Wetland Delineation and Water Resource Identification Report

The "Dunes" S. Main Street (Approximately 33.72 Acres) Culver, Marshall County, Indiana

Project Number 221054

Prepared for:

John Kimpel & Associates, Inc. 902 S. 325 East Warsaw, Indiana 46582

Prepared by:



111 W. Berry Street, Suite 211 Fort Wayne, Indiana 46802 260-222-7710 www.nuInventa.com

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EXECUTIVE SUMMARY

John Kimpel & Associates, Inc. hired nuInventa, LLC (nuI) to determine if wetlands and other kinds of surface water resources are present on a 33.72-acre undeveloped parcel located on the west side of S. Main Street in Culver, Marshall County, Indiana (Project Site). Under the Public Land Survey System, the Project Site is said to be located in part of the South ½; Northeast ¼; Section 20; Township 32 North; Range 1 East.

The wetland determination and delineation was completed using methodologies outlined in the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region, Version 2.0.* These documents are currently the professionally accepted documents used to complete wetland determinations and delineations. Other printed and online resources were used to assess current conditions within the limits of the Project Site to gain a perspective of where wetlands may be located, and for fieldwork planning purposes.

Fieldwork required to complete the wetland delineation was conducted November 29, 2022. Through the utilization of methodologies described above, nul identified the following:

- "Wetland A", a 1.40-acre emergent wetland located in the southwestern quadrant of the Project Site.
- "Wetland B", a 0.413-acre emergent wetland located in the northeastern quadrant of the Project Site. This wetland extends offsite to the north.

This wetland delineation report may be submitted to the U.S. Army Corps of Engineers (USACE) along with a written request for a "jurisdictional determination", commonly referred to as a "JD". In Indiana, the USACE is the lead agency with regulatory authority to determine whether or not delineated wetlands, streams, and other water resources are considered "Waters of the U.S.", which are regulated under Sections 401 and 404 of the Clean Water Act (CWA). To obtain a JD, a site visit is typically conducted. At that time, the USACE will determine concurrence with wetland boundaries established; and, occasionally the USACE will request modifications to delineated wetland boundaries in order to issue concurrence with a wetland delineation and complete a JD.

Wetlands, streams, and other water resources that are not regulated under Section 404 of the CWA may otherwise fall into the category of "excluded waters" that are not within the regulatory jurisdiction of the USACE; however, such features are typically considered "isolated" features, or "Waters of the State", and subject to regulation under Indiana's "Isolated Wetlands Rule" (Indiana Code 13-18-22). If necessary, a request may be submitted to the IDEM to complete a "Waters of the State" determination. The request should be accompanied by the JD letter issued by the USACE, if applicable. The IDEM will conclude which wetlands are regulated under Section 401 of the CWA and which are regulated under Indiana Code 13-18-22.



According to Flood Insurance Rate Maps published by the Federal Emergency Management Agency, the footprints of all delineated wetlands occur entirely within the mapped limits of flood "Zone A", which are "areas with 1% annual chance of flooding".

1.0 INTRODUCTION

John Kimpel & Associates, Inc. (Client) hired nuInventa, LLC (nuI) to determine if wetlands and other kinds of surface water resources are present on one undeveloped parcel located at the southwest corner of the intersection of S. Main Street and Davis Street in Culver, Marshall County, Indiana. The location of the Project Site is graphically depicted in **Figure 1**, **Project Site Location Map** in Appendix A; and, under the Public Land Survey System, is said to be located in part of the South ½; Northeast ¼; Section 20; Township 32 North; Range 1 East. Marshall County land parcel records indicate the parcel identification number is 502120204012001014.

The purpose of a wetland determination and delineation is to identify and, if present, show the limits of wetlands and other water resources on a site. The federal definition of wetlands are "...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."

Many wetlands and streams in Indiana are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). Wetlands under the jurisdiction of the USACE are also regulated by the Indiana Department of Environmental Management (IDEM) under Section 401 of the CWA. In cases when a wetland is not regulated by the USACE, such "excluded" features are typically regulated by the IDEM under Indiana's Isolated Wetlands Rule (Indiana Code 13-18-22).

2.0 METHODOLOGY

nul uses methodologies of the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region, Version 2.0* to determine the presence of wetlands and delineate their boundaries. For an area to support wetlands, three criteria must be present, which include a.) a dominance or prevalence of hydrophytic vegetation, b.) hydric soils, and c.) wetland hydrology.

3.0 DESKTOP REVIEW

Prior to conducting fieldwork required to complete the wetland determination and delineation, nul conducted a desktop review of readily-available secondary source information, which includes aerial photography, U.S. Geological Survey (USGS) 7.5-Minute Topographic Quadrangle maps, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, Natural Resources Conservation Service (NRCS) soils data; and, Federal Emergency Management Agency (FEMA) Flood Rate Insurance Map (FIRM) maps.



This secondary source information is routinely assessed to identify particular areas on a site where wetlands, streams, and other water resources may be present.

3.1 Aerial Imagery

Recent aerial imagery with coverage for the Project Site was reviewed; refer to **Figure 2**, **Land Use and Land Cover Map** in Appendix A.

The entire Project Site appears to be undeveloped. Land use and cover includes successional forest along the north boundary and in the west one-quarter portion while tilled agricultural fields comprise the remainder of the Project Site. An unpaved drive extends from the east boundary toward the center of the Project Site. Standing water that appears to be a pond, and an area of saturated soil that may indicate the presence of a wetland, are evident in the southwest corner of the Project Site. Land use in the surrounding vicinity consists of tilled agricultural fields to the south and west, residential properties to the east, a commercial facility to the northwest, and undeveloped land to the north and west.

3.2 USGS Topographic Quadrangle Map

A USGS topographic map with coverage for the Project Site was reviewed; refer to **Figure 3**, **USGS 7.5-Minute Topographic Map, Culver (1962)** in Appendix A.

The topography throughout the Project Site appears to slope downward to the north and west, from a high of approximately 765 feet near the southeast corner to a low of 745 feet along the north and west boundaries. Two excavated areas, or ponds, are shown to be located on the Project Site, one in the southwest corner and another along the north boundary. The excavated feature at the north is contiguous to an offsite swamp/marsh located directly north of the Project Site. No streams or other water resources are shown to occur near the Project Site or in the immediate vicinity thereof.

3.3 USFWS NWI Data

With respect to site-specific wetland determinations, USFWS NWI data are useful primarily for project planning purposes. NWI maps were compiled more than two decades ago and are known to sometimes contain erroneous information. The data are useful, however, when combined with other secondary source information, to gain an understanding of where wetlands are likely to occur, and provide insight as to where wetlands may have *historically* occurred. The USACE and the IDEM do not accept the use of NWI data as a substitute for an onsite wetland determination and delineation.

The NWI map indicates two wetlands are present within the limits of the Project Site, and, the Cowardin classifications of the wetlands shown are listed in Table 1, below; refer to **Figure 4**, **National Wetlands Inventory Map** in Appendix A. A rather larger emergent wetland is located to the north, a small portion of which extends onto the northern fringe of the Project Site.



Table 1. NWI Wetlands			
Symbol	Cowardin Classification		
PUBFx	Palustrine, Unconsolidated Bottom, Semipermanently Flooded, Excavated		
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded		

3.4 NRCS Soils Data

Hydric soils form under conditions of saturation, flooding, or ponding that occur long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile. Presence of hydric soils is one of three criteria required for an area to be considered a wetland. The Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service was accessed to determine what soil map units for Marshall County, Indiana occur within the limits of the Project Site. Six soil map units are shown to occur within the limits of the Project Site; refer to **Figure 5**, **NRCS Soils Map** in Appendix A. The soils are listed in Table 2, below. Hydric inclusions are small portions within mapped units of hydric soils that were otherwise too small to be mapped, or they are expected to occur within the non-hydric unit.

Table 2. Mapped Soil Units					
Map Unit Symbol	Map Unit Name	Status	Hydric Inclusions		
HpjmA	Houghton muck, disintegration moraine, 0 to 2 percent slopes	Hydric	Yes		
OndA	Owosso sandy loam, 0 to 2 percent slopes	Non-Hydric	No		
RopB	Riddles-Oshtemo fine sandy loams, 1 to 5 percent slopes	Non-Hydric	No		
RopC2	Riddles-Metea complex, 5 to 10 percent slopes, eroded	Non-Hydric	No		
TxuA	Tyner loamy sand, 0 to 1 percent slopes	Non-Hydric	No		
WkxC2	Wawasee sandy loam, 6 to 12 percent sloped, eroded	Non-hydric	No		

3.5 Floodplains

A review of FEMA FIRMs was conducted to determine the existence, location, and zone of floodplains on and within the vicinity of the Project Site. The FIRMs show floodplain areas along lakes, rivers, and tributaries. These maps record the following data: 100-year (1% chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood elevation, and the risk of premium zones developed from topographical information across the floodplain. The FEMA Flood Map Service Center was accessed; and, data coverage for the Project Site was accessed by address query. See **Figure 6, FEMA FIRM Map** in Appendix A.

Nearly all of the forested area on the Project Site is located in "Zone A", which is a "zone with a 1% annual chance of flooding" while a small portion of the forested area and nearly all of the tilled agricultural field is located in "Zone X", which is a "zone with a minimal risk of flood hazard".

4.0 RESULTS

Fieldwork required to complete the wetland determination and delineation was conducted November 29, 2022. The temperature was approximately 58 degrees, which is abnormally high for the time of year.

Data were collected at nine data points to determine the presence or absence of areas exhibiting all three wetland criteria. The locations of these data points are shown in **Figure 7**, **Wetland Delineation and Water Resource Map** in Appendix A.

Photographs of the data points and other areas of the Project Site are provided in the **Photographic Log** in Appendix B.

4.1 Wetlands

Two wetlands were identified within the limits of the Project Site. Data regarding the wetlands are provided in Table 2, below.

Table 2. Summary of Delineated Wetlands						
Wetland ID	Туре	Size (acres)	Wetland Data Points			
Wetland A	Palustrine, forested	1.40	1, 3, 5			
Wetland B	Palustrine, emergent	0.413	7			

Wetland A

The presence of a water feature shown on the NWI map and the USGS topographic map in the southwest quadrant of the Project Site was confirmed. The emergent wetland identified is entirely contained within the limits of the Project Site.

The periphery of the wetland is forested; however, the vegetation community throughout most of the wetland is herbaceous. For instance, no species were observed in the sapling/shrub and herbaceous strata at Data Point (DP) 3, whereas trees were present along the edge of the wetland, including silver maple (*Acer saccharinum*, FACW); eastern cottonwood (*Populus deltoides*, FAC); and, pin oak (*Quercus palustris*, FACW). Cursed buttercup (*Ranunculus sceleratus*, OBL) was dominant at DPs 1 and 5. Trees occurring near the edge of the wetland near these data points include *Acer saccharinum* at both and *Populus deltoides* at DP 1, only.

The mapped soil type shown to occur throughout the entire wetland is Houghton muck, a hydric soil. The observed soil characteristics observed at these data points coincide with the that of soil unit. Applicable hydric soil indicators observed include a depleted matrix, a redox dark surface, and a loamy mucky mineral texture.

At least one primary wetland hydrology indicator confirmed the presence of wetland hydrology conditions at all three data points. The depth to the water table was less than 12 inches at DPs 1 and 5 and the depth to saturated soil at DP 3 was 10 inches. Other primary indicators include inundation that is visible on aerial imagery, sparsely vegetated concave surfaces, and water-stained leaves. Applicable secondary wetland hydrology indicators include a dry-season water table, saturation that is visible on aerial imagery, the geomorphic position of the wetland in a concave depression, and the FAC-Neutral Test.

