marl (F10) (LRR U)			U Other (Explain in Remarks)	
Deplete	d Below Dark Surfa	ce (A11)	Depleted O	chric (F11)	(MLRA 1	51)	2		
Thick D	ark Surface (A12)		Iron-Manga	nese Masse	es (F12)	(LRR O, P,	T) [°] Indic	ators of hydrophytic vegeta	ation and
	Prairie Redox (A16)	(MLRA 150A)		ace (F13) (LRR P, 1	r, U)	wet	and hydrology must be pre	esent,
Sandy I	Mucky Mineral (S1)	(LRR O, S)	Delta Ochri	c (F17) (ML	.RA 151)		unle	ess disturbed or problemati	ic.
	Sleyed Matrix (S4)			ertic (F18) (MLRA 1	DOA, 150B)			
Sandy I	Redox (S5)			loodplain S	oils (F19)) (MLRA 14	19A)	4520	
	u Matrix (S6)	ст. IV	<u> </u>	Bright Loar	ny Solis ((F20) (IVILR	(A 149A, 153C,	153D)	
Dark St	Inace (S7) (LRR P,	5, 1, U) \.							
Restrictive	Layer (II observed):							
Type:									v
Depth (ir	ches):						Hydric Soil	Present? Yes	No
Remarks: c	te doos not r	noot hyd	ric soil critor	ia					
		neernyu		ia.					
1									

Project/Site: LRPA VORTAC	City/County. Little Rock/ Pulaski	Sampling Date: 11/19/2019
Applicant/Owner: LRPA	State:	AR Sampling Point: DP 8
Investigator(s). Colby Marshall	Section Township Range: S12, T2	N, R11W
Landform (hillologo, torrago, etc.), agricultural field		. concave
Contraction (Initial provide the contraction of the	Local relief (concave, convex, none) 809481°92.151	815° Sope (%) WGS 84
Subregion (LRR or MLRA): Lat: Lat: Lat: Lat:	Long:	Datum: Datum:
Soil Map Unit Name:	<u>'</u> ۱	JWI classification:
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>^</u> No (If no,	explain in Remarks.)
Are Vegetation, Soil, or Hydrology signification	ntly disturbed? Are "Normal Circu	mstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain	any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map show	ng sampling point locations, t	ransects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Site meets wetland criteria.	 Is the Sampled Area within a Wetland? 	Yes X No
HYDROLOGY Wetland Hydrology Indicators:	Seco	ndary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: check all that app	ly) 🗌 s	Surface Soil Cracks (B6)
Surface Water (A1)	(B13) 📃 s	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	315) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	le Odor (C1)	Aoss Trim Lines (B16)
Water Marks (B1) Oxidized Rhizos	spheres along Living Roots (C3) \square L	Dry-Season Water Table (C2)
Drift Deposite (P2)	duced from (C4) \Box C (C6) \Box C	Staylish Burrows (C8)
Algal Mat or Crust (B4)	$\frac{1}{2} = \frac{1}{2} = \frac{1}$	Seconomic Position (D2)
\square Iron Deposits (B5) \square Other (Explain i	n Remarks) \square	Shallow Aguitard (D3)
Inundation Visible on Aerial Imagery (B7)		-AC-Neutral Test (D5)
Water-Stained Leaves (B9)	<u> </u>	Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes X No Depth (incl	nes):3"	
Water Table Present? Yes X No Depth (incl	nes):0"	
Saturation Present? Yes X No Depth (includes capillary fringe)	nes): ^{0"} Wetland Hydrol	.ogy Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial pl	notos, previous inspections), if available:	
Remarks:		
Site meets wetland hydrology criteria.		

Sampling Point: DP 8

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2.				
3				Total Number of Dominant
				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 66.67 (A/B)
6				Brovelence Index werkeheet
7				
8				Iotal % Cover of: Multiply by:
		= Total Cov	/er	OBL species x 1 =
50% of total cover:	20% of	total cover		FACW species x 2 =
Sanling/Shrub Stratum (Plot size:			·	FAC species x 3 =
				FACU species x 4 =
				UPL species x 5 =
2			<u> </u>	Column Totals: (A) (B)
3				
4				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators
6.				1 Denid Test for Hudronbutic Vegetation
7				
0				2 - Dominance Test is >50%
o				3 - Prevalence Index is ≤3.0
		= Total Cov	/er	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cover	:	
Herb Stratum (Plot size: ^{30'})				¹ Indicators of hydric soil and wetland hydrology must
1. Persicaria sp.*	60	Υ	OBL	be present, unless disturbed or problematic.
2. Cyperus sp.**	20	Υ	FACW	Definitions of Four Vegetation Strata:
3. Cynodon dactylon	20	Y	FACU	
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5			·	height,
5				
6				Sapling/Shrub – Woody plants, excluding vines, less
7			<u> </u>	than 3 m. DBH and greater than 3.28 ft (1 m) tail.
8				Herb – All herbaceous (non-woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				Weedy vine All weedy vines greater than 2.29 ft in
11.				height.
12				
	100	- Total Cov		
50% aftetel array 50	000/ -/		. 20	
	20% OI	IOIAI COVER	•	
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4.				
5.				Hudronbutio
· · · · · · · · · · · · · · · · · · ·		= Total Cov		Vegetation
E0% of total action				Present? Yes X No
50% of total cover.	20% 0	total cover	·	
Remarks: (If observed, list morphological adaptations belo	OW).			
OF the 14 species of Persicaria listed for Arkansas in the OBI	Aliantic an	u Gulf Coas	siai Piain H	legion, 100% are FAC or wetter with the majority being
**Of the 30 species of Cyperus listed for Arkansas in the	Atlantic and	I Gulf Coas	tal Plain Re	egion, 73% are FAC or wetter with the majority being
FACW.				

Site meets hydrophytic vegetation criteria.

