Wetland Delineation Report

912 Tesch Court
City of Waukesha
Waukesha County, Wisconsin

Prepared By:

Cedar Corporation
1695 Bellevue Street
Green Bay, WI 54311

July 24, 2019

Project Number: 06235-0001

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July 24, 2019

Steve Kolar, P.E.
Engineering and General Contracting
Payne & Dolan, Inc.
W6380 Design Drive
Greenville, WI 54942

SUBJECT: Wetland Delineation for the North ½ of 912 Tesch Court
City of Waukesha, Waukesha County, Wisconsin

Dear Mr. Kolar:

Cedar Corporation performed a wetland delineation on the OSI Environmental, Inc. Property located at 912 Tesch Court in the City of Waukesha, in Sections 1 and 2, T6N, R19E, Waukesha County, Wisconsin (Appendix A: Project Location Map – USGS 7.5' Quadrangle Map), referred to as the property for the purposes of this report. The purpose of this delineation was to identify wetland resources located on the property for expansion of a parking lot.

The total project area is 1.44 acres (Appendix B: Surveyed Wetland Boundary). The property is generally located north of Arcadian Drive and west of Tesch Court. The project area consists of a vacant lot. The site had extensive filling with the exception of the area associated with the pond. A berm was located along the west property line that divided the property from the Coach USA site. The area between the pond and Tesch Court had significant amounts of fill. The fill does not appear to be recent. Wetlands were identified in association with a drainage swale and pond on site. It appears the pond is being used for storm water retention. There is an 8-inch diameter discharge pipe located at the start of the swale near the parking lot. Storm water from the parking lot and building are channeled to the pond. The surrounding land use is industrial to the north, commercial to the south and west, and multifamily residential to the east. Additional information on site conditions can be found in the Site Description.

Stacy E. Jepson, C.S.T., WDNR Assured Wetland Delineator with Cedar Corporation, was the lead delineator and report author for this project. During the field investigation completed on July 3, 2019, the weather conditions at the property were mostly sunny and +/- 80°F. At the time of the site investigation, rainfall amounts were approximately 0.04 inches above normal amounts for the month of July and 0.52 inches above normal for June, with rainfall amounts being normal for the 2019 growing season in the area of the property. Based upon results of the wetland delineation, the site contains one area of wetland resource. The onsite wetland area consists of 0.17 acres (7,308 sq. ft.). Additional information on site conditions can be found in the Site Reconnaissance Section.

DELINEATION METHODOLOGY

The evaluation criteria used were based on the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* and the *Basic Guide to Wisconsin's Wetlands and Their Boundaries* (Wisconsin Department of Administration Coastal Management Program).

The U. S. Army Corps of Engineers and U.S. Environmental Protection Agency define a wetland as:

> "*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."*

According to the definition defined by Wisconsin State Legislature, a wetland is:

> *"An area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions."*

Methodology used to determine the wetland boundary followed those described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* and the *Basic Guide to Wisconsin's Wetlands and Their Boundaries* (Wisconsin Department of Administration). More specifically, sample plots taken along transects established between different habitat types were used to determine whether areas had hydric soil, hydrophytic vegetation, and/or wetland hydrology. The transects were arranged perpendicular to the wetland boundary. Herbaceous vegetation was evaluated from the location of the soil plot at a 5-foot radius, sapling/shrubs at 15-foot radius, and trees and vines at a 30-foot radius. Soils at each plot location were evaluated based on the United States Department of Agriculture (USDA) Natural Resource Conservation Services' *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.2, 2018.* Borings that had indication of potential groundwater levels were left open for a period of no less than 30 minutes to allow for recharge and determination of water levels. Using this data, Cedar Corporation Staff determined if wetland resources were present on site. The transects and wetland extents were located using survey grade equipment and were mapped with County coordinates. The Northcentral/Northeast Region Supplement Wetland Determination Data Forms are displayed in Appendix J: Wetland Determination Data Forms – Northcentral & Northeast Region.