An exposed field drainage tile was observed along the west boundary of the wetland, which conveys surface water into the wetland.

The Cowardin classification for the wetland indicates that it is an excavated feature. Given the characteristics of surrounding uplands, the presence of an upland ridge that protrudes into the interior of the wetland, and steep and abrupt slopes at the wetland's boundaries, it is likely the wetland was indeed "excavated" and not created, as least not entirely, by natural geologic processes.

Wetland B

The NWI map indicates that a palustrine, emergent wetland located to the north extends southward onto the northern fringe of the Project Site; and, data collected and observations made at DP 7 confirm its presence. The USGS topographic map indicates that DP 7 is situated in an excavated feature.



The vegetation throughout most of the wetland, including the offsite portion, is a monotypic stand of reed canary grass (*Phalaris arundinacea*, FACW). Black willow (*Salix nigra*, OBL) trees were observed as isolated inclusions in various areas along the wetland fringe. No sapling/shrub species were observed within the onsite portion of the wetland.

The soil had a loamy, mucky, mineral texture, which confirms the soil is consistent with the mapped soil type, Houghton muck, a hydric soil. Other hydric characteristics observed include a depleted matrix, a redox dark surface, and depletions below a dark surface.

Saturated soil and a high water table were observed at the surface and two inches below the surface, respectively, which are primary wetland hydrology indicators. Applicable secondary indicators include the geomorphic position of the wetland as a depression in the landscape and the FAC-Neutral Test.

4.2 Streams

No streams were identified within the limits of the Project Site.

4.3 Other Features

No other surface water resources were identified within the limits of Project Site.

4.4 Upland Areas

Data were collected and observations were recorded at DPs 2, 4, 6, 8, and 9 to document typical upland characteristics. The textures of soils in upland areas were sandy, and the soils were well-drained. No hydric soil indicators or wetland hydrology indicators were observed at any of these upland data points. DPs 2, 4, and 8 are located near wetlands in upland forested areas. DPs 6 and 9 are located at farther distances from wetlands. The vegetation communities observed at all upland data points are essentially successional forested areas with intermingled upland old field. Tilled agricultural fields are present in the central, northeast, and most of the south one-third portions of the Project Site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Through best professional judgement and utilization of methodologies outlined in the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region, Version 2.0*, nul confirmed the presence of two wetlands on the Project Site that are depicted on the NWI and USGS topographic maps. Wetland A is contained entirely within the limits of the Project Site and is not connected at the surface to any other surface water feature. Wetland B is part of a much larger emergent wetland that is situated north of the Project Site. No contiguous onsite surface water features to Wetland B were observed; however, the existence of any such features at offsite locations could not be determined due to the limits of the project scope.



Nearly all of the forested area and small portions of the tilled agricultural field are located in flood "Zone A"; and, the footprints of all delineated wetlands occur within the limits of this mapped flood zone.

This wetland delineation report may be submitted to the USACE along with a written request for a "jurisdictional determination", commonly referred to as a "JD". In Indiana, the USACE is the lead agency with regulatory authority to determine whether or not delineated wetlands, streams, and other water resources are considered "Waters of the U.S.", which are regulated under Sections 401 and 404 of the CWA. To obtain a JD, a site visit is typically conducted. At that time, the USACE will determine concurrence with wetland boundaries established; and, occasionally the USACE will request modifications to delineated wetland boundaries in order to issue concurrence with a wetland delineation and complete a JD.

Wetlands, streams, and other water resources that are not regulated under Section 404 of the CWA may otherwise fall into the category of "excluded waters" that are not within the regulatory jurisdiction of the USACE; however, such features are typically considered "isolated" features, or "Waters of the State", and subject to regulation under Indiana's "Isolated Wetlands Rule" (Indiana Code 13-18-22). If necessary, a request may be submitted to the IDEM to complete a "Waters of the State" determination. The request should be accompanied by the JD letter issued by the USACE, if applicable. The IDEM will conclude which wetlands are regulated under Section 401 of the CWA and which are regulated under Indiana Code 13-18-22.

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GLOSSARY OF TERMS AND DEFINITIONS*

<u>Atypical wetland</u>: This term refers to areas in which one or more parameters (vegetation, soil and/or hydrology) have been sufficiently altered by human activities or natural events to preclude the presence of wetland indicators of the parameter.

<u>Emergent Wetland</u>: Vegetative classification of a wetland system based on the dominant vegetation consisting of rooted herbaceous plant species that have parts extending above a water surface.

<u>100-year Flood</u>: A flood with a magnitude that has a 1% chance of occurring or being exceeded in any given year.

Floodplain: The area of land adjoining a river or stream that will be inundated by a 100-year flood.

Floodway: The channel of a river or stream and the portions of the floodplain adjoining the channel, which are reasonably required to carry and discharge a 100-year flood.

<u>Hydric Soil</u>: Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (1991 National Technical Committee on Hydric Soils definition).

<u>Hydrophytic Vegetation</u>: Plant species that grow in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats.

<u>Ordinary High Water Mark</u>: The point on a stream bank to which the presence and action of surface water is so continuous as to leave a district marked by erosion; destruction or prevention of woody terrestrial vegetation; predominance of aquatic vegetation; or other easily recognized characteristic.

<u>Scrub-Shrub Wetland</u>: Vegetative classification of a wetland system based on the dominant vegetation consisting of woody plants less than three inches in diameter but greater than three feet in height.

<u>Stream</u>: A general term for a body of flowing water; natural water course containing water at least part of the year. In hydrology, it is generally applied to the water flowing in a natural channel as distinct from a canal.

Typical Situation: That, which normally, usually, or commonly occurs.



<u>Wooded (Forested) Wetland</u>: Vegetative classification of a wetland system based on the dominant vegetation consisting of woody plants three inches in diameter or greater regardless of height.

<u>Wetland</u>: "...land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support, wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh..."

<u>Wetland Hydrology</u>: Hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

Wetland Indicator Status:

OBL: Obligate wetland plant that occurs almost always, 99% of the time, in wetlands under natural conditions, but which rarely occur in non-wetlands.

FACW: Facultative wetland plant that occurs usually, 67% to 99% of the time, in wetlands, but also occurs 1% to 33% of the time in non-wetlands.

FAC: Facultative plant that occurs in both wetlands and non-wetlands 33% to 67% of the time.

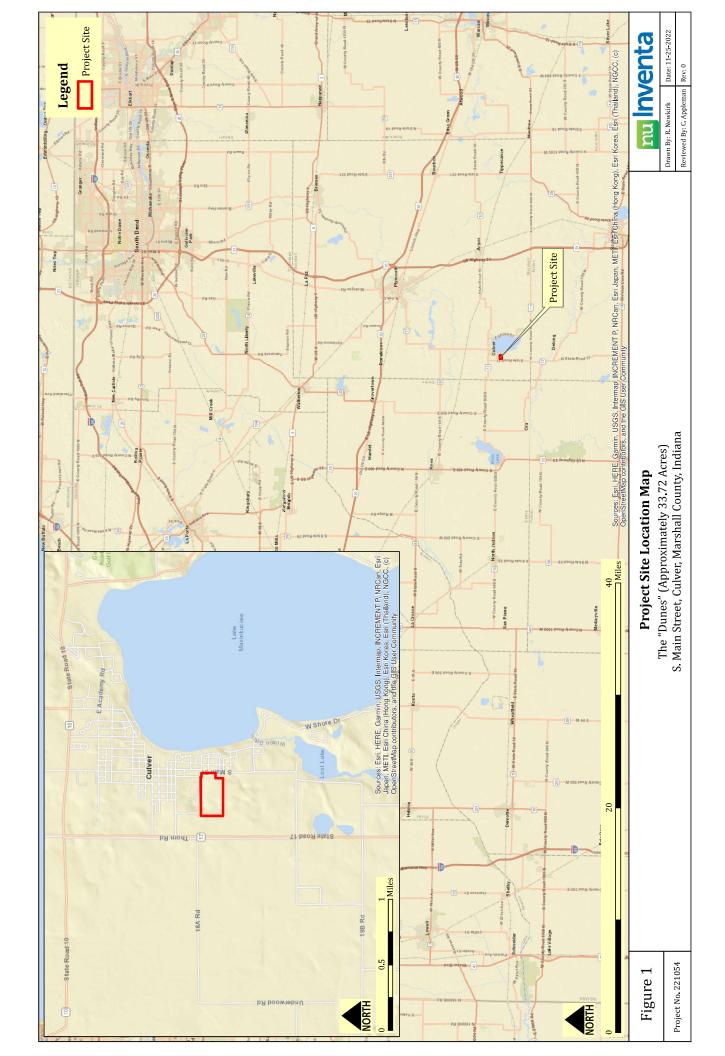
FACU: Plant that occurs sometimes, 1% to 33% of the time, in wetlands but occurs more often, 67% to 99% of the time, in non-wetlands.

*Some terms and definitions listed may not necessarily occur within the report.



APPENDIX A

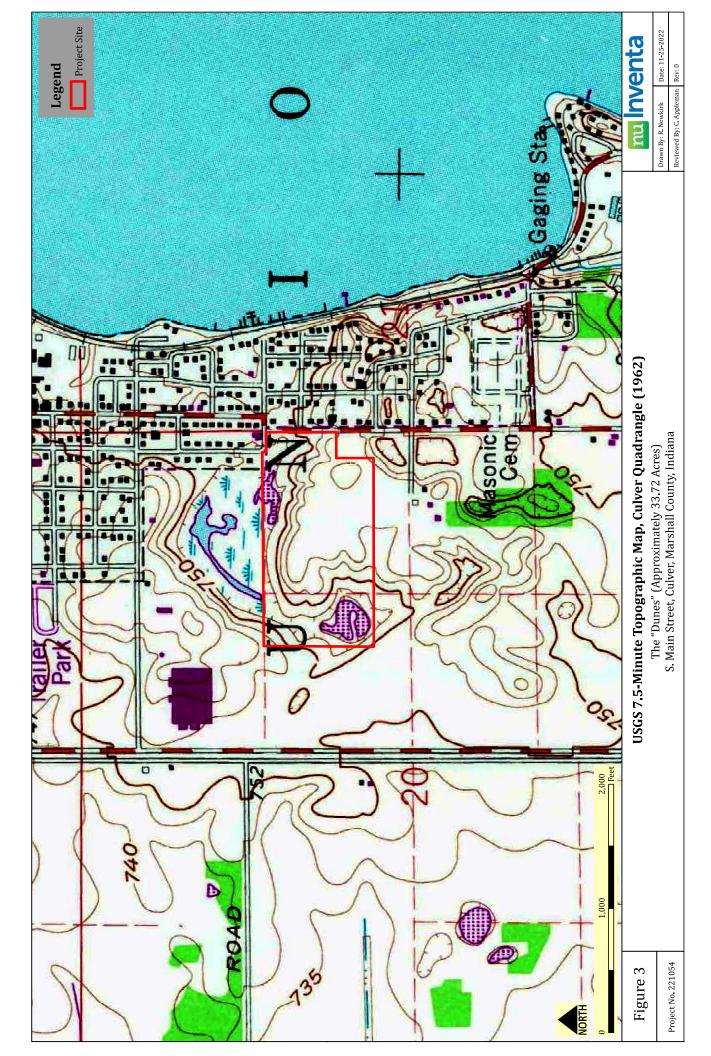
Maps





Reviewed By: C. Appleman Rev: 0

Project No. 221054





National Wetlands Inventory Map

The "Dunes" (Approximately 33.72 Acres) S. Main Street, Culver, Marshall County, Indiana