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	n the absence o	f indicators.)
Depth	Matrix		Rede	ox Feature	S 1	2	_	
(inches)	Color (moist)	%	Color (moist)	%	Type'		Texture	Remarks
0-12"	10YR 4/1	97	10YR 4/6	3	C	M	Silty Clay Loam	
				_				
					<u> </u>			
1						- <u></u>		
'Type: C=Co	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Maske	d Sand G	rains.	Location: F	PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appli)	cable to all	LRRS, unless othe	erwise not	ed.)		Indicators fo	or Problematic Hydric Solls":
	(A1)			elow Surfa	ace (S8) (LRR S, T, U	リ <u>ー</u> 1 cm Mu	uck (A9) (LRR O)
	bipedon (A2)		Thin Dark S	urface (S9) (LRR S	, T, U)		JCK (A10) (LRR S)
	stic (A3)			ky Mineral	(F1) (LR)	R 0)		d Vertic (F18) (outside MLRA 150A,B)
	n Sulfide (A4)		Loamy Gley	ed Matrix	(F2)			nt Floodplain Soils (F19) (LRR P, S, I)
	Layers (A5)	. .		atrix (F3)				ous Bright Loamy Soils (F20)
	Bodies (A6) (LRR I	-, Ι, U) ΠΟ Π Τ ΙΝ		Surrace (I	-6) - (FZ)			\mathbf{A} 153B)
	icky wineral (A7) (L	KK P, I, U)		ark Suriace	θ (Γ <i>1</i>)			ellew Derk Surface (TE12)
		J)			0)			allow Dark Surface (TFTZ)
	H Below Dark Surfa	ο (Δ11)		$\frac{1}{1}$		51)		
	ark Surface (A12)			nne (FFF) nese Mass	(F12)		T) ³ Indica	tors of hydrophytic vegetation and
	rairie Redox (A16) (MI RA 1504	1 Umbric Surf	ace (E13)	(IRR P "	(EIKIK 0, I , F II)	wetla	and hydrology must be present
Sandy M	lucky Mineral (S1)	LRR O. S)	Delta Ochric	c (F17) (MI	LRA 151)	., .,	unles	as disturbed or problematic.
Sandy C	leved Matrix (S4)	,	Reduced Ve	ertic (F18)	(MLRA 1	50A. 150B)		
Sandy R	edox (S5)		Piedmont FI	oodplain S	Soils (F19) (MLRA 14	I9A)	
Stripped	Matrix (S6)		Anomalous	Bright Loa	my Soils	(F20) (MLR	A 149A, 153C, ²	153D)
🔲 Dark Su	rface (S7) (LRR P,	S, T, U)		5	5		, ,	,
Restrictive I	_ayer (if observed)):						
Туре:								
Depth (inc	ches):						Hvdric Soil P	Present? Yes ^X No
Remarks:	,							
M	lixed soils.							
S	ite meets hvo	lric soil d	criteria.					

Project/Site: LRPA VORTAC	Citv/County: Little Rock/ Pulaski	Sampling	Date: 11/19/2019
Applicant/Owner: LRPA		te ^{. AR} Sampling	Point: DP 9
Investigator(s). Colby Marshall	Section Township Range ^{, S12}	T2N, R11W	
Landform (billslope, terrace, etc.), agricultural field	Local relief (concave, convex, no	ne). concave	Slope $(\%)$.
Subregion (LRR or MLRA). LRR N	<u>-</u> 2004 Teller (concave, convex, field) 310335°	152738°	
Sold Map Unit Name. Perry clay, 0 to 1 percent slopes, rarely flooded	Long	NW/L classification, none	Datam
	A No. (If		
Are climatic / hydrologic conditions on the site typical for this time o	year? Yes No (If	io, explain in Remarks.)	. X
Are Vegetation, Soil, or Hydrology significant	tly disturbed? Are "Normal C	rcumstances" present? Y	'es <u>//</u> No
Are Vegetation, Soil, or Hydrology haturally	problematic? (If needed, exp	lain any answers in Rema	rks.)
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point location	s, transects, importa	ant features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No	 Is the Sampled Area within a Wetland? 	Yes X No _	
Site meets wetland criteria.			
HYDROLOGY			
Wetland Hydrology Indicators:	S	econdary Indicators (minim	num of two required)
Primary Indicators (minimum of one is required; check all that app	v) [Surface Soil Cracks (B6	i)
Surface Water (A1)	B13)	Sparsely Vegetated Cor	ncave Surface (B8)
High Water Table (A2)	315) (LRR U)	Drainage Patterns (B10)
Saturation (A3)	e Odor (C1)	Moss Trim Lines (B16)	
U Water Marks (B1)	pheres along Living Roots (C3)	Dry-Season Water Tabl	e (C2)
Sediment Deposits (B2)	duced Iron (C4)	Crayfish Burrows (C8)	
	luction in Tilled Soils (C6)	Saturation Visible on Ae	erial Imagery (C9)
Algal Mat or Crust (B4)		Geomorphic Position (D	12)
Invertice Visible on Aprial Imagory (PZ)		Snallow Aquitard (D3)	
Water-Stained Leaves (B9)	L L	Sphagnum moss (D8) (I	
Field Observations:			
Surface Water Present? Yes X No Depth (incl	es):		
Water Table Present? Yes X No Depth (incl	es): >12"		
Saturation Present? Yes X No Depth (incl	es):>12" Wetland Hy	rology Present? Yes _	X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspections), if availa	ble:	
Remarks:			
Site meets wetland hydrology criteria.			

Sampling Point: DP 9

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 3 (A)
2.				
3				Total Number of Dominant
				Species Across All Strata. (B)
4				Percent of Dominant Species
5		<u> </u>		That Are OBL, FACW, or FAC: (A/B)
6				Provalance Index worksheet:
7				
8				Iotal % Cover of:Multiply by:
		= Total Cov	/er	OBL species x 1 =
50% of total cover:	20% of	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size:				FAC species x 3 =
				FACU species x 4 =
l				UPL species x 5 =
2	·			Column Totals: (A) (B)
3				
4				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators
6.				1 Denid Test for Undershutin Verstation
7				
7		. <u> </u>		2 - Dominance Test is >50%
8				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov	er	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20% of	total cover		
Herb Stratum (Plot size: ^{30'})				¹ Indicators of hydric soil and wetland hydrology must
1. Juncus sp.*	35	Υ	FACW	be present, unless disturbed or problematic.
Cyperus sp.**	15	Y	FACW	Definitions of Four Vegetation Strata
Hydrocotyle sibthorpioides	15	Y	FACW	Deminions of Four Vegetation official
S	10	N	FACIL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4			1400	more in diameter at breast height (DBH), regardless of
5				neight.
6				Sapling/Shrub – Woody plants, excluding vines, less
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8.				Harb All borbaccous (non woody) plants, regardless
9				of size, and woody plants less than 3.28 ft tall.
10				······
10				Woody vine – All woody vines greater than 3.28 ft in
11				height.
12				
	75	= Total Cov	/er	
50% of total cover: <u>37.5</u>	20% of	total cover	15	
Woody Vine Stratum (Plot size:)				
1				
··				
2			<u> </u>	
3	- <u> </u>			
4				
5	<u> </u>			Hydrophytic
		= Total Cov	'er	Vegetation
50% of total cover	20% of	total cover	:	Present? Yes <u>×</u> No
Bemarka: (If observed, list morphological adaptations bal				
*Of the 23 species of Juncus listed for Arkaneas in the At	Jw). Iantic and G	Sulf Coasta	Plain Reg	ion 87% are FAC or wetter with the majority being
FACW.	antic anu C	iun ovasla	i iaiii neg	ion, or 76 are 1 AO of weller with the majority being
**Of the 30 species of Cyperus listed for Arkansas in the . FACW.	Atlantic and	Gulf Coas	tal Plain Re	egion, 73% are FAC or wetter with the majority being

Site meets hydrophytic vegetation criteria.