According to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*, it is important to evaluate wetlands during the growing season in order to accurately characterize the hydrology of the site as well as the species composition. The growing season has begun on a site in a given year when two or more different non-evergreen vascular plant species growing in the wetland or surrounding areas exhibit one or more of the following indicators of biological activity: Emergence of herbaceous plants from the ground; Appearance of new growth from

vegetative crowns; Coleoptile/cotyledon emergence from the seed; Bud burst on woody plants; Emergence or elongation of leaves of woody plants; or Emergence or opening of flowers. The growing season is over when the woody deciduous species lose their leaves, or the last herbaceous species ceases flowering.

Prior to conducting the site visit, Cedar Corporation Staff conducted research to aide in identifying potential wetland communities that may exist on site, and reviewed climate and hydrologic data to help explain conclusions that were made during the field investigation. This research involved examining the 7.5 Minute United States Geological Survey (USGS) Quadrangle, County Topography Map from Waukesha County Geographic Information Service (GIS), Wisconsin Department of Natural Resources (WDNR) Digital Wetland Inventory Map, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Map, Bordner Survey, aerials, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, "Custom Soil Resource Report for Milwaukee and Waukesha Counties", the National Weather Service Milwaukee Climate Report, USGS WaterWatch, Waukesha WETS table, and the US Drought Monitor.

Research mapping can be found in the Appendices at the end of this report. All site extent boundaries identified on research mapping are approximate. Aerials are not tied to County coordinates and are therefore approximate.

DELINEATION RESULTS

SITE DESCRIPTION

The project area is 1.44 acres (Appendix B) and is surrounded by a mixed use of commercial, industrial, and residential land. The project area consists of vacant land with a pond in the northwest corner. With the exception of the pond and swale area that were identified as wetlands, the remainder of the project extent contains extensive fill, likely 10 to 15 feet of material is located on site. There were exposed concrete pieces at the surface and on the side slope to the pond/wetland area. According to aerial photography, the property was filled around the 1980s. Tesch Court was installed around 2000. Topography of the property was crowned with the fill placement on site. For a more detailed description of these communities, please refer to the Delineation Results Section of this document, or Appendix J: Wetland Determination Data Forms – Northcentral & Northeast Region.

The subject property did not appear to have any recent agricultural history. It appeared the last agricultural history was potentially in 1970, prior to the filling of the property around the 1980 aerial. The entire area appears to be under extensive fill. Due to the lack of agricultural history, a full Farm Service Agency (FSA) aerial screen was not completed. The pond area within the northwest corner of the property was observable in the more recent aerial photography. The aerial screen can be reviewed in Appendix I: Aerial Photographs.

According to the soils report, the project area is comprised of very poorly-drained Houghton muck (HtA). Houghton soils formed in depressions in loess over loamy till with slopes ranging from 0 to 2 percent. Depth to the water table is about 0 to 20 inches, with the capacity of the most limiting layer to transmit water being moderately low to moderately high.

According to *All Components List for Hydric Soils*, Houghton soils are classified as hydric. Additional information on the soils located at the property can be found in "Custom Soil Resource Report for Milwaukee and Waukesha Counties," Appendix F.

The Bordner Survey indicated the property was mapped as historically located on the edge of the City of Waukesha and near cropland in 1933-1945. See Appendix H: Bordner Survey.

According to the Milwaukee, WI National Weather Service Station, rainfall for the month of July was approximately 0.04 inches above the normal amounts of precipitation at the time of the site visit on July 3, 2019. Cumulative precipitation since April was 3.69 inches above expected amounts. According to sources, the area was experiencing normal conditions. The USDA's online "Drought Monitor" verified that the area was experiencing normal conditions on July 2, 2019 (this is the last day updated prior to the site visit). The USGS WaterWatch Stream Flow Maps indicated streams in the area were at *above normal* to *much above normal* levels on July 3, 2019. According to the Direct Antecedent Rainfall Method using the WETS Table for Waukesha, the area's rainfall received during the prior three-month period was determined to be normal, as shown in Table 1.