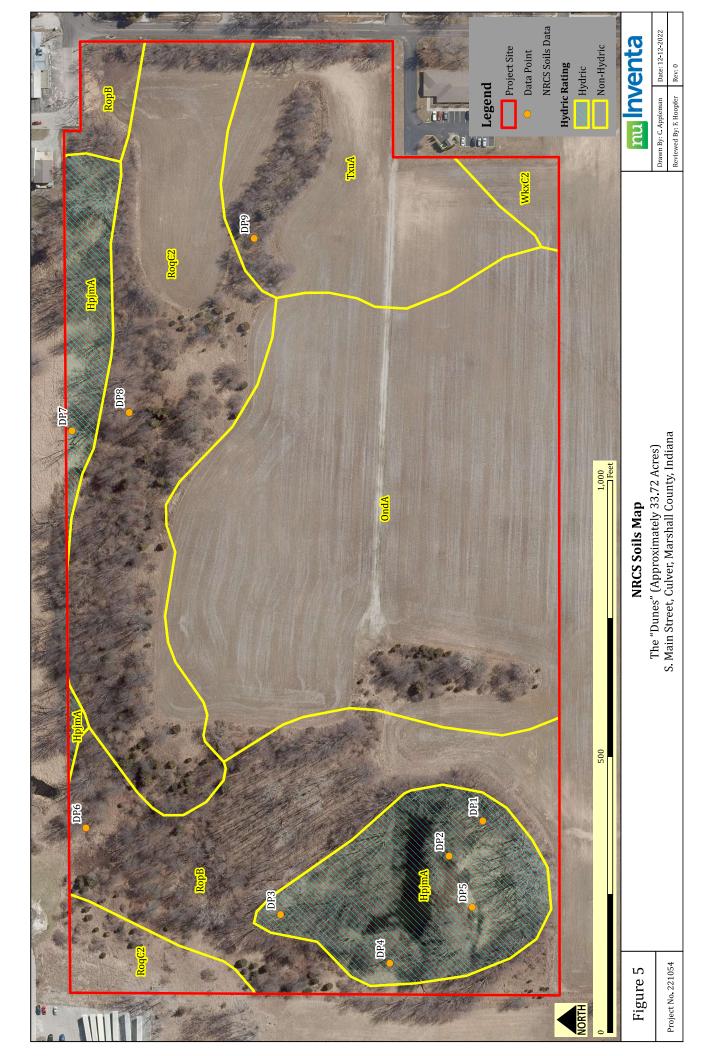
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Drawn By: R. Newkirk

Date: 11-25-2022 Reviewed By: C. Appleman Rev: 0

Project No. 221054

Figure 4





Reviewed By: C. Appleman Rev: 0

Project No. 221054



APPENDIX B

Photographic Log

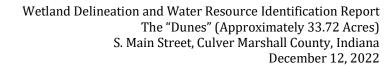




Photo: 1

Date: 11-29-2022

Direction: East

Description: Data Point (DP) 1, shown here, is located in the southeast portion of Wetland A, which is located in the southwest quadrant of the Project Site.



Photo: 2

Date: 11-29-2022

Direction: West

Description: Another view of emergent Wetland A at DP 1.



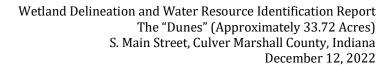




Photo: 3

Date: 11-29-2022

Direction: South

Description: DP 2 is located on an upland ridge that protrudes into Wetland A in the shape of a

peninsula.



Photo: 4

Date: 11-29-2022

Direction: West

Description: Alternative view of DP 2 that is located on an upland

ridge that protrudes into

Wetland A.



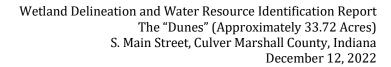




Photo: 5

Date: 11-29-2022

Direction: South

Description: View of wetland DP 3 that is located at the north

end of Wetland A.



Photo: 6

Date: 11-29-2022

Direction: West

Description: Another view of

wetland DP 3.



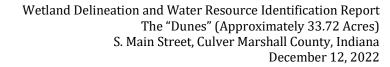




Photo: 7

Date: 11-29-2022

Direction: North

Description: DP 4 is located on an upland ridge situated along the west side of Wetland A, in the southwest quadrant of the Project Site.



Photo: 8

Date: 11-29-2022

Direction: East

Description: Another view of

wetland DP 4.



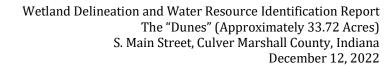




Photo: 9

Date: 11-29-2022

Direction: Northwest

Description: A view of an exposed field tile that is located along the west boundary of

Wetland A.



Photo: 10

Date: 11-29-2022

Direction: South

Description: View of surface water flowing into Wetland A from an exposed field tile located along the west boundary of the

wetland.



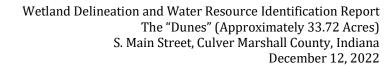




Photo: 11

Date: 11-29-2022

Direction: East

Description: DP 5 is located in the southwest portion of emergent Wetland A.



Photo: 12

Date: 11-29-2022
Direction: West

Description: Alternate view of

wetland DP 5.



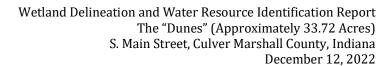




Photo: 13

Date: 11-29-2022 **Direction:** East

Description: DP 6 is located in an upland old field in the northwest quadrant of the

Project Site.



Photo: 14

Date: 11-29-2022
Direction: North

Description: View of wetland DP 7, which is located in the northwestern quadrant of Wetland B, an emergent wetland that extends offsite to the north.



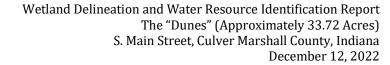




Photo: 15

Date: 11-29-2022 Direction: East

Description: Another view of

wetland DP 7.



Photo: 16

Date: 11-29-2022 **Direction:** South

Description: View of a forested upland ridge at DP 8, which is located approximately 25 feet south of Wetland B.





PHOTOGRAPHIC LOG

Photo: 17

Date: 11-29-2022

Direction: South

Description: DP 9 is located in an elongated upland area flanked on its two long sides by tilled agricultural fields. The vegetation consists of interspersed trees and shrubs with a herbaceous understory.



<u>APPENDIX C</u> Wetland Determination Data Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)

Project/Site: The "Dunes" (Project No. 221054) S. Main	Street (33.72 a	ac) City/Cou	inty: Culver/I	Marshall County	Sampling Date	e: <u>11-2</u>	29-2022
Applicant/Owner: Culver Equities LLC (deeded ow	ner)			State: IN	Sampling Poir	nt:[DP 1
Investigator(s): R. Newkirk; F. Hoopfer		Section, 1	Γownship, Ra	nge: S1/2; NE1/4; Sec	. 20; T32N; R1E		
Landform (hillside, terrace, etc.): depression			Local relief (c	concave, convex, none):	concave		
Slope (%): 3 Lat: 41.209205		Long: 4	11.209205		Datum: WGS19	84	
Soil Map Unit Name: HpjmA - Houghton muck, disinte	gration morai			NWI classi	fication: PUBFx		
Are climatic / hydrologic conditions on the site typical f	for this time o	f year?	Yes X	No (If no, ex	plain in Remarks	5.)	
Are Vegetation No , Soil No , or Hydrology No				Circumstances" present?		No	
Are Vegetation No , Soil No , or Hydrology No	-			plain any answers in Re			_
SUMMARY OF FINDINGS – Attach site m				-	•	atures	, etc.
Hydrophytic Vegetation Present? Yes X N	lo	Is the	Sampled Ar	·ea			
	——————————————————————————————————————		n a Wetland?		No		
Wetland Hydrology Present? Yes X N	0						
Remarks:		•					
Data point is located in the southeast portion of Wetla	and A, which i	is located in th	ne southwest	quadrant of the Project	Site.		
VEGETATION – Use scientific names of pla		<u> </u>					
<u>Tree Stratum</u> (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:		
1. Acer saccharinum	40	Yes	FACW	Number of Dominant			
2. Populus deltoides	5	No	FAC	Are OBL, FACW, or F	•	2	(A)
3.				Total Number of Dom	inant Species		_
4				Across All Strata:	_	2	_ (B)
5				Percent of Dominant	•		
O and line of Observations and Object a line of A.S.	<u>45</u>	=Total Cover		Are OBL, FACW, or F	-AC: _	100.0%	- ^(A/B)
Sapling/Shrub Stratum (Plot size: 15)			Prevalence Index we	orkshoot:		
1. <u>None</u> 2.				Total % Cover of		iply by:	
3.				_	0 x 1 =	40	_
4.					5 x 2 = -	90	_
5.				FAC species	5 x 3 =	15	_
		=Total Cover		FACU species (x 4 =	0	_
Herb Stratum (Plot size: 5)					x 5 =	0	_
Ranunculus sceleratus	30	Yes	OBL	Column Totals: 9		145	_(B)
2. Leersia oryzoides	8	<u>No</u>	OBL	Prevalence Index	= B/A = <u>1</u>	.61	_
3. Phalaris arundinacea	5	No No	FACW				
4. Boehmeria cylindrica	2	No	OBL	Hydrophytic Vegeta			
5. 6.				1 - Rapid Test for X 2 - Dominance Te		getation	
				X 3 - Prevalence In			
				4 - Morphological		rovide su	ınnortin
9.					ks or on a separa		
10.				Problematic Hydr	ophytic Vegetati	on¹ (Expl	lain)
	45	=Total Cover		¹ Indicators of hydric s			,
Woody Vine Stratum (Plot size: 15)			be present, unless dis			
1. None				Hydrophytic			
2				Vegetation			
		=Total Cover		Present? Yes	XNo		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)						

Depth	Matrix			x Featur			confirm the absence of	· · · · · · · · · · · · · · · · · · ·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/2	50	5YR 3/4	50	С	M	Loamy/Clayey	Prominent redox concentrations
8-18	10YR 4/2	80	7.5YR 4/6	20	С	M	Loamy/Clayey	Prominent redox concentrations
				<u> </u>	<u> </u>	<u> </u>		
1 _{Type:} C=Ce	noontration D-Don	lotion DM	- Poducod Matrix N		Lod Son	d Crains	2l coation	: PL=Pore Lining, M=Matrix.
Hydric Soil I	oncentration, D=Dep	ieuon, Kivi-	-Reduced Matrix, r	vio-ivias	keu San	u Grains		rs for Problematic Hydric Soils ³ :
Histosol (Sandy Gle	ved Mat	rix (S4)			t Prairie Redox (A16)
	ipedon (A2)		Sandy Red	-				Manganese Masses (F12)
Black His			Stripped M					Parent Material (F21)
Hydrogen Sulfide (A4) Dark Surface (S7)							Very	Shallow Dark Surface (F22)
Stratified Layers (A5) Loamy Mucky Mine							Other	r (Explain in Remarks)
2 cm Mu	ck (A10)		Loamy Gle	eyed Mat	rix (F2)			
Depleted	Below Dark Surface	e (A11)	X Depleted N	Лatrix (F	3)			
Thick Da	rk Surface (A12)		Redox Da	rk Surfac	e (F6)		³ Indicator	s of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted [, ,)		nd hydrology must be present,
5 cm Mud	cky Peat or Peat (S3	3)	? Redox De	pression	s (F8)		unles	s disturbed or problematic.
Restrictive L	ayer (if observed):							
Type: _								
Depth (in	ches):		<u> </u>				Hydric Soil Present	? Yes X No
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
	ators (minimum of o	ne is requi	red; check all that a	apply)			Secondar	y Indicators (minimum of two required)
	Water (A1)		Water-Sta		, ,)		ce Soil Cracks (B6)
	ter Table (A2)		Aquatic Fa					age Patterns (B10)
X Saturatio			True Aqua			`		Season Water Table (C2)
Water Ma			Hydrogen					ish Burrows (C8)
_	t Deposits (B2) osits (B3)		Oxidized F Presence			-		ration Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
	t or Crust (B4)		Recent Iro			` '		norphic Position (D2)
Iron Depo	` ,		Thin Muck				` '	Neutral Test (D5)
	n Visible on Aerial Ir	magery (B7						
Sparsely	Vegetated Concave	Surface (E	38) Other (Exp	olain in R	lemarks))		
Field Observ	/ations:							
Surface Wate	er Present? Ye	s	No X	Depth (i	nches):			
Water Table	Present? Ye	s X	No	Depth (i	nches):	11		
Saturation Pr	resent? Ye	s X	No	Depth (i	nches): _	9	Wetland Hydrolog	gy Present? Yes X No
(includes cap								
Describe Red	corded Data (stream	gauge, mo	onitoring well, aeria	l photos	, previou	s inspec	ctions), if available:	
Remarks:								
	located near a pool	of standing	y water, approxima	tely six ir	nches de	ер.		