(inches)	Matrix		Redo	x ⊢eatur	es 1					
0.0"	Color (moist)	%	Color (moist)	%	<u>Type'</u>		Texture		Remarks	
0-3	10YR 4/2	95	10YR 5/8	5			Silt Loam			
3-6"	10YR 4/3	70	10YR 4/6	30	<u> </u>	<u>M</u>	Silt Loam			
6-12"	10YR 5/2	95	10YR 5/8	5	С	М	Silt Loam			
					_					
1						·	2			
Type: C=C	oncentration, D=D	epletion, RN	I=Reduced Matrix, Mi	S=Maske	ed Sand G	rains.	Location:	PL=Pore L	Lining, M=Matri matic Hydric	X. Soile ³ :
					(S8) (DD C T	$\square 1 \text{ cm}$			50115 .
	(AT) ninedon (A2)		Thin Dark Su	Inface (S	ace (So) (3) (I RR S	LKK 5, 1, T U)	$\square 2 \text{ cm}$	/luck (A9) ((LRR S)	
Black Hi	istic (A3)			v Minera	(F1) (LR	R O)		ed Vertic (F	F18) (outside l	MLRA 150A.B)
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)	,	D Piedm	ont Floodpl	lain Soils (F19)	(LRR P, S, T)
Stratified	d Layers (A5)		Depleted Ma	ıtrix (F3)	. ,			alous Brigh	t Loamy Soils (F20)
Organic	Bodies (A6) (LRR	P, T, U)	Redox Dark	Surface (F6)		(MLI	RA 153B)		
5 cm Mu	ucky Mineral (A7) (LRR P, T, U) 🔲 Depleted Da	rk Surfac	e (F7)			arent Mate	rial (TF2)	
Muck Pr	esence (A8) (LRR	U)	Redox Depre	essions (-8)		L Very S	Shallow Dar	k Surface (TF1	2)
	uck (A9) (LRR P, T	·)	Marl (F10) (L	RR U)			U Other	(Explain in	Remarks)	
	d Below Dark Sun	ace (ATT)) (IVILKA 1 200 (E12)	151) (I DD O D	T) ³ lodic	ators of by	drophytic ycao	tation and
	rairie Redox (A12)	(MI RA 150		ace (F13)		(LKK 0, P F 11)	, r) mult	land hydro	loav must be n	resent
Sandy M	/uckv Mineral (S1)	(LRR O. S)	Delta Ochric	(F17) (M	LRA 151)	, 0,	unl	ess disturb	ed or problema	tic.
Sandy C	Gleyed Matrix (S4)	(,	Reduced Ve	rtic (F18)	(MLRA 1	50A, 150B)			
Sandy F	Redox (S5)		Piedmont Flo	odplain	、 Soils (F19) (MLRA 1	, 49A)			
Stripped	l Matrix (S6)		Anomalous E	Bright Loa	amy Soils	(F20) (MLF	RA 149A, 153C	, 153D)		
Dark Su	rface (S7) (LRR P	, S, T, U)								
Restrictive I	Layer (if observe	d):								
									×	
Type:							Uvdria Sail	Present?	Voc ^	No
Type: Depth (inc	ches):						Hyunc Soli	Tresent.	163	
Type: Depth (in Remarks: M	^{ches):}						Hydric Soli		165	
Type: Depth (in Remarks: M	^{ches):} lixed soils.						Hyune Soli		163	
Type: Depth (ind Remarks: W	^{ches):} lixed soils.	dric soil	critoria				Hyunc Son		165	
Type: Depth (inu Remarks: M	^{ches):} lixed soils. ite meets hy	dric soil	criteria.							
Type: Depth (ind Remarks: M	^{ches):} lixed soils. ite meets hy	dric soil	criteria.							
Type: Depth (ind Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.							
Type: Depth (ind Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (ind Remarks: M	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (ind Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			
Type: Depth (in Remarks: M S	^{ches):} lixed soils. ite meets hy	dric soil	criteria.				Hydric Soli			

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

Project/Site: LRPA VORTAC	City/County: Little Rock/ Pulaski		Sampling Date: 11/19/2019		
Applicant/Owner: LRPA	S	tate: AR s	Sampling Point: DP 10		
Investigator(s): Colby Marshall	Section, Township, Range: <u>S14</u>	, T2N, R11W			
Landform (hillslope, terrace, etc.): _agricultural field L	.ocal relief (concave, convex, n	one): <u>none</u>	Slope (%): _0		
Subregion (LRR or MLRA): LRR N Lat: 34.8105	508° Long:92	2.152802°	Datum: WGS 84		
Soil Map Unit Name: Rilla silt loam, 0 to 1 percent slopes	-	NWI classificat	ion: <u>none</u>		
Are climatic / hydrologic conditions on the site typical for this time of yea	ır? Yes ^X No (li	no, explain in Rei	marks.)		
Are Vegetation X. Soil . or Hydrology significantly of	listurbed? Are "Normal (Circumstances" pre	esent? Yes X No		
Are Vegetation . Soil . or Hydrology naturally prot	plematic? (If needed, ex	plain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site map showing	sampling point location	is, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes NoX Hydric Soil Present? Yes NoX Wetland Hydrology Present? Yes NoX Remarks: Yes NoX	Is the Sampled Area within a Wetland?	Yes	No		
Vegetation mechanically cut. Site does not meet wetland criteria.					
HYDROLOGY					
Wetland Hydrology Indicators: Secondary Indicators (minimum of two Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Field Observations: Surface Water Present? Yes Surface Water Present? Yes No Depth (inches): >12" Water Table Present? Yes No Depth (inches): >12" Water Table Present? Yes No X Depth (inches): >12" Water Table Present? Yes No X					
Remarks: Site does not meet wetland hydrology criteria.					

Sampling Point: DP 10

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species	
1.				That Are OBL, FACW, or FAC: 1 (A)	
2					
2				Total Number of Dominant	
3				Species Across All Strata: <u>3</u> (B)	
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 33.33 (A/I	3)
6					
7.				Prevalence Index worksheet:	
8				Total % Cover of: Multiply by:	
0				OBL species x 1 =	
		= Total Co	ver	FACW species x 2 =	
50% of total cover:	20% of	total cover	:	EAC species x 3 =	
Sapling/Shrub Stratum (Plot size:)					
1				FACU species x 4 =	
2.				UPL species x 5 =	
3				Column Totals: (A) (B)
A					
4				Prevalence Index = B/A =	
5				Hydrophytic Vegetation Indicators:	_
6				1 - Rapid Test for Hydrophytic Vegetation	
7				2 - Dominance Test is >50%	
8.				\square 3. Browsloppo Index is <3.0 ¹	
		= Total Co	/er		
E0% of total acuer	200/ at	Fotal aqua		Problematic Hydrophytic Vegetation (Explain)	
50% of total cover	20% 0	total cover	·		
Herb Stratum (Plot size: 30)				¹ Indicators of hydric soil and wetland hydrology must	
1. Cynodon dactylon	60	Y	FACU	be present, unless disturbed or problematic.	
2. Andropogon virginicus	20	Y	FACU	Definitions of Four Vegetation Strata:	
3. Setaria pumila	20	Υ	FAC		
4	_			I ree – Woody plants, excluding vines, 3 in. (7.6 cm) (more in diameter at breast height (DBH) regardless (or of
5				height.	/
5				5	
6				Sapling/Shrub – Woody plants, excluding vines, less	;
7				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
8				Herb – All herbaceous (non-woody) plants, regardles	s
9				of size, and woody plants less than 3.28 ft tall.	-
10					
11				Woody vine – All woody vines greater than 3.28 ft in	
10				neight.	
12					
	100	= Total Co	/er		
50% of total cover: <u>⁵⁰</u>	20% of	total cover	. 20		
Woody Vine Stratum (Plot size:)					
1.					
2					
2					
3					
4		·			
5				Hydrophytic	
		= Total Co	/er	Vegetation	
50% of total cover:	20% of	total cover	:	Present? Yes No ^	
Pomarke: (If observed, liet morphological adaptations ha	0.44)				
Site meets hydrophytic vegetation crite	ria.				

SO	L
~~	_

(inches) Color (moles) % Color (moles) % Type Loc Texture Remarks 0-12 SYR 5.6 4	Depth	Matrix		Redo	x Features	S		_		_	
0-12 10/14 to 3 34	(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remarks	3
0-12* 5YR 5/6 4 0-12* 10YR 4/1 3 "Type: C=Concentration; D=Degletion; RM=Reduced Matrix; MS=Masked Sand Grains; *Location; PL=Pore Lining; M=Matrix; "Type: C=Concentration; D=Degletion; RM=Reduced Matrix; MS=Masked Sand Grains; *Location; PL=Pore Lining; M=Matrix; "Type: C=Concentration; D=Degletion; RM=Reduced Matrix; MS=Masked Sand Grains; *Location; PL=Pore Lining; M=Matrix; "Histosol (A1) Image: Degletion RM=Reduced Matrix; MS=Masked Sand Grains; *Location; PL=Pore Lining; M=Matrix; Histosol (A1) Degletion RM=Reduced Matrix; MS=Masked Sand Grains; *Location; PL=Pore Lining; M=Matrix; Histosol (A1) Degletion RM=Reduced Matrix; Tim Carls; Matrix; Tim Mack (A9) (LRR 9; Straffield Lays; Sold (A3) Loamy Cleped Matrix; Loamy Cleped Matrix; Tim Mack (A9) (LRR 9; Tim Mack (A9) (LR 19) (LR 19)	0-12"	10YR 5/3	93			. <u> </u>		Silty Clay Loam			
6-12" 10YR 4/1 3 "Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. "Location: PL=Pore Lining, M=Matrix, "Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.] Indicators for Problematic Hydric Soils': Histic Epledon (A2) Dolyakla Below Surface (S8) (LRR S, T, U) Com Muck (A10) (LRR S) Histic Epledon (A2) Dony Gleyed Matrix (F2) Com Muck (A10) (LRR S) Organic Bodies (A6) (LRR P, T, U) Doepleted Matrix (F2) Com Muck (A10) (LRR S) Organic Bodies (A6) (LRR P, T, U) Doepleted Dark Surface (F7) Red Depressions (F8) I cm Muck (A9) (LRR P, T, U) Doepleted Dark Surface (F1) (MLRA 150) Dore (Explain in Remarks) D cast Praine Redox (A11) Doepleted Ochric (F11) (MLRA 150) Direct (Explain in Remarks) D cast Praine Redox (A16) (MLRA 0, S) Beduced Veric (F11) (MLRA 150, 150) Indicators of hydrophytic vegetation an welland hydrology must be present, unless disturbed or problematic. Sandy Mckok (S5) Beduced Veric (F13) (MLRA 150A, 150B) Indicators of hydrophytic vegetation an welland hydrology must be present, unless disturbed or problematic. Sandy Rokok (S5) Reduced Veric (F13) (MLRA 150A, 150B) Indicators (S7) (MLRA 150A, 150B) Dark Surface (S7) (LRR P, S, T, U) Dark Surface (S7) (MLRA 150A, 150B)	0-12"	5YR 5/6	4								
Type: C=Concentration, D=Depletion, RM=Reduced Mattix: MS=Masked Sand Grains, indicators for Problematic Hydric Soils': Histosol (A1) Imbox Carbon Sufface (SB) (LRR S, T, U) Imbox Carbon Sufface (SB) (LRR S, T, U) Black Histic Epipedon (A2) Imbox Sufface (SB) (LRR S, T, U) Imbox Carbon Sufface (SB) (LRR S, T, U) Stratified Layers (A5) Imbox Sufface (SB) (LRR P, T, U) Imbox Sufface (F1) Imbox Sufface (F2) Stratified Layers (A5) Imbox Depleted Matrix (F2) Imbox Sufface (F7) Imbox Sufface (F7) Stratified Layers (A5) Imbox Depleted Dark Sufface (F7) Red Parent Materia (TT2) Imbox Sufface (F1) Depleted Matrix (F3) Imbox Dark Sufface (F1) Imbox Sufface (F1) Imbox Sufface (F1) Imbox Sufface (F1) Depleted Dark Sufface (A1) Imbox Sufface (F1) Imbox Sufface (F1) Imbox Sufface (F1) Imbox Sufface (F1) Depleted Dark Sufface (A12) Imbox Sufface (F1)	0-12"	10YR 4/1	3								
Type: C-Concentration, D-Depletion, RM-Reduced Matrix, MS-Masked Sand Grains. *Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils? Histos (A) Deplayatub Belew Surface (S9) (LRR S, T, U) 2 cm Muck (A10) (LRR S) Histos (A3) Deamy Gleyed Matrix (F2) Deplated Matrix (F3) Organic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) Pendoant Flootplain Sois (F10) (LRR U) Organic Bodies (A6) (LRR P, T, U) Depleted Dark Surface (F7) Pendoant Flootplain Sois (F10) (LRR U) Depleted Dark Surface (F10) (LRR U) Depleted Dark Surface (F10) (LRR U) Depleted Dark Surface (F10) (LRR U) Depleted Dark Surface (F10) (LRR U) Depleted Dark Surface (F10) (LRR U) Depleted Dark Surface (F12) (LRR O, P, T) Indicator Surface (F12) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRR O, S) Depleted Oark Surface (F11) (MLRA 150) Dumbric Surface (F12) (LRR A, P, T, U) unless disturbed or problematic. Sandy Redox (S5) Reduced Vertic (F13) (LRR A, 150A, 150B) Indicator (S7) (LRR O, S), Sing Mucky Mineral (S7) (LRR O, S), Delta Ortine (F11) (MLRA 150A, 150B) Indicator Surface (S3) (LRR A, S13A), Anomalous Bright Learny Soils (F20) (MLRA 149A, 153C, 153D) Sandy Redox (S5) Reduced Vertic (F13) (MLRA 150A, 150B), Delta Soil (F6) (ML											
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. *Location: PL=Pore Lining, M=Matrix. Mydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls?: Histic Epipedon (A2) Dony Mucky Minera (F1) (LRR S, T, U) Peduced Vertic (F1s) (LRR S) Black Histic (A3) Doarny Mucky Minera (F1) (LRR S) Peduced Vertic (F1s) (LRR S) Stratified Layers (A5) Depleted Matrix (F2) Dedomatine Solls (F1s) (LRR P, S) Sorn Mucky Mineral (A7) (LRR P, T, U) Redox Dark Surface (F6) Depleted Matrix (F3) Sorn Mucky Mineral (A7) (LRR P, T, U) Redox Daryessions (F8) Depleted Dark Surface (F1) Depleted Below Dark Surface (A1) Depleted Ochric (F11) (MLRA 151) Indicators of hydrophytic vagetation ar unless disturbed or problematic. Sorn Mucky Mineral (A7) (LRR P, T, U) Depleted Ochric (F11) (MLRA 150) Very Shallow Dark Surface (F12) Depleted Below Dark Surface (A1) Depleted Ochric (F11) (MLRA 150) Very Shallow Dark Surface (F12) Sort Mucky Mineral (S1) (LRR P, S) Depleted Ochric (F11) (MLRA 150, A) Very Shallow Dark Surface (F12) Sort Marky Redox (S5) Delta Ochric (F13) (MLRA 150, A) Very Shallow Dark Surface (F12) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Leamy Solis (F20) (MLRA 149A)											
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains, ² Location: PL=Pore Lining, M=Matrix, Histosol (A1) Polyvalus Below Surface (S9) (LRR S, T, U) I cm Muck (A10 (LRR C)) Histosol (A1) Polyvalus Below Surface (S9) (LRR S, T, U) I cm Muck (A10 (LRR C)) Black Histic (A3) Learny Gleved Matrix (F3) Reduced Vertic (F18) (RUR O) Corganic Bodie (A6) (LRR P, T, U) Depleted Matrix (F3) Reduced Vertic (F18) (Pluc P) (LRR P) Corganic Bodie (A6) (LRR P, T, U) Depleted Dark Surface (F7) Muck Pisternet Meterial (TF2) Muck Pisternet (A9) (LRR P, T, U) Depleted Dark Surface (F7) Muck A105 Surface (TF12) Muck Pisternet (A8) (LRR P, T, U) Depleted Ochric (F11) (ILRA 151) Other (Explain in Remarks) Depleted Borw Dark Surface (A11) Depleted Corhic (F11) (ILRA 151) Other (Explain in Remarks) Sardy Mucky Mineral (S1) (LRR P, T, U) Depleted Corhic (F11) (ILRA 151) unless disturbed or problematic. Sardy Gleved Matrix (S4) Depleted Vertic (F18) (ILRA 150, 1500) model Additic (S12) unless disturbed or problematic. Sardy Relever (If S0) Probleme Matrix (S4) Probleme Matrix (S10) unless disturbed or problematic. Sardy Relever (If No P, S, T, U) Predomont Floodapian Solis (F10) (MLRA 149A)						<u> </u>					
Type: C-Concentration, D=Depletion, RM-Reduced Matrix, MS-Masked Sand Grains, *Location: PLocation: PLocation											
Type: C-Concentration. D-Depletion. RM-Reduced Matrix, MS-Masked Sand Grains. * Location: "LeProre Lining, M-Matrix. Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) I cm Muck (A0) (LRR O) Black Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) Reduced Vertic (F16) (Outside MLRA 1: Black Histosol (A4) Comm Muck (Mineral (F1) (LRR O) Reduced Vertic (F16) (Outside MLRA 1: Black Histos (A3) Comm Muck (Mineral (F1) (LRR O) Reduced Vertic (F16) (Outside MLRA 1: Stratified Layers (A5) Peleted Matrix (F2) Redox Dark Surface (F6) Stratified Layers (A5) Depleted Dark Surface (F17) Redox Surface (F17) Muck Presence (A8) (LRR P, T, U) Depleted Dark Surface (F17) Redox Surface (F12) Depleted Oark Surface (A12) Depleted Oark Surface (F13) (LRR 0, 5) Surface (A12) Depleted Oark Surface (F13) (LRR 0, 5) Depleted Oark Surface (F13) (LRR 151) outhous be present, unbard surface (F12) (LRR 0, 5) Sandy Redox (S5) Depleted Oark Surface (F13) (LRR 151) unless disturbed or problematic, unless disturbed or pr											