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	Street (33.72 a	c) City/Cou	nty: Culver/M	Marshall County	Sampling Da	ate: 11-2	9-2022
Applicant/Owner: Culver Equities LLC (deeded owr	ner)			State: IN	— Sampling Po	oint: [DP 2
Investigator(s): R. Newkirk; F. Hoopfer	·	Section, T	Township, Ran	nge: S1/2; NE1/4; S	— ec. 20; T32N; R1		
Landform (hillside, terrace, etc.): ridge				oncave, convex, none			
,			86.429601	ondavo, convex, none	, <u> </u>	1001	
Slope (%): 1 Lat: 41.209371				NI\A/I =1==	Datum: WGS	1904	
Soil Map Unit Name: HpjmA - Houghton muck, disinted		-		INVVI clas	sification: <u>UPL</u>		
Are climatic / hydrologic conditions on the site typical fo	or this time of	-	Yes X	No (If no, 6	•	,	
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> s	significantly o	disturbed? A	Are "Normal C	ircumstances" presen	it? Yes X	No	_
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> r	naturally prob	olematic? (If needed, exp	olain any answers in F	Remarks.)		
SUMMARY OF FINDINGS – Attach site ma	ap showin	ıg samplin	g point loc	cations, transect	s, important	features	, etc.
Hydrophytic Vegetation Present? Yes No	. X	le the	Sampled Ar	03			
	$\frac{x}{x}$	1	n a Wetland?		No X		
	$\frac{x}{X}$	Within	ira Welland:				
	<u> </u>						
Remarks: Data point is located on an upland ridge that protrude:	s into Wetlan	d A in the sha	ape of a pening	sula			
Data point to tooated on an apiana mage that produces	o into Trotian		apo or a pormi	odia.			
VEGETATION – Use scientific names of pla	nte						
VEGETATION – Ose scientific flames of pla	Absolute	Dominant	Indicator				
<u>Tree Stratum</u> (Plot size: 30)	% Cover	Species?	Status	Dominance Test w	orksheet:		
1. Morus rubra	40	Yes	FACU	Number of Dominar			
2. Acer saccharinum	30	Yes	FACW	Are OBL, FACW, or	•	2	(A)
3. Prunus serotina	5	No	FACU	Total Number of Do			_` ′
4.				Across All Strata:	minant opecies	6	(B)
5.				Percent of Dominar	nt Species That	-	_` ′
	75	=Total Cover		Are OBL, FACW, or	•	33.3%	(A/B)
Sapling/Shrub Stratum (Plot size: 15)	,			7.1.0 0.22, 1.7.011, 0.		00.070	_('''
Elaeagnus umbellata	35	Yes	UPL	Prevalence Index	worksheet:		
Lonicera maackii	4	No	UPL	Total % Cover		ultiply by:	
3.				OBL species	0 x 1 =	0	_
4.				FACW species	48 x 2 =	96	_
5.				FAC species	10 x 3 =	30	_
	39	=Total Cover		FACU species	71 x 4 =	284	_
Herb Stratum (Plot size: 5)				UPL species	79 x 5 =	395	_
1. Rubus occidentalis	40	Yes	UPL		208 (A)	805	(B)
2. Phytolacca americana	25	Yes	FACU	Prevalence Inde		3.87	- ` ′
3. Carex blanda	7	No	FAC				_
4. Echinocystis lobata	5	No	FACW	Hydrophytic Vege	tation Indicators	s:	
5. Geum canadense	3	No	FAC	1 - Rapid Test f	for Hydrophytic V	/egetation	
6. Geum macrophyllum	3	No	FACW	2 - Dominance		-	
7. Solidago canadensis	1	No	FACU	3 - Prevalence	Index is ≤3.0 ¹		
8.				4 - Morphologic	cal Adaptations ¹ (Provide su	pporting
9.				data in Rema	arks or on a sepa	rate sheet)
10.				Problematic Hy	drophytic Vegeta	ation ¹ (Expl	ain)
	84	=Total Cover		¹ Indicators of hydric	soil and wetland	d hydroloav	/ must
				be present, unless			
Woody Vine Stratum (Plot size: 15))						
Woody Vine Stratum (Plot size: 15) 1. Echinocystis lobata	10	Yes	FACW	Hydrophytic			
· · · · · · · · · · · · · · · · · · ·	10	Yes	FACW_	Hydrophytic Vegetation			
1. Echinocystis lobata		Yes Total Cover	FACW_	• • •	esNo	X	

Profile Desc Depth	ription: (Describe Matrix	to the dept		ument t l x Featur		ator or c	confirm the absence of	of indicators.)		
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type ¹	Loc ²	Texture	Rer	narks	
0-11	10YR 2/1	100			<u> 7 </u>		Loamy/Clayey			
11-17	10YR 3/1	95	7.5YR 3/4	5	С	M	Loamy/Clayey	Prominent redo	v concentr	ations
	10111 0/1		7.511(5/4	_			Loamy/Olaycy	1 Tomment read	X CONCENT	ations
	-									
1					. —		2			
	oncentration, D=Dep	letion, RM=	Reduced Matrix, N	//S=Mas	ked San	d Grains		PL=Pore Lining, N		3.
Hydric Soil			Sandy Cla	vad Mat	riv (C1)			s for Problematic	-	IIS":
— Histosol	ipedon (A2)		Sandy Gle Sandy Red					: Prairie Redox (A1 Manganese Masses	-	
Black His			Stripped M					Parent Material (F2		
	n Sulfide (A4)		Dark Surfa	•	5)			Shallow Dark Surfa		
	Layers (A5)		Loamy Mu		eral (F1)			(Explain in Remarl	. ,	
2 cm Mu			Loamy Gle					(,	
	Below Dark Surfac	e (A11)	Depleted N	•	. ,					
	rk Surface (A12)	` '	Redox Da				³ Indicators	s of hydrophytic veg	getation an	d
Sandy M	ucky Mineral (S1)		Depleted [)	wetlar	nd hydrology must	be present	,		
5 cm Mu	cky Peat or Peat (S	3)	Redox De	oression	s (F8)		unles	s disturbed or probl	ematic.	
Restrictive I	ayer (if observed)									
Type: _			_							
Depth (in	nches):						Hydric Soil Present	? Yes	· '	No X
Remarks:						-				
HYDROLO	GY									
Wetland Hvo	drology Indicators:									
_	cators (minimum of c		ed; check all that	apply)			Secondar	y Indicators (minim	um of two i	required)
Surface	Water (A1)		Water-Sta	ned Lea	ives (B9)		Surfac	ce Soil Cracks (B6)		
High Wa	ter Table (A2)		Aquatic Fa	iuna (B1	3)		Draina	age Patterns (B10)		
Saturatio	on (A3)		True Aqua	tic Plant	s (B14)		Dry-S	eason Water Table	(C2)	
Water Ma	arks (B1)		Hydrogen					sh Burrows (C8)		
	t Deposits (B2)		Oxidized F					ation Visible on Aer		/ (C9)
	osits (B3)		Presence			` '		ed or Stressed Plar		
	t or Crust (B4)		Recent Iro			lled Soil	` ' —	norphic Position (D2	2)	
	osits (B5) on Visible on Aerial I	magany (R7)	Thin Muck) Gauge or '		` '		FAC-I	Neutral Test (D5)		
	Vegetated Concave	0 , ,			` '					
Field Observ		- Carraco (B	<u> </u>	, idii i i i i	tomarko)		1			
Surface Water		25	No X	Denth (i	nches):					
Water Table		es			nches):					
Saturation P					nches):		Wetland Hydrolog	y Present? Yes	; l	No X
(includes cap				' '	′ =			•		
	corded Data (stream	gauge, moi	nitoring well, aeria	l photos	, previou	s inspec	tions), if available:			
Remarks:										

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	treet (33.72 a	ac) City/Cou	unty: Culver/N	Marshall County	Sampling Da	te: <u>11-2</u>	9-2022
Applicant/Owner: Culver Equities LLC (deeded own	er)			State: IN	Sampling Po	int:	OP 3
Investigator(s): R. Newkirk; F. Hoopfer		Section,	Township, Rar	nge: S1/2; NE1/4; Se	— ec. 20; Т32N; R1I	≣	
Landform (hillside, terrace, etc.): depression			Local relief (c	oncave, convex, none): concave		
Slope (%): 0 Lat: 41.210205		Long: -	-86.429996		Datum: WGS1	984	
Soil Map Unit Name: HpjmA - Houghton muck, disinteg	ration morai	ne, 0 to 2 per	cent slopes	NWI clas	sification: PUBFx	(
Are climatic / hydrologic conditions on the site typical fo	r this time o	f vear?	Yes X	No (If no, e	explain in Remark	s.)	
Are Vegetation No , Soil No , or Hydrology No s		-		ircumstances" presen		, No	
Are Vegetation No , Soil No , or Hydrology No n			(If needed, ex	olain any answers in F	Remarks.)		_
SUMMARY OF FINDINGS – Attach site ma			`	•	,	eatures	, etc.
Hydrophytic Vegetation Present? Yes X No		ls the	e Sampled Ar	02			
Hydric Soil Present? Yes X No		1	n a Wetland?		No		
Wetland Hydrology Present? Yes X No							
Remarks:		<u> </u>					
Data point is located at the north end of Wetland A.							
VEGETATION – Use scientific names of plan							
<u>Tree Stratum</u> (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test w	orkshoot:		
1. Acer saccharinum	70	Yes	FACW	Number of Dominar			
Populus deltoides	10	No	FAC	Are OBL, FACW, or	•	1	(A)
3. Quercus palustris	7	No	FACW	Total Number of Do	_		- ` ′
4.				Across All Strata:	_	1	_(B)
5.				Percent of Dominar	nt Species That		_
	87	=Total Cover		Are OBL, FACW, or	FAC:	100.0%	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15)							
1. None				Prevalence Index			
2.				Total % Cover		Itiply by:	_
3.				OBL species FACW species	$\frac{0}{77}$ $x 1 = $	0 154	-
5.				FAC species	$\begin{array}{ccc} 77 & x2 = \\ \hline 10 & x3 = \\ \end{array}$	30	-
J		=Total Cover		FACU species	0 x 4 =	0	-
Herb Stratum (Plot size: 5)		Total Gover		UPL species	0 x5=	0	_
1. None				· · · · · · · · · · · · · · · · · · ·	87 (A)	184	(B)
2.				Prevalence Index		2.11	_` ′
3.							_
4.				Hydrophytic Veget	tation Indicators	:	
5.				1 - Rapid Test f	or Hydrophytic Ve	egetation	
6.				X 2 - Dominance	Test is >50%		
7				X 3 - Prevalence			
8					al Adaptations ¹ (F		
9					arks or on a separ	,	
10					drophytic Vegetat	` .	,
Woody Vine Stratum (Plot size: 15)	;	=Total Cover		¹ Indicators of hydric be present, unless of			must
1. None				Hydrophytic			
2.				Vegetation			
		=Total Cover		-	s <u>X</u> No_		
Remarks: (Include photo numbers here or on a separa	ate sheet.)						