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRs, unless otherwise noted.) Histos (A1) Polyvalue Below Surface (S8) (LRR S, T, U) I orn Muck (A10) (LRR S) Black Histic (A3) Loarny (Hucky Mineral (F1) (LRR O) Pedmont Floodplain Soils (F19) (LRR P) Stratified Layers (A5) Depleted Matrix (F3) Pedmont Floodplain Soils (F19) (LRR P) Organic Bodies (A6) (LRR P, T, U) Depleted Dark Surface (F7) Redxo Zark Surface (F7) Muck (A9) (LRR P, T, U) Depleted Dark Surface (F1) Redxo Zark Surface (F12) I orn Muck (A9) (LRR P, T, U) Depleted Dark Surface (F12) Red Parent Material (TF2) U orn Muck (A9) (LRR P, T, U) Depleted Chric (F11) (MLRA 151) Indicators of hydrophytic vegatation ar wetland hydrology must be present. unless disturbed or problematic. Sandy Gleeyd Matrix (S4) Reduced Vertic (F13) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) Indicators of hydrophytic vegatation ar wetland hydrology must be present. unless disturbed or problematic. Sandy Cleeyd Matrix (S4) Reduced Vertic (F13) (MLRA 150A) Indicators (F3) (LRR P, T, U) Dark Surface (S7) (LRR P, S, T, U) Reduced Vertic (F13) (MLRA 150A) Indicators of hydrophytic vegatation ar wetland hydrology must be present. unless disturbed or problematic. Sandy Cleeyd Matrix (S4) P	¹ Type: C=C	Concentration, D=De	pletion, RM=R	educed Matrix, M	S=Masked	Sand Gra	ains.	² Location: P	L=Pore L	ining, M=Ma	itrix.
Histic Epipedon (A2) Polyvalue Below Surface (S8) (LRR S, T, U) Com Muck (A9) (LRR O) Histic Epipedon (A2) Loamy Mucky Mineral (F1) (LRR O) Reduced Vertic (F18) (outside MLRA 1: Polytogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F2) Pelotevalue Matrix (F2) Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 1538) S cm Muck (A10, (LRR P, T, U) Redox Depressions (F8) Pelotevalue Matrix (F10) Depleted Matrix (F2) Very Shallow Dark Surface (F17) Very Shallow Dark Surface (F17) Depleted Below Dark Surface (F10) (LRR 0) Depleted Matrix (F20) Very Shallow Dark Surface (F17) Depleted Below Dark Surface (A11) Depleted Chric (F11) (MLRA 151) Very Shallow Dark Surface (F17) Depleted Below Dark Surface (A12) Umbric Surface (F13) (LRR 0, P, T) *Indicators of hydrophytic vegetation ar wetland hydrology must be present, unless disturbed or problematic. Sandy Redox (S5) Deleta Chric (F17) (MLRA 150, 1500) Wetland hydrology must be present? unless disturbed or problematic. Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Depleted Chric (F17) (MLRA 150, 1500) Depth (inches):	Hydric Soil	Indicators: (Appli	cable to all LR	Rs, unless othe	rwise note	ed.)		Indicators fo	or Proble	matic Hydri	c Soils°:
Image: Initial Explored on (A2) Black Hists (A3) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Black Hists (A3) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Black Hists (A3) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Image: Initial Explored on (A2) Crogaric Bodies (A6) (LRR P, T, U) Depleted Dark Surface (F1) Red varent Material (TF2) Image: Initial Explored on (A2) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image: Initial Explored on (A12) Image:	Histoso	bl (A1)		Polyvalue Be	low Surfa	ce (S8) (L	RR S, T, I	U) 📙 1 cm Mu	ck (A9) (I	RR O)	
Image: High (A) Image: Amount of the amo		Epipedon (A2)		Thin Dark Su	Irface (S9)) (LRR S,	T, U)		ck (A10)	(LRR S)	
Important		listic (A3)		Loamy Muck	y Mineral	(⊢1) (LRR ⊑0)	20)		I Vertic (F	18) (outside	e MLRA 150A,
definited Layers (AS) organic Bodies (A6) (LRR P, T, U) Gom Mucky Mineral (A7) (LRR P, T, U) dedox Dark Surface (F6) dedox Dark Surface (F7) dedox Dark Surface (F12) dedox Dark Surface (F12) dedox Dark Surface (F12) dedox Dark Surface (F13) dedox Dark Surface (F12) dedox Dark Surface (F13) dedox Surface (F13) dedox Surface (F13) dedox (F10) (LRR 0, P, T, U) depleted Ochric (F11) (MLRA 151) dots Surface (F13) (LRR 0, P, T, U) deta Veric (F18) (MLRA 150, 150B) deta Veric (F18) (MLRA 149A) dard Surface (S7) (LRR P, S, T, U) deta Veric (F18) (MLRA 150, 150B) deta Veric (F18) (MLRA 150B) deta Veric (F18) (F19) (MLRA 150B) deta Veri		en Sulfide (A4)		Loamy Gleye	ed Matrix (F2)			it Flooapl	ain Soils (F1	9) (LRR P, S,
Comparison Comparison <td></td> <td>D Rodios (A5)</td> <td></td> <td>Depleted Ma Depleted Ma Depleted Ma</td> <td>llix (F3) Surface (F</td> <td>(6)</td> <td></td> <td></td> <td>152P)</td> <td>Loamy Solis</td> <td>S (F2U)</td>		D Rodios (A5)		Depleted Ma Depleted Ma Depleted Ma	llix (F3) Surface (F	(6)			152P)	Loamy Solis	S (F2U)
Image: Strict Strict Strict Image: Strict Strict Image: Strict Strict Image: Strict Strict Image: Strict Image: Strict Image: Strin Image: Strict Image: Strict		ucky Mineral (A7) (LKK I	P, I, U) PP P T II)		Sunace (F rk Surface	(E7)			ant Mater	ial (TE2)	
In teach rescription Integer rescription In teach rescription <td< td=""><td></td><td></td><td>IN IN I</td><td></td><td>esions (F</td><td>8)</td><td></td><td></td><td>allow Darl</td><td>k Surface (Tl</td><td>F12)</td></td<>			IN I		esions (F	8)			allow Darl	k Surface (Tl	F12)
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) Thick Dark Surface (A12) Denter Reduce (A13) Denter Reduce (A16) (MLRA 150A) Denter Reduce (A16) (MLRA 150A) Denter Reduce (F13) (LRR 0, P, T, U) Sandy Mucky Mineral (S1) (LRR 0, S) Sandy Gleyed Matrix (S4) Reduced Vertic (F13) (MLRA 150A, 150B) Sandy Reduce (S5) Sandy Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type:		luck (A9) (I RR P. T)	0)	Marl (F10) (I	RRU)	0)		Other (F	xolain in l	Remarks)	12)
Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) *Indicators of hydrophytic vegetation ar wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F13) (LRR P, T, U) unless disturbed or problematic. Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) unless disturbed or problematic. Bardy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type:		ed Below Dark Surfa	ce (A11)	Depleted Oc	hric (F11)	(MLRA 1	51)		xpiairi iri	(onlanto)	
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present. Sandy Mucky Mineral (S1) (LRR O, S) Reduced Vertic (F13) (MLRA 151) unless disturbed or problematic. Sandy Gleyed Matrix (S4) Reduced Vertic (F13) (MLRA 150A, 150B) Piedmont Floodplain Solis (F19) (MLRA 149A) Anomalous Bright Loamy Solis (F20) (MLRA 149A, 153C, 153D) Anomalous Bright Loamy Solis (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (inches): Hydric Soil Present? Yes No Remarks: Site does not meet hydric soil criteria.	Thick D	ark Surface (A12)		Iron-Mangan	ese Mass	es (F12) (LRR O. P.	T) ³ Indicat	ors of hyd	drophytic ved	petation and
Sandy Mucky Mineral (S1) (LRR 0, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic. Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Present? Type:	Coast F	Prairie Redox (A16) ((MLRA 150A)	Umbric Surfa	ace (F13) (LRR P, T	, U) É	wetla	nd hydrol	ogy must be	present,
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Sandy I	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric	(F17) (ML	.RA 151)		unles	s disturbe	ed or problen	natic
Sandy Redox (S5) ☐ Piedmont Floodplain Soils (F19) (MLRA 149A) Biripped Matrix (S6) ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) Dark Surface (S7) (LRR P, S, T, U)	Sandy	Gleyed Matrix (S4)		Reduced Ver	rtic (F18) (MLRA 15	0A, 150B))			
☐ Stripped Matrix (S6) ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) ☐ Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type:	Sandy	Redox (S5)		Piedmont Flo	odplain S	oils (F19)	(MLRA 14	49A)			
Loark Surface (S7) (LRR P, S, T, U) Restrictive Layer (If observed): Type: Depth (inches): Hydric Soil Present? Yes No Remarks: Site does not meet hydric soil criteria.	Strippe	d Matrix (S6)		Anomalous E	Bright Loar	ny Soils (I	F20) (MLF	RA 149A, 153C, 1	53D)		
Restrictive Layer (if observed): Type:	Dark Su	urface (S7) (LRR P,	S, T, U)					-1			
Type:	Restrictive	Layer (if observed)):								
Depth (inches):	Туре:			_							V
Remarks: Site does not meet hydric soil criteria.	Depth (ir	nches):		_				Hydric Soil P	resent?	Yes	No^_
	Remarks: c	Site does not r	neet hvdri	c soil criteri	a.						
			nootnyan		a .						

Project/Site: LRPA VORTAC	City/County: Little Ro	ock/ Pulaski	Sampling Date: 11/19/2019					
Applicant/Owner: LRPA		State ^{, AR}	Sampling Point. DP 11					
Investigator(s). Colby Marshall	Section Township F	Section Township Pages: S12, T2N, R11W						
Landform (hillolono, torraco, etc.), agricultural field		concave	Slope (9/); 0					
	Local relief (concave	-92 152618°	Slope (%) WGS 84					
Subregion (LRR or MLRA): Lat: Lat: Lat: Lat:	hed	Long:	Datum:					
Soil Map Unit Name:	v	NWI classific	cation:					
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes <u>^</u> No	(If no, explain in F	Remarks.)					
Are Vegetation, Soil, or Hydrology signifi	cantly disturbed? Ar	e "Normal Circumstances"	present? Yes X No					
Are Vegetation, Soil, or Hydrology natura	ally problematic? (If	needed, explain any answe	ers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map sho	wing sampling point	locations, transects	, important features, etc.					
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No	Is the Sample within a Wet	ed Area land? Yes <u>X</u>	No					
Remarks:	ampled by acttle							
vegetation mechanically cut and grazed/tr	ampled by calle.							
Site meets wetland criteria.								
HYDROLOGY								
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that a	apply)	Surface Soil	Cracks (B6)					
Surface Water (A1)	na (B13)	⊻ Sparsely Ve	getated Concave Surface (B8)					
High Water Table (A2)	s (B15) (LRR U)	Drainage Pa	tterns (B10)					
Saturation (A3)	Inde Odor (C1)		Ines (B16)					
	Peduced Iron (C4)	Dis (C3) Dry-Season	water Table $(C2)$					
Drift Deposits (B3)	Reduction in Tilled Soils (Cf	$\overline{\Box}$ Crayinin Dur $\overline{\Box}$ Saturation V	isible on Aerial Imagery (C9)					
Algal Mat or Crust (B4)	urface (C7)	Geomorphic	Position (D2)					
Iron Deposits (B5)	in in Remarks)	Shallow Aqu	itard (D3)					
Inundation Visible on Aerial Imagery (B7)	,	FAC-Neutral	Test (D5)					
Water-Stained Leaves (B9)		🔲 Sphagnum r	noss (D8) (LRR T, U)					
Field Observations:								
Surface Water Present? Yes X No Depth (i	nches):3"							
Water Table Present? Yes <u>X</u> No <u>Depth</u> (i	nches):0"							
Saturation Present? Yes X No Depth (i	nches):0" 🛛 🗸	Wetland Hydrology Preser	nt? Yes <u>X</u> No					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aeria	photos, previous inspectio	ns), if available:						
	· • · · · · · · · · · · · · · · · · · ·							
Remarks:								
Site meets wetland hydrology criteria.								