Profile Des Depth	cription: (Describe Matrix	to the dep		ument t ox Featu		ator or o	confirm the absence o	f indicators.)		
	Color (moist)	 -	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
(inches) 0-2	10YR 2/1	70	5YR 3/4	30	C	M	Loamy/Clayey	Prominent redox concentrations		
-										
2-18	2.5YR 3/1	60	5YR 3/4	40	<u>C</u>	<u>M</u>	Loamy/Clayey	Prominent redox concentrations		
							_			
1Type: C=C	oncentration, D=Dep	letion RM:	-Reduced Matrix	MS-Mac	ked San	d Grains	² Location:	PL=Pore Lining, M=Matrix.		
	Indicators:	iction, raw	-reduced Matrix,	IVIO-IVIAS	ncu can	a Orania		s for Problematic Hydric Soils ³ :		
Histosol			Sandy Gl	eved Mat	rix (S4)			Prairie Redox (A16)		
	pipedon (A2)		Sandy Re	-				langanese Masses (F12)		
	istic (A3)		Stripped I	, ,				Parent Material (F21)		
	en Sulfide (A4)		Dark Surf	•	-,			Shallow Dark Surface (F22)		
	d Layers (A5)		Loamy M		eral (F1)			(Explain in Remarks)		
	uck (A10)		Loamy GI	-				,		
	d Below Dark Surface	e (A11)	Depleted	-						
Thick D	ark Surface (A12)	, ,	X Redox Da	-	-		³ Indicators	s of hydrophytic vegetation and		
Sandy N	Mucky Mineral (S1)		— Depleted	Dark Sur	face (F7))	wetlar	nd hydrology must be present,		
5 cm Mu	ucky Peat or Peat (S3	3)	? Redox De	pression	s (F8)			s disturbed or problematic.		
Restrictive	Layer (if observed):		<u> </u>							
Туре:										
Depth (i	nches):						Hydric Soil Present	? Yes <u>X</u> No		
Remarks:						!				
HYDROLO										
, ,	drology Indicators:						0 1			
	cators (minimum of o	ne is requi			(DO)			y Indicators (minimum of two required		
	Water (A1)		Water-Sta					ce Soil Cracks (B6)		
	ater Table (A2)		Aquatic F	`	,			age Patterns (B10)		
X Saturati	` '		True Aqua		, ,	`		eason Water Table (C2)		
l —	farks (B1) nt Deposits (B2)		Hydrogen Oxidized					sh Burrows (C8) ation Visible on Aerial Imagery (C9)		
_	posits (B3)		Presence			_		ed or Stressed Plants (D1)		
	at or Crust (B4)		Recent Ire			, ,		orphic Position (D2)		
—	posits (B5)		Thin Mucl			iica coii		Neutral Test (D5)		
·	on Visible on Aerial I	magery (B					<u> </u>	Vodital 1001 (20)		
l ——	y Vegetated Concave	0 , (<i>_</i>							
Field Obse			<u> </u>	<u> </u>						
	ter Present? Ye	s	No X	Depth (i	nches).					
Water Table		s X	No No	Depth (i	· -	14				
Saturation F		s X	No		nches):	10	Wetland Hydrolog	y Present? Yes X No		
	pillary fringe)		· <u> </u>	· - ··· ('	/-			<u>, </u>		
	ecorded Data (stream	gauge, mo	onitoring well, aeri	al photos	, previou	s inspec	tions), if available:			
Domester										
Remarks:										

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	Street (33.72 a	<u>ac)</u> City/Cou	ınty: <u>Culver/N</u>	Marshall County	Sam	pling Date	e: <u>11-2</u> 9	9-2022
Applicant/Owner: Culver Equities LLC (deeded own	ner)			State:	IN Sam	pling Poir	nt:)P 4
Investigator(s): R. Newkirk; F. Hoopfer		Section, 7	Township, Rar	nge: S1/2; NE1/	4; Sec. 20; T3	32N; R1E		
Landform (hillside, terrace, etc.): hillside			Local relief (c	oncave, convex,	none): <u>conve</u> x			
Slope (%):5 Lat: 41.209661		Long:	-86.430311		Datum	: WGS19	84	
Soil Map Unit Name: HpjmA - Houghton muck, disinte	gration morai	ne, 0 to 2 per	cent slopes	NWI	classification	UPL		
Are climatic / hydrologic conditions on the site typical for	or this time o	f year?	Yes_X_	No (If	no, explain in	Remarks	.)	
Are Vegetation No , Soil No , or Hydrology No	significantly o	disturbed?	Are "Normal C	ircumstances" pr	esent? Yes	. X	No	
Are Vegetation No , Soil No , or Hydrology No			(If needed, ex	olain any answers	s in Remarks.)			-
SUMMARY OF FINDINGS – Attach site m				•	ŕ		atures	, etc.
Hydrophytic Vegetation Present? Yes No	o X	Is the	e Sampled Ar	ea				
	<u> </u>	I	n a Wetland?		No	X		
	0 X							
Remarks:								
Data point is located on an upland ridge situated alon	g the west si	de of Wetland	d A, in the sou	thwest quadrant o	of the Project	Site.		
VEGETATION – Use scientific names of pla								
<u>Tree Stratum</u> (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Te	est workshee	t·		
1. Acer saccharinum	45	Yes	FACW	Number of Dor				
2. Quercus palustris	15	No	FACW	Are OBL, FAC		Tilat	1	(A)
3. Morus rubra	10	No	FACU	Total Number	of Dominant S	pecies		-
4. Prunus serotina	7	No	FACU	Across All Stra	ta:	· _	4	_(B)
5				Percent of Don	•	s That		
	77	=Total Cover		Are OBL, FAC	W, or FAC:	_	25.0%	- (A/B)
Sapling/Shrub Stratum (Plot size: 15	_							
1. Lonicera maackii	<u>5</u>	Yes Yes	UPL UPL	Prevalence In			inly by	
Elaeagnus umbellata 3.	4	res	UPL_	Total % C OBL species	0	x 1 =	iply by: 0	-
4.				FACW species		x 2 =	136	_
5.				FAC species	0	x 3 =	0	-
	9	=Total Cover		FACU species	107	x 4 =	428	-
Herb Stratum (Plot size: 5)				UPL species	9	x 5 =	45	_
1. Schedonorus arundinaceus	90	Yes	FACU	Column Totals	184 ((A)	609	(B)
2. Urtica dioica	8	No	FACW	Prevalence	Index = B/A =	:3	3.31	_
3								
4				Hydrophytic \	_			
5.					est for Hydro ance Test is >	-	getation	
6 7.					nce Test is >: ence Index is ≤			
Q					logical Adapta		rovide suu	onortina
9.					Remarks or or			
10.				Problemati	c Hydrophytic	Vegetati	on ¹ (Expla	ain)
	98	=Total Cover		¹ Indicators of h		•		,
Woody Vine Stratum (Plot size: 15				be present, unl				
1. None				Hydrophytic				<u>-</u> -
2				Vegetation				
	:	=Total Cover		Present?	Yes	No_	<u> </u>	
Remarks: (Include photo numbers here or on a separ	rate sheet.)							

Profile Des Depth	cription: (Describe Matrix	to the dep		ument tl x Featur		ator or o	confirm the absence	of indicators	.)		
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		
0-8	10YR 3/2	95	10YR 5/6	5	C		Loamy/Clayey	Prominer	nt redox conce	entrations	
8-15	10YR 5/1	40	10YR 5/8	60	С		Loamy/Clayey	Prominer	nt redox conce	entrations	
		<u> </u>							N. T. D. W. C. C. T. C.		
	-										
				—							
	·										
1			Deduced Metric	40. 14			21	DI Danielli	NA NA-4		
	Concentration, D=De Indicators:	pietion, Rivi	=Reduced Matrix, i	vi5=ivias	ked San	d Grains			ning, M=Matri matic Hydric		
Histoso			Sandy Gle	ved Mat	rix (S4)			t Prairie Redo	-	Julia .	
	pipedon (A2)		Sandy Re	•	, ,			Manganese M			
	listic (A3)		Stripped M					Parent Materi	, ,		
Hydrogen Sulfide (A4) Dark Surface (S7)									Surface (F22	·)	
	d Layers (A5)		Loamy Mu		Othe	r (Explain in F	Remarks)	•			
	uck (A10)		Loamy Gle	-					,		
Deplete	ed Below Dark Surfac	ce (A11)	Depleted I	-							
Thick D	ark Surface (A12)		X Redox Da	rk Surfac	ce (F6)		³ Indicator	s of hydrophy	tic vegetation	and	
Sandy I	Mucky Mineral (S1)	Depleted [)	wetla	nd hydrology	must be pres	ent,				
5 cm M	ucky Peat or Peat (S	3)	? Redox De		unles	s disturbed o	r problematic.				
Restrictive	Layer (if observed):									
Type:											
Depth (i	inches):						Hydric Soil Presen	t?	Yes X	No	
Remarks:						•					
HYDROL	OGY										
-	ydrology Indicators										
-	icators (minimum of	one is requi			(DO)				minimum of to	vo require	
	e Water (A1)		Water-Sta Aquatic Fa		,)		ice Soil Crack			
<u> </u>	ater Table (A2) ion (A3)		True Aqua				Drainage Patterns (B10) Dry-Season Water Table (C2)				
_	Marks (B1)		Hydrogen		,)	Crayfish Burrows (C8)				
	ent Deposits (B2)		Oxidized F						on Aerial Imaç	nery (C9)	
_	posits (B3)		Presence						ed Plants (D1)		
	at or Crust (B4)		Recent Iro			` '		norphic Positi			
	posits (B5)		Thin Muck				` '	Neutral Test	` '		
Inundat	ion Visible on Aerial	Imagery (B	7)Gauge or	Well Dat	a (D9)				,		
Sparsel	y Vegetated Concav	e Surface (l	B8) Other (Exp	olain in F	Remarks))					
Field Obse	rvations:										
Surface Wa	iter Present? Y	es	No X	Depth (i	nches):						
Water Table	e Present? Y	es			nches):						
Saturation F	Present? Y	es	No X	Depth (i	nches):		Wetland Hydrolo	gy Present?	Yes	No X	
_	apillary fringe)										
Describe Re	ecorded Data (strear	n gauge, m	onitoring well, aeria	I photos	, previou	s inspec	ctions), if available:				
Remarks:											

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	Street (33.72)	ac) City/Cou	inty: Culver/N	larshall County	Sam	ipling Da	ate: 11-2	9-2022
Applicant/Owner: Culver Equities LLC (deeded own	ner)			State:	N Sam	pling Po	oint:	OP 5
Investigator(s): R. Newkirk; F. Hoopfer		Section, 1	Γownship, Ran	nge: S1/2; NE1/	4; Sec. 20; T	32N; R1	E	
Landform (hillside, terrace, etc.): depression				oncave, convex, i				
Slope (%): 0 Lat: 41.209254			86.429937	, ,		: WGS	1984	
Soil Map Unit Name: HpjmA - Houghton muck, disinte	rration mora			NWI	classification			
			-					
Are climatic / hydrologic conditions on the site typical for		•	Yes X	No (If				
Are Vegetation No , Soil No , or Hydrology No :				ircumstances" pro			No	_
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u>	naturally pro	blematic? ((If needed, exp	olain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site ma	ap showii	ng samplin	g point loc	cations, trans	ects, impo	ortant	features	, etc.
Library in the Versetation Decrease O. Versey	_	1- 41-	0					
		I	e Sampled Aron a Wetland?		V N/			
·	<u> </u>	WILLIII	ii a vvetialiu :	162	X No	`		
	<u> </u>							
Remarks: Data point is located in the southwest portion of Wetla	and A							
VEGETATION – Use scientific names of pla	nts							
VIOLITATION GOO COLOTINIO TIAITICO CI PIA	Absolute	Dominant	Indicator					
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Te	st workshee	t:		
1. Acer saccharinum	15	Yes	FACW	Number of Don	ninant Specie	s That		
2				Are OBL, FAC	W, or FAC:		3	_(A)
3				Total Number of	of Dominant S	Species		
4				Across All Stra	ta:		3	- (B)
5				Percent of Don		s That		
0 15 (0) 1 0 (0) (0)		=Total Cover		Are OBL, FAC	W, or FAC:		100.0%	– ^(A/B)
Sapling/Shrub Stratum (Plot size: 15	,	V	ODI	D		-4-		
Cephalanthus occidentalis 2.	20	Yes	OBL_	Prevalence Inc Total % C			ıltiply by:	
3				OBL species	80	x 1 =	80	-
1				FACW species		x 2 =	64	-
5.				FAC species	0	x 3 =	0	-
	20	=Total Cover		FACU species	0	x 4 =	0	-
Herb Stratum (Plot size: 5)				UPL species	0	x 5 =	0	_
1. Ranunculus sceleratus	60	Yes	OBL	Column Totals:	112	(A)	144	(B)
2. Phalaris arundinacea	10	No	FACW	Prevalence	Index = B/A =	=	1.29	_
3. Phragmites australis	4	No	FACW					
4. Bidens frondosa	3	No	FACW	Hydrophytic V	egetation In	dicators	s:	
5					est for Hydro		egetation	
6				X 2 - Domina				
7.				X 3 - Prevale				
8.					logical Adapta	•		
9.					Remarks or or		,	
10	77	=Total Cover			c Hydrophytic	•		,
Woody Vine Stratum (Plot size: 15	\	- Fotal Cover		¹ Indicators of h be present, unl				must
WOODY VIIIE STIATUITI (FIOUSIZE. 13)			be present, uni	ess disturbed	or prob	icilialic.	
1. None				Hydrophytic Vegetation				
		=Total Cover		Hydrophytic Vegetation Present?	Yes X	No		

Depth	Cription: (Describe Matrix	to the dept		ument τ x Featu		ator or (confirm the absence of	or mulcators.)	
(inches)	Color (moist)	<u></u> %	Color (moist)	% realu	Type ¹	Loc ²	Texture	Rema	ırks
0-8	10YR 2/2	100	color (moloc)		. , po		Loamy/Clayey	TOTHE	
	· -		10VP 4/6					Drominant raday	oonoontrations
8-17	10YR 3/1	97	10YR 4/6	3	<u>C</u>	M	Loamy/Clayey	Prominent redox	concentrations
							-	-	
			_						_
¹ Type: C=C	oncentration, D=De	oletion, RM=	Reduced Matrix, I	MS=Mas	ked San	d Grains	s. ² Location:	: PL=Pore Lining, M=	Matrix.
Hydric Soil	Indicators:						Indicator	s for Problematic Hy	/dric Soils³:
Histosol	(A1)		Sandy Gle	yed Mat	trix (S4)		Coas	t Prairie Redox (A16)	
Histic E _l	pipedon (A2)		Sandy Re	dox (S5))		Iron-N	Manganese Masses (l	=12)
Black H	istic (A3)		Stripped N	,	6)			Parent Material (F21)	
	en Sulfide (A4)		Dark Surfa			Shallow Dark Surface	, ,		
	d Layers (A5)		Loamy Mu	-			Other	r (Explain in Remarks)
	uck (A10)		Loamy Gle	•	, ,				
·	d Below Dark Surfac	e (A11)	Depleted I		-		3		
	ark Surface (A12)		X Redox Da		` '			s of hydrophytic vege	
´	Mucky Mineral (S1)	۵)	Depleted I		, ,)		nd hydrology must be	
	ucky Peat or Peat (S	•	Redox De	pression	is (F8)	-	unies	s disturbed or probler	nauc.
	Layer (if observed)	:							
Type:			<u> </u>				Uhadala Oali Dasaasi	10 V	V N-
Depth (i	ncnes):						Hydric Soil Present	:? Yes_	<u> </u>
Remarks:									
LIVEROLO	2CV								
HYDROLO									
_	drology Indicators								
	cators (minimum of	one is require			(50)			ry Indicators (minimun	n of two required)
	Water (A1)		X Water-Sta		` ,			ce Soil Cracks (B6)	
	ater Table (A2)		Aquatic Fa	-	-			age Patterns (B10)	20)
X Saturation	` '		True Aqua		, ,	١	<u> </u>	Season Water Table (J2)
	farks (B1) nt Deposits (B2)		Hydrogen Oxidized F		-			ïsh Burrows (C8) ation Visible on Aeria	I Imagany (CO)
_	posits (B3)		Presence	•		-	· /	ed or Stressed Plants	• • • •
	at or Crust (B4)		Recent Iro			. ,		norphic Position (D2)	(D1)
	posits (B5)		Thin Muck				` '	Neutral Test (D5)	
	on Visible on Aerial	Imagery (B7)					<u></u>	. 1001.0.	
	y Vegetated Concav								
Field Obser		`	, <u> </u>		,				
Surface Wa		es	No X	Depth (i	inches):				
Water Table		es X	No	Depth (_	9			
Saturation F		es X	No		inches):	7	Wetland Hydrolog	gy Present? Yes	X No
(includes ca	pillary fringe)				_			_	
	ecorded Data (stream	n gauge, moi	nitoring well, aeria	l photos	, previou	s insped	ctions), if available:		
Remarks:									

OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a) See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	Street (33.72 a	ac) City/Cou	ınty: <u>Culver/N</u>	larshall County	Sam	າpling Da	te: <u>11-2</u>	9-2022
Applicant/Owner: Culver Equities LLC (deeded own		State:I	N Sam	pling Poi	int:	OP 6		
Investigator(s): R. Newkirk; F. Hoopfer		Section, 1	Γownship, Rar	ige: S1/2; NE1/	4; Sec. 20; T	32N; R1E	Ξ	
Landform (hillside, terrace, etc.): hillslope			Local relief (co	oncave, convex, r	none): none			
Slope (%): 3 Lat: 41.211173			86.429437			n: WGS1	 984	
Soil Map Unit Name: RopB - Riddles-Oshtemo fine sar	ndy loams 1			NWI classification: UPL				
							- \	
Are climatic / hydrologic conditions on the site typical for		-	Yes <u>X</u>	No (If r			•	
Are Vegetation No , Soil No , or Hydrology No s				ircumstances" pre			NO	-
Are Vegetation No , Soil No , or Hydrology No I	naturally pro	blematic? ((If needed, exp	olain any answers	in Remarks.)		
SUMMARY OF FINDINGS - Attach site ma	ap showir	ng samplin	g point loc	ations, trans	ects, impo	ortant f	eatures	, etc.
		Ι						
, , , , , , , , , , , , , , , , , , ,	$\frac{x}{x}$	ı	Sampled Ar		N.	- V		
· —		Within	n a Wetland?	res	N	o_X_		
	<u> </u>							
Remarks: Data point is located in an upland old field in the north	weet auadra	ent of the Proje	act Sita					
Data point is located in an upland old field in the florth	iwesi quadi a	init on the Froje	ou one.					
VECETATION I les scientific nomes et pla								
VEGETATION – Use scientific names of pla	Absolute	Dominant	Indicator					
<u>Tree Stratum</u> (Plot size: 30)	% Cover	Species?	Status	Dominance Te	st workshee	et:		
1. Acer saccharinum	40	Yes	FACW	Number of Dom	ninant Specie	s That		
2. Prunus serotina	25	Yes	FACU	Are OBL, FACV	•		3	(A)
3.				Total Number o	of Dominant S	- Species		-
4.				Across All Strat			6	_(B)
5.				Percent of Dom	ninant Specie	s That		_
	65	=Total Cover		Are OBL, FACV	V, or FAC:	_	50.0%	_(A/B)
Sapling/Shrub Stratum (Plot size: 15)							
1. Elaeagnus umbellata	5	Yes	UPL	Prevalence Inc	dex workshe	et:		
2. Sambucus nigra	3	Yes	<u>FAC</u>	Total % Co	over of:		tiply by:	_
3				OBL species	0	x 1 = _	0	_
4				FACW species		x 2 = _	138	_
5				FAC species	3	x 3 = _	9	_
	8	=Total Cover		FACU species	125	× 4 = _	500	_
Herb Stratum (Plot size: 5	0.5	.,	E4.011	UPL species	10	x 5 = _	50	- (D)
1. Bromus inermis	95	Yes	FACU	Column Totals:		(A) _	697	_(B)
2. Phalaris arundinacea	5	No No	FACU	Prevalence I	ndex = B/A	=	3.37	-
Phytolacca americana Urtica dioica	4	No No	FACU FACW	Hydrophytic V	ogotation In	dicators		
5. Rubus occidentalis	3	No	UPL		est for Hydro			
6. Elaeagnus umbellata	2	No	UPL		nce Test is >		getation	
7. Hackelia virginiana	1	No	FACU		nce Index is:			
0			17100		logical Adapt		Provide sur	pporting
9.					Remarks or o			
10.				Problemation	c Hydrophytic	Vegetat	ion¹ (Expl	ain)
-	114	=Total Cover		¹ Indicators of h		•		,
Woody Vine Stratum (Plot size: 15				be present, unle				muot
1. Vitis riparia	20	Yes	FACW	Hydrophytic				
2.				Vegetation				
	20	=Total Cover		Present?	Yes	No_	<u> </u>	
Remarks: (Include photo numbers here or on a separ	rate sheet.)							
, ,								