Sampling Point: DP 11

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species That Are ORL EACW or EAC: 2 (A)
1				
3				Total Number of Dominant
<u> </u>	·			(b)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
				Prevalence Index worksheet:
/				Total % Cover of: Multiply by:
8				OBL species x 1 =
		= Total Cov	er	FACW species x 2 =
50% of total cover:	20% of	total cover		EAC species $x_3 =$
Sapling/Shrub Stratum (Plot size:)				
1				
2				
3				(A) (B)
4				Prevalence Index = B/A =
5				Hvdrophytic Vegetation Indicators:
6	<u> </u>			1 - Rapid Test for Hydrophytic Vegetation
7				\checkmark 2 - Dominance Test is >50%
8.				\square 3 Prevalence Index is <3 0 ¹
		= Total Cov	er	\square Broblematic Hydrophytic Vegetation ¹ (Evaluation)
50% of total cover:	20% of	total cover		
Herb Stratum (Plot size: ^{30'})				
Persicaria sp.*	60	Y	FACW	be present, unless disturbed or problematic.
2, Cyperus sp.**	15	Y	FACW	Definitions of Four Vegetation Strata:
3.	·			
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5				height.
6	·			
7				than 3 in DBH and greater than 3 28 ft (1 m) tall
/	·			
8	·			Herb – All herbaceous (non-woody) plants, regardless
9				or size, and woody plants less than 3.26 it tall.
10				Woody vine – All woody vines greater than 3.28 ft in
11	·			height.
12				
	/5	= Total Cov	er	
50% of total cover: <u>37.5</u>	20% of	total cover	15	
Woody Vine Stratum (Plot size:)				
1				
2				
3	<u> </u>			
4				
5				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
Remarks: (If observed, list morphological adaptations belo	ow).			1
*Of the 14 species of Persicaria listed for Arkansas in the	Atlantic an	d Gulf Coas	stal Plain R	Region, 100% are FAC or wetter with the majority being
OBL.				
**Of the 30 species of Cyperus listed for Arkansas in the	Atlantic and	Gulf Coas	tal Plain Re	egion, 73% are FAC or wetter with the maiority being
FACW.				

Site meets hydrophytic vegetation criteria.

SOIL

Profile Desc	ription: (Describe	to the depth	needed to docum	nent the	indicator	or confirm	n the absence	of indicators.))	
Depth	Matrix		Redox	<u>k Feature</u>	es1	. 2				
(inches)	Color (moist)		Color (moist)		lype				Remarks	<u> </u>
0-10	10 fR 5/1	9/ 1	UTR 5/8	3	<u> </u>		Sill Loam			
							. <u></u>			
1							2			
Type: C=Co	oncentration, D=Dep	bletion, RM=F	Reduced Matrix, MS	S=Maske	d Sand Gr	ains.	Location:	PL=Pore Linin	ig, M=Matrix tic Hydric S	oile ³ '
				wise not	.eu.)	DD S T I				0115 .
	pipedon (A2)		Thin Dark Su	rface (S9)) (LRR S.	T. U)		luck (A9) (LR	(C) (R S)	
Black Hi	stic (A3)		Loamy Mucky	/ Mineral	(F1) (LRF	R O)	Reduc	ed Vertic (F18)) (outside M	LRA 150A,B)
Hydroge	n Sulfide (A4)		Loamy Gleye	d Matrix	(F2)		Diedmo	ont Floodplain	Soils (F19) ((LRR P, S, T)
Stratified	d Layers (A5)		Depleted Mat	rix (F3)				alous Bright Loa	amy Soils (F	20)
Organic	Bodies (A6) (LRR F	P, T, U)	Redox Dark S	Surface (I	F6)			RA 153B)		
	icky Mineral (A7) (L	RR P, T, U)		k Surface	e (⊢/) -o)			arent Material ((TF2) ⊎rfaaa (TF12	
)	Marl (F10) (L	SSIONS (F	-0)			Fixed and the second se	unace (TFTZ narks)	-)
	d Below Dark Surfac	e (A11)	Depleted Och	nric (F11)	(MLRA 1	51)			nantoj	
Thick Da	ark Surface (A12)	()	Iron-Mangane	ese Mass	ses (F12) (LRR O, P,	T) ³ Indic	ators of hydrop	ohytic vegeta	ation and
Coast Pi	rairie Redox (A16) (MLRA 150A)	Umbric Surfa	ce (F13)	(LRR P, T	, U)	wet	land hydrology	must be pre	esent,
Sandy M	lucky Mineral (S1) (LRR O, S)	Delta Ochric	(F17) (MI	LRA 151)		unle	ess disturbed o	or problemati	c.
Sandy G	Bleyed Matrix (S4)			tic (F18)	(MLRA 15	0A, 150B)				
Sandy R	Matrix (S6)			right Log	5011S (F19) my Soile (19A) 24 1/94 1530	153D)		
Dark Su	rface (S7) (LRR P. \$	S. T. U)		ngni Lua	inty Solis (A 143A, 1330	, 1550)		
Restrictive I	_ayer (if observed)	:								
Туре:										
Depth (ind	ches):						Hydric Soil	Present? Y	′esX	No
Remarks: c	ito mooto bud	ria apil ar	ritoria							
	ite meets nyu		ilena.							
1										