Profile Desc Depth	cription: (Describe Matrix	to the depti		ument t x Featui		ator or c	onfirm the absence of	of indicators.)		
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type ¹	Loc ²	Texture	Rema	arks	
0-12	10YR 3/3	100	, ,				Sandy			
12-16	10YR 3/4	97	10YR 4/6	3	С		Sandy	Distinct redox of	oncentrations	
	101110/1	 -	101111110	<u> </u>			<u> </u>	<u> </u>	on contraction to	_
										—
								-		—
										—
										—
17		Latina DM I	De desert Metrics	40. 14	1000		21	DI Dana Linia a M	NA - 4-i	—
Hydric Soil	oncentration, D=Dep	ietion, Rivi=i	Reduced Matrix, i	vi5=ivias	ked San	d Grains		: PL=Pore Lining, M:		
Histosol			Sandy Gle	ved Mat	riy (S4)			t Prairie Redox (A16)	-	
	ipedon (A2)		Sandy Re					Manganese Masses (
Black His			Stripped M					Parent Material (F21)	•	
	n Sulfide (A4)		Dark Surfa	`	- /			Shallow Dark Surface		
_	Layers (A5)		Loamy Mu		eral (F1)		<u> </u>	r (Explain in Remarks	` '	
2 cm Mu			Loamy Gle	-				` .	•	
Depleted	Below Dark Surface	e (A11)	Depleted I	Matrix (F	3)					
Thick Da	rk Surface (A12)		Redox Da	rk Surfac	ce (F6)		³ Indicator	s of hydrophytic vege	tation and	
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)							wetla	nd hydrology must be	e present,	
5 cm Mucky Peat or Peat (S3) Redox Depressions (F8)							unles	s disturbed or proble	matic.	
Restrictive	Layer (if observed):									
Type:			_							
Depth (ir	nches):		<u> </u>				Hydric Soil Present	t? Yes_	No_>	<u> </u>
Remarks:										
HYDROLO	oGY									
	drology Indicators:									
_	cators (minimum of o	ne is require	ed: check all that	apply)			Secondar	y Indicators (minimu	m of two require	ed)
	Water (A1)	no io roquire	Water-Sta		ives (B9))		ce Soil Cracks (B6)	n or two roquire	<u>,u,</u>
	ter Table (A2)		Aquatic Fa		, ,			age Patterns (B10)		
Saturation	` '		True Aqua					Season Water Table (C2)	
	arks (B1)		Hydrogen	Sulfide (Odor (C1)	Crayf	ish Burrows (C8)	•	
Sedimen	t Deposits (B2)		Oxidized F	Rhizosph	eres on	Living Ro	oots (C3) Satur	ation Visible on Aeria	I Imagery (C9)	
Drift Dep	osits (B3)		Presence	of Redu	ced Iron	(C4)	Stunt	ed or Stressed Plants	s (D1)	
Algal Ma	t or Crust (B4)		Recent Iro	n Reduc	tion in Ti	illed Soil	s (C6) Geon	norphic Position (D2)		
. — ·	osits (B5)		Thin Muck		. ,		FAC-	Neutral Test (D5)		
l 	on Visible on Aerial I	0 , (,	<u> </u>							
<u> </u>	Vegetated Concave	Surface (B8	3)Other (Exp	olain in F	Remarks)		_			
Field Obser			N V	D " "						
Surface Wat					nches): _					
Water Table		s			nches):		Wetlend Hydrolog	my Dragont? Voc	No. N	~
Saturation P		s	No <u>X</u>	Depth (i	nches): _		Wetland Hydrolog	gy Present? Yes _	No_>	<u>`</u>
(includes cap	corded Data (stream	dalide mor	nitoring well perio	l nhotos	nreviou	e inenec	tions) if available:			
Describe IVE	ooraca Data (Stiedili	gauge, mor	morning well, aella	יי איוטנטט	, previou	o mapec	uonoj, n avaliabie.			
Remarks:										_

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: <u>The "Dunes" (Project No. 221054)</u> S. Main Sti	reet (33.72 a	ac) City/Cou	ınty: <u>Culver/N</u>	larshall County	Sam	pling Dat	e: <u>11-2</u>	9-2022
Applicant/Owner: Culver Equities LLC (deeded owner)	er)			State:	IN Sam	pling Poir	nt:)P 7
Investigator(s): R. Newkirk; F. Hoopfer		Section, 7	Гownship, Rar	nge: S1/2; NE1	/4; Sec. 20; T	32N; R1E		
Landform (hillside, terrace, etc.): depression			Local relief (c	oncave, convex,	none): conca	/e		
Slope (%):0		Long:	86.426824		Datum	: WGS19	984	
Soil Map Unit Name: HpjmA - Houghton muck, disintegr	ation morai	ine, 0 to 2 per	cent slopes	NW	l classification	: PEM1C	;	
Are climatic / hydrologic conditions on the site typical for	this time o	f year?	Yes X	No (If	no, explain in	Remarks	s.)	
Are Vegetation No , Soil No , or Hydrology No si	gnificantly o	disturbed?	Are "Normal C	ircumstances" pı	esent? Yes	s X	No	
Are Vegetation No , Soil No , or Hydrology No na	aturally prof	blematic? (If needed, exp	olain any answer	s in Remarks.)		_
SUMMARY OF FINDINGS – Attach site ma			,	•			eatures	etc.
Johnny III of This Jivoo Tillian on o ma		<u> </u>	g point loc	- ationo, train			Juliu OO	
Hydrophytic Vegetation Present? Yes X No		1	Sampled Ar					
		withi	n a Wetland?	Yes	<u> </u>	·—		
Wetland Hydrology Present? Yes X No								
Remarks: Data point is located in the northwestern quadrant of W	/etland R a	n emergent w	etland that ev	tends offsite to th	ne north			
Data point is located in the northwestern quadrant of w	elialid D, a	ii eilleigelit w	eliand that ex	terius offsite to ti	ie nordi.			
VEGETATION – Use scientific names of plan	ıts							
TECETATION COC CONTINUE HARMON OF PICAL	Absolute	Dominant	Indicator					
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance T	est workshee	t:		
1. Salix nigra	30	Yes	OBL	Number of Do	•	s That		
2.				Are OBL, FAC		_	3	_ ^(A)
3				Total Number Across All Stra		pecies	3	(B)
5				Percent of Dor		- That		- ^(D)
·	30	=Total Cover		Are OBL, FAC		5 Illat	100.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15)				·	•	_		- ` ′
1. None				Prevalence In	dex workshe	et:		
2				Total % C			iply by:	_
3				OBL species	30	x 1 = _	30	_
4				FACW species	s <u>91</u> 5	x 2 =	182 15	-
5		=Total Cover		FAC species FACU species		x 4 =	0	-
Herb Stratum (Plot size: 5)		rotal covol		UPL species	0	x 5 =	0	-
1. Phalaris arundinacea	90	Yes	FACW	Column Totals	: 126	(A) _	227	(B)
2. Urtica dioica	1	No	FACW	Prevalence	Index = B/A	= <u> </u>	1.80	_
3								
4				Hydrophytic \	_			
5					Test for Hydro		getation	
6 7.				X 2 - Domina				
<u> </u>					ological Adapt		rovide su	oporting
9.					Remarks or or			
10.				Problemat	ic Hydrophytic	: Vegetati	on ¹ (Expla	ain)
	91	=Total Cover		1Indicators of h		•	, ,	,
Woody Vine Stratum (Plot size: 15)				be present, un				
1. Toxicodendron radicans	5	Yes	FAC_	Hydrophytic				
2	5	-Total Cavar		Vegetation	Voc. V	N.		
		=Total Cover		Present?	Yes <u>X</u>	No_		
Remarks: (Include photo numbers here or on a separa	te sheet.)							

		e to the dep				ator or o	confirm the absence o	of indicators.)		
Depth	Matrix			ox Featu		. 2	_			
(inches)	Color (moist)		Color (moist)		Type ¹	Loc ²	Texture	Remarks		
0-9	10YR 3/1	95	10YR 5/8	5	<u> </u>	M	Loamy/Clayey	Prominent redox concentrations		
9-18	10YR 4/1	95	10YR 4/6	5	<u>C</u>	M	Loamy/Clayey	Prominent redox concentrations		
l										
l										
1Type: C=C	oncentration, D=De	nletion RM	-Reduced Matrix	MS-Mas	ked San		² l ocation:	PL=Pore Lining, M=Matrix.		
Hydric Soil		Spiction, raivi-	-reduced Matrix,	WO-Was	sked Cark	Jordina	Indicator	s for Problematic Hydric Soils ³ :		
Histosol			Sandy Gl	eyed Mat	trix (S4)			t Prairie Redox (A16)		
	oipedon (A2)		Sandy Re					Manganese Masses (F12)		
Black Hi	stic (A3)		Stripped I	Matrix (S	6)		Red F	Parent Material (F21)		
Hydroge	n Sulfide (A4)		Dark Surf	ace (S7)			Very S	Shallow Dark Surface (F22)		
	d Layers (A5)		Loamy M	ucky Min	eral (F1)		Other	(Explain in Remarks)		
	ıck (A10)		Loamy Gl	-	. ,					
	d Below Dark Surfa	ce (A11)	X Depleted	-	-		2			
_	ark Surface (A12)		X Redox Da		. ,		³ Indicators of hydrophytic vegetation and			
I — '	lucky Mineral (S1)	20)	Depleted ? Redox De		, ,)		nd hydrology must be present,		
	cky Peat or Peat (<u> </u>	? Redox De	epression	is (F8)		unies	s disturbed or problematic.		
	Layer (if observed	l):								
Type:							Undeia Cail Decame	2 Yes Y No		
Depth (ir Remarks:	ncnes):						Hydric Soil Present	? Yes X No		
HYDROLO)GY									
Wetland Hy	drology Indicators	s:								
l — -	cators (minimum of	one is requi						y Indicators (minimum of two required)		
l ——	Water (A1)		Water-Sta		, ,		Surface Soil Cracks (B6)			
	iter Table (A2)		Aquatic F	•	,			age Patterns (B10)		
X Saturation			True Aqua			١		eason Water Table (C2)		
l —	arks (B1) nt Deposits (B2)		Hydrogen Oxidized					ish Burrows (C8) ation Visible on Aerial Imagery (C9)		
_	posits (B3)		Presence	•		•	` '	ed or Stressed Plants (D1)		
I —	at or Crust (B4)		Recent Ire		`	,		norphic Position (D2)		
	oosits (B5)		Thin Muc				· / —	Neutral Test (D5)		
I — ·	on Visible on Aerial	Imagery (B7			. ,			(- /		
Sparsely	Vegetated Conca	ve Surface (E	38) Other (Ex	plain in F	Remarks)					
Field Obser	vations:									
Surface Wat	er Present?	/es	No X	Depth (inches):					
Water Table	Water Table Present? Yes X No Depth (inches): 2				2					
Saturation Present? Yes X No Depth (inches): 0				0	Wetland Hydrolog	y Present? Yes X No				
	pillary fringe)						1			
Describe Re	corded Data (strea	m gauge, mo	onitoring well, aeri	al photos	s, previou	s inspec	tions), if available:			
Remarks:										