Project/Site: LRPA VORRAC	City/County: Little Rock/ Pulaski Sampling Date: 11/19/2019
Applicant/Owner: LRPA	State: AR Sampling Point: DP 12
Investigator(s): Colby Marshall	Section, Township, Range: S14, T2N, R11W
Landform (hillslope, terrace, etc.); agricultural field	Local relief (concave, convex, none); ^{concave} Slope (%); ⁰
Subregion (LRR or MLRA): LRR N Lat: 34.80	3807° Long: -92.148709° Datum: WGS 84
Soil Man Unit Name. Perry clay, 0 to 1 percent slopes, rarely flooded	NWI classification: none
Are elimetic / hydrologic conditions on the site typical for this time of y	No. X No. (If no. ovnlain in Remarka.)
Are climate / hydrologic conditions of the site typical for this time of ye	sale res (in no, explain in Remarks.)
Are vegetation, Soli, or Hydrology significantly	Volsturbed? Are Normal Circumstances present? Yes where No
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	y sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No	Is the Sampled Area within a Wetland? Yes $\frac{X}{2}$ No
Remarks:	aled by cattle
vegetation mechanically cut and grazed/traing	Jed by calle.
Site meets wetland criteria.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
│ 🚰 Surface Water (A1) 🛛 📙 Aquatic Fauna (B1	3) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	5) (LRR U)
Saturation (A3) Hydrogen Sulfide (Odor (C1) Moss Trim Lines (B16)
U Sodiment Deposite (P2)	and Iron (C4)
	ced Iron (C4) Crayiisn Burrows (C8)
Algel Mat or Crust (B4)	(C7) Geometric Position (D2)
\square Iron Denosits (B5) \square Other (Explain in E	Remarks)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes X No Depth (inches	3):1"
Water Table Present? Yes <u>X</u> No <u>Depth</u> (inches	3):>12"
Saturation Present? Yes X No Depth (inches	s):0" Wetland Hydrology Present? Yes No
(includes capillary fringe)	os previous inspections) if available:
Describe Recorded Data (stream gauge, monitoring weil, achar prior	
Remarks:	
Clayey soil acting as aquitard at 8".	
Site meets wetland hydrology criteria.	

Sampling Point: DP 12

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Tatal Namban of Dana's and
3.				Species Across All Strata: ² (B)
4.				
5.				Percent of Dominant Species
6				That Are OBL, FACW, OF FAC: (A/B)
7				Prevalence Index worksheet:
/·	·			Total % Cover of:Multiply by:
0				OBL species x 1 =
		= Total Cov	er	FACW species x 2 =
50% of total cover:	20% of	total cover:		FAC species x 3 =
Sapling/Shrub Stratum (Plot size:)				FACU species x 4 =
1				
2				
3				Column Totals: (A) (B)
4				Prevalence Index = B/A =
5				Hydrophytic Vegetation Indicators:
6.				1 Papid Test for Hydrophytic Vegetation
7				
8				
0		– Total Cav		\square 3 - Prevalence Index is $\leq 3.0^{\circ}$
	000/		er	Problematic Hydrophytic Vegetation' (Explain)
50% of total cover:	20% 0	r total cover:		
Herb Stratum (Plot size: 30)	00	V	FAOW	¹ Indicators of hydric soil and wetland hydrology must
1. Persicaria sp."	60	¥		be present, unless disturbed or problematic.
2. <u>Cyperus sp.**</u>	15	Y	FACW	Definitions of Four Vegetation Strata:
3				Tree – Woody plants, excluding vines, 3 in, (7.6 cm) or
4				more in diameter at breast height (DBH), regardless of
5				height.
6				Sapling/Shrub – Woody plants, excluding vines, less
7.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8.				Harb All berbasseus (non woody) planta, regardlass
9				of size, and woody plants less than 3.28 ft tall.
10				·····
11	·			Woody vine – All woody vines greater than 3.28 ft in
10	·			neight.
12	75			
37.5		= Total Cov	15	
50% of total cover: <u></u>	20% of	r total cover:		
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	20% of	f total cover		Present? Yes X No
Pomarks: (If observed, list morphological adaptations bel	20,00		·	
*Of the 14 species of Persicaria listed for Arkansas in the	Atlantic an	d Gulf Coas	stal Plain B	Region, 100% are FAC or wetter with the majority being
OBL.				
	۸ + L - + : -			
FACW.	Allantic and	a Guir Coasi	iai Fiain Re	egion, 75% are FAC of weller with the majority being

Site meets hydrophytic vegetation criteria.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Depth <u>Matrix</u>		Redox Features							
(inches)	Color (moist)		Color (moist)	%	lype'	Loc	<u>l exture</u>	k	Remarks	
0-8"	5YB 5/6	<u> </u>					Silt LUain			
8-12"	10 VR 4/3						Silty Clay Loam			
0-12										
8-12"	10YR 5/3	30								
¹ Type: C=Co	oncentration, D=Dep	oletion, RM=F	Reduced Matrix, N	/IS=Masked	I Sand Gr	ains.	² Location:	PL=Pore Lining	, M=Matrix.	
Hydric Soil	Indicators: (Applic	able to all L	RRs, unless oth	erwise not	ed.)		Indicators	for Problemation	c Hydric So	bils ³ :
Histosol	(A1)		Polyvalue E	Below Surfa	ce (S8) (L	RR S, T, l	リ <u>ト</u> 1 cm l	Muck (A9) (LRR	0)	
Histic Epipedon (A2)							$_$ 2 cm Muck (A10) (LRR S)			
Hydrogen Sulfide (A4) I Loamy Gleved Matrix (E2)							Piedmont Eloodplain Soils (E19) (I RR P S T)			
Stratified Layers (A5)							Anomalous Bright Loamy Soils (F20)			
Organic Bodies (A6) (LRR P, T, U)							(MLRA 153B)			
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7)						Red Parent Material (TF2)				
Muck Presence (A8) (LRR U)							└── Very Shallow Dark Surface (TF12)			
☐ 1 cm Muck (A9) (LRR P, T) ☐ Marl (F10) (LRR U)							Uther (Explain in Remarks)			
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)										
Coast Prairie Redox (A16) (MLRA 150A)							wetland hydrology must be present.			
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151)						, -,	unless disturbed or problematic.			
Sandy Gleyed Matrix (S4)							I			
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)										
Stripped Matrix (S6)										
Dark Sur	rface (S7) (LRR P, s	S, I, U)								
Type. Cla	y/Silt	•								
Depth (inc	ches): ⁸						Hvdric Soil	Present? Ye	s X	No
Remarks:							,			
S	ite meets hyd	ric soil c	riteria.							

Appendix H Site Photographs

▲ DP 1—Hydric soil collected in Wetland 4.

▲ Wetlands 4a & 4b—View looking northwest of emergent and forested wetland.

▲ DP 4—Hydric soil collected in Wetland 5.

▲ W 5a—View looking south of emergent wetland with heavy cattle hoof prints.

▲ W 5b—View looking southeast of forested wetland.

▲ DP 12—Hydric soil collected in Wetland 6.

▲ W 6—View looking northeast.

▲ DP 6—Hydric soil collected in Wetland 7.

▲ W 7—View looking northeast.

▲ DP 8—Hydric soil collected in Wetland 8.

▲ Wetland 8—View looking northwest.

▲ DP 9—Hydric soil collected in Wetland 8.

Little Rock Port Authority VORTAC Relocation Project On-site photographs taken November 19, 2019 Garver Project No. 15017248

▲ DP 11—Hydric soil collected in Wetland 9.

▲ Wetland 9—View looking north.

Little Rock Port Authority VORTAC Relocation Project

On-site photographs taken November 19, 2019 Garver Project No. 15017248