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main S	Street (33.72 a	ac) City/Cou	nty: Culver/M	larshall County	Sampling	g Date:	11-29	-2022
Applicant/Owner: Culver Equities LLC (deeded own	ner)			State: IN	Sampling	Point:	DI	P 8
Investigator(s): R. Newkirk; F. Hoopfer		Section, T	ownship, Ran	ige: S1/2; NE1/4;	— Sec. 20; T32N;	R1E		
Landform (hillside, terrace, etc.): hillside			Local relief (co	oncave, convex, non	e): convex			
Slope (%): 8 Lat: 41.210978		Long: -	86.426700		Datum: W	GS1984		
Soil Map Unit Name: RopC2 - Riddles-Metea complex	, 5 to 10 perc	— °-		NWI cla	 ssification: UF			
Are climatic / hydrologic conditions on the site typical fo	-	-	Yes X	 No (If no,				
Are Vegetation No , Soil No , or Hydrology No :		-		ircumstances" prese				
Are Vegetation No , Soil No , or Hydrology No				olain any answers in				•
SUMMARY OF FINDINGS – Attach site ma			·	•	,	nt featı	ures,	etc.
Hydrophytic Vegetation Present? Yes No	» X	ls the	Sampled Are	22				
	$\frac{X}{X}$	l l	n a Wetland?		No_>	(
	$\frac{X}{X}$					<u> </u>		
Remarks:		I						
Data point is located on a forested upland ridge appro	ximately 25	feet south of V	Vetland B.					
VEGETATION – Use scientific names of pla	nts.							
	Absolute	Dominant	Indicator					
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test				
1. Acer saccharinum	60	Yes	FACW	Number of Domina	•		•	(4)
2. Prunus serotina	35	Yes	FACU	Are OBL, FACW,			2	.(A)
3. Quercus rubra	10	No No	FACU	Total Number of D	ominant Speci		7	(D)
4. Juniperus virginiana 5.	10	<u>No</u>	FACU	Across All Strata:			7	.(B)
J	115	=Total Cover		Percent of Domina Are OBL, FACW,	•		.6%	(A/B)
Sapling/Shrub Stratum (Plot size: 15	113	- Total Covel		Ale OBE, I ACVV,	oi i AO.		.0 70	.(٨,٢)
Elaeagnus umbellata	, 8	Yes	UPL	Prevalence Index	workshoot			
2.		163		Total % Cove		Multiply	bv.	
3				OBL species	0 x 1		0	•
4.				FACW species	60 x 2		20	
5.				FAC species	5 x 3	i = 1	15	•
	8	=Total Cover		FACU species	61 x 4	= 2	44	
Herb Stratum (Plot size: 5)				UPL species	22 x 5	5 = 1	10	
Elaeagnus umbellata	10	Yes	UPL	Column Totals:	148 (A)	4	89	(B)
2. Ligustrum vulgare	5	Yes	FACU	Prevalence Ind	ex = B/A =	3.30		
3. Geum canadense	5	Yes	FAC					
4. Lonicera maackii	4	No	UPL	Hydrophytic Veg				
5. Phytolacca americana	1	No	FACU		for Hydrophyt	-	ation	
6					e Test is >50%			
7					e Index is ≤3.0¹	1		
8.					ical Adaptation	•		porting
9.					narks or on a s		,	
10	25	-Total Cavar			ydrophytic Veg			•
Woody Vino Stratum (Diet size: 45	25:	=Total Cover		¹ Indicators of hydr				must
Woody Vine Stratum (Plot size: 15) 5	Yes	}	be present, unless	usurbea or p	ropiemat	iiC.	
1. Vitis riparia		162		Hydrophytic				
2				Vanatatian				
2.	5	=Total Cover		Vegetation Present? Y	es I	No X		

Depth	cription: (Describ Matrix	e to the depth		ument ti ox Featur		ator or o	confirm the absen	ce of indicators	5.)	
(inches)	Color (moist)	 _	Color (moist)	% «	Type ¹	Loc ²	Texture		Remarks	
0-4	10YR 3/3	100	,				Sandy			
4-20	10YR 5/6	100					Sandy	_		
- + 20	10111 0/0	_ 100 _					Canay			
	-						-			
								_		
	oncentration, D=De	pletion, RM=F	Reduced Matrix,	MS=Mas	ked San	d Grains		tion: PL=Pore L		•
Hydric Soil								ators for Proble	-	Soils ³ :
Histosol			Sandy Gle	-	, ,			oast Prairie Red		
	oipedon (A2)		Sandy Re					on-Manganese N		
Black Hi	` '		Stripped N	`	3)			ed Parent Mater	. ,	
	n Sulfide (A4)		Dark Surfa		. (54)			ery Shallow Darl	•)
	d Layers (A5)		Loamy Mu	-			0	ther (Explain in	Remarks)	
	ick (A10)	00 (011)	Loamy Gl	-						
	d Below Dark Surfa ark Surface (A12)	ce (ATT)	— Depleted Redox Da				³ India	ators of hydroph	utio vogototion	and
	fucky Mineral (S1)		Depleted		` '	`		etland hydrology		
	icky Peat or Peat (\$	33)	Redox De		,	,		nless disturbed o		511L,
				prossion	3 (1 0)	1		ness distarbed t	or problematio.	
_	Layer (if observed	ı):								
Type: Depth (ii	nches).		_				Hydric Soil Pres	eant?	Yes	No_X
			_				Tryunc con ries			<u> </u>
Remarks:										
HYDROLO	OGY									
	drology Indicators	•								
_	cators (minimum of		ed: check all that	annly)			Secon	ndary Indicators	(minimum of tw	vo required)
-	Water (A1)	One is require	Water-Sta		ves (B9)			urface Soil Crac	-	vo reguirea,
	iter Table (A2)		Aquatic Fa		` '	'		rainage Patterns		
Saturation	` '		True Aqua					ry-Season Wate	` ,	
— Water M	arks (B1)		Hydrogen	Sulfide (Odor (C1)	— _C	rayfish Burrows	(C8)	
Sedimer	nt Deposits (B2)		Oxidized I		-	-		aturation Visible		gery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ced Iron	(C4)	S	tunted or Stress	ed Plants (D1)	
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in T	illed Soil	s (C6) G	eomorphic Posit	tion (D2)	
Iron Dep	osits (B5)		Thin Mucl	Thin Muck Surface (C7)				AC-Neutral Test	(D5)	
Inundation	on Visible on Aerial	Imagery (B7)	Gauge or	Well Dat	a (D9)					
Sparsely	Vegetated Conca	e Surface (B8	3) Other (Ex	plain in F	Remarks))				
Field Obser	vations:									
Surface Wat	er Present?	′es	No X	Depth (i	nches): _					
Water Table	Present?	es	No X	Depth (i	nches):					
Saturation Present? Yes No X Depth (inches):				Wetland Hydrology Present? Yes No _X						
(includes ca	pillary fringe)									
Describe Re	corded Data (strea	m gauge, mon	nitoring well, aeria	al photos	, previou	s inspec	ctions), if available:			
Remarks:										
Remarks.										

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Project/Site: The "Dunes" (Project No. 221054) S. Main Street (33.7	72 ac) City/County: Culve	r/Marshall County	Sampling Date: _1	11-29-2022
Applicant/Owner: Culver Equities LLC (deeded owner)		State: IN	Sampling Point:	DP 9
Investigator(s): R. Newkirk; F. Hoopfer	Section, Township, F	Range: S1/2; NE1/4; Sec	. 20; T32N; R1E	
Landform (hillside, terrace, etc.): depression	 Local relief	(concave, convex, none):	concave	
Slope (%): 0 Lat: 41.210365	Long: -86.425547	,	Datum: WGS1984	
Soil Map Unit Name: TxuA - Tyner loamy sand, 0 to 1 percent sl			fication: UPL	
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes X	No (If no, ex	olain in Remarks)	
Are Vegetation No , Soil No , or Hydrology No significant		I Circumstances" present?		
Are Vegetation No , Soil No , or Hydrology No naturally p		explain any answers in Re		
SUMMARY OF FINDINGS – Attach site map show			•	res, etc.
Hydrophytic Vegetation Present? Yes No X	Is the Sampled	 Δrea		
Hydric Soil Present? Yes No X	within a Wetlan		No X	
Wetland Hydrology Present? Yes No X			<u> </u>	
Remarks:				
Data point is located in an elongated upland area flanked on its	two long sides by tilled agri	cultural fields.		
VEGETATION – Use scientific names of plants.				
Absolut <u>Tree Stratum</u> (Plot size: 30) % Cove		Dominance Test wo	rkshoot:	
Juniperus virginiana	FACU	Number of Dominant		
Quercus rubra	FACU	Are OBL, FACW, or F	•	(A)
3. Populus deltoides	FAC	Total Number of Dom		(, ,
4.		Across All Strata:	штатт орестез	(B)
5.		Percent of Dominant	Species That	``
	=Total Cover	Are OBL, FACW, or F	•	(A/B)
Sapling/Shrub Stratum (Plot size: 15)	_			
1. Elaeagnus umbellata	UPL	Prevalence Index wo	orksheet:	
2. Lonicera maackii	UPL	Total % Cover of	f: Multiply by	y:
3.		OBL species	x 1 =	
4.		FACW species	x 2 =	
5		FAC species	x 3 =	
	=Total Cover	FACU species	x 4 =	
Herb Stratum (Plot size: 5)		UPL species	x 5 =	
1. Urtica dioica	FACW	Column Totals:	(A)	(B)
2. Bidens frondosa	FACW	. Prevalence Index	= B/A =	
3. Bromus inermis	FACU			
4. Athyrium filix-femina	UPL	Hydrophytic Vegeta	tion Indicators:	
5. Hesperis matronalis	FACU	· —	Hydrophytic Vegetati	on
6. Lonicera maackii	UPL	2 - Dominance Te		
7		. 3 - Prevalence In		
8			Adaptations ¹ (Provide	
9		•	ks or on a separate sh	,
10	-Tatal Cauca	· —	ophytic Vegetation ¹ (E	
Mondy Vina Stratum (Diet eizer 15	=Total Cover	¹ Indicators of hydric s		
Woody Vine Stratum (Plot size:15) 1. Toxicodendron radicans	EAC	·	sturbed or problematic	•
2.	FAC	. Hydrophytic		
<u></u>	- 	Vegetation Present? Yes	No _X_	
	=Total Cover			

Profile Desc Depth	cription: (Describe Matrix	to the depth		cument tl ox Featur		ator or c	confirm the absence	of indicators.)		
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks		
0-4	10YR 3/3	100			- 7		Sandy				
4-20	10YR 5/6	100					Sandy				
	10111 0/0	100					Carray				
		· — —									—
		· — —									
1											
	oncentration, D=Dep	letion, RM=R	educed Matrix,	MS=Mas	ked San	d Grains		: PL=Pore Lir			
Hydric Soil Histosol			Sandy Cl	avad Mat	riv (S1)			r s for Problen st Prairie Redo	-	Solis":	
	vipedon (A2)		Sandy Gl		1X (34)			Manganese M			
Black Hi			Stripped		3)			Parent Materia			
	n Sulfide (A4)		Dark Sur	`	,,			Shallow Dark		')	
	Layers (A5)		Loamy M		eral (F1)			r (Explain in R	-	')	
2 cm Mu			Loamy G	-				. (=/			
	l Below Dark Surfac	e (A11)	Depleted	-	. ,						
	rk Surface (A12)	,		ark Surfac			³ Indicato	rs of hydrophy	tic vegetation	and	
	lucky Mineral (S1)		— Depleted	Dark Sur	face (F7)		and hydrology	_		
	cky Peat or Peat (S	3)		epression		,		ss disturbed or			
Restrictive	Layer (if observed)	:									
Туре:			_								
Depth (ir	nches):		_				Hydric Soil Presen	t?	Yes	No_	Х
Remarks:			_							_	
HYDROLO	GY										
Wetland Hy	drology Indicators:										
Primary India	cators (minimum of o	ne is required	d; check all that	apply)			<u>Seconda</u>	ry Indicators (r	minimum of ty	vo requi	ired)
	Water (A1)		Water-Sta	ained Lea	ves (B9))	Surface Soil Cracks (B6)				
_	ter Table (A2)			auna (B1	•			nage Patterns			
Saturatio				atic Plant				Season Water			
	arks (B1)		Hydroger					fish Burrows (-	(0.0	٠,
_	t Deposits (B2)			Rhizosph				ration Visible o))
	osits (B3) t or Crust (B4)		Presence Recent Ir			, ,		ted or Stresse morphic Positio			
	osits (B5)		Thin Muc			illeu Soli	` ' —	-Neutral Test (
	on Visible on Aerial I	magery (B7)	Gauge or		` '			-Neutral Test (D3)		
	Vegetated Concave	3 , , ,	<u> </u>		, ,)					
Field Obser			<u> </u>	<u> </u>							
Surface Wat		es	No X	Depth (i	nches):						
Water Table		es	No X	Depth (i	_						
Saturation P	Saturation Present? Yes No X Depth (inches):					Wetland Hydrology Present? Yes No X				Χ	
(includes ca	oillary fringe)										
Describe Re	corded Data (stream	gauge, moni	toring well, aeri	al photos	, previou	is inspec	tions), if available:				
Remarks:											
I											

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