TABLE 1 – DIRECT ANTECEDENT RAINFALL

Prior Month		WETS Rainfall Percentile		Measured Rainfall	Condition: Dry, Wet, Normal	Condition Value	Month Weight	Weighted Value
	Name	30th	70th			(1=dry, 2=normal 3=wet)		
		******* inches*******						
1st (most recent)	June	2.96	5.32	4.12	Normal	2	3	6
2nd	May	2.56	4.33	5.51	Wet	3	2	6
3rd	April	2.63	4.22	2.95	Normal	2	1	2
							Sum	**14**
Rainfall of prior period was: Drier than normal (sum is 6-9), Normal (sum is 10-14), Wetter than normal (sum is 15-								Normal

The WDNR Wetland Map (Appendix C) indicates there were no wetland areas mapped for the property, with the exception of an excavated pond. The entire property contained wetland indicator soils, consisting of very poorly drained Houghton muck. The U.S. Fish and Wildlife Service National Wetland Inventory Map (Appendix D) illustrated the pond on site as PUBHx, a manmade pond part of the Palustrine System that remains permanently flooded.

The USGS Map indicates the property is located within a very gently rolling landscape overall (2-5% slopes). The property has a crowned area in the central portion of the property and drops off to the swale along the southern boundary and the pond in the northwest corner. Overall, the

property's elevation ranges from 840 to 856 feet above mean sea level (msl), according to the 1-foot Waukesha County Contour Map (Appendix E).

According to the FEMA Flood Insurance Rate Map (Appendix G), the property is mapped as Zone X: Areas of minimal flood hazard.

SITE RECONNAISSANCE

During the field investigation, Cedar Corporation Staff evaluated the property for wetland resources. The evaluation indicated that wetlands were associated with a swale that conveyed storm water from the parking lot to the pond in the northwest corner. There was an 8-inch diameter discharge pipe, which extends from the building to the swale for discharge of storm water. Wetlands were also associated with the pond area. It appeared that this area was at a native landscape elevation in comparison with the surrounding filled areas. Surface water was present within the pond area and is likely persistent. A site summary is described below. Refer to Appendix B: Surveyed Wetland Boundary for plot designations and locations.

Wetland Areas

The wetland area is an emergent/forest wetland type associated with an open water pond. It appeared that the fringe of the pond was native landscape and likely matched the Houghton muck soil mapping. A swale connects the parking area to the pond and appears to be a storm water conveyance feature.

Vegetation

Herbaceous vegetation around the pond was dominated by Rice Cutgrass (*Leersia oryzoides*) and Tussock Sedge (*Carex stricta*), with a shrub layer of Common Buckthorn (*Rhamnus cathartica*), Red Osier Dogwood (*Cornus alba*) and Eastern Cottonwood (*Populus deltoides*) saplings. The canopy contained Black Willow (*Salix nigra*), Eastern Cottonwood, and Green Ash (*Fraxinus pennsylvanica*). The swale area was primarily dominated by Reed Canary Grass (*Phalaris arundinacea)* and Giant Goldenrod (*Solidago gigantea*). The canopy species in this area consisted of Box-Elder (*Acer negundo*) and Quaking Aspen (*Populus tremuloides*).

Soils

Soils within the wetland areas met the F3: Depleted Matrix (Plot 1-1), A11: Depleted Below Dark Surface (Plot 1-1) and/or F6: Redox Dark Surface (Plot 2-1) hydric soil indicators, according to the USDA *Field Indicators of Hydric Soils in the United States, Version 8.2*.

Hydrology

The wetland area appears to have two separate water regimes. The swale appears to have a temporarily flooded water regime, which is flooded for brief periods, usually early in the growing season or after heavy rain events, and the water table is usually well below the surface (Tiner 1998). The wetland area around the pond is likely seasonally flooded, which is flooded

for extended periods throughout the growing season (Tiner 1998). Surface water was present in parts of the swale and within the pond. Sample plots met the High Water Table (A2) and Saturation (A3) primary indicators and the secondary indicators of Geomorphic Position (D2) and FAC-Neutral Test (D5).

Uplands

The upland areas were located on significant amounts of fill. These areas have not been maintained. Vegetation within this area was dominated by Kentucky Bluegrass (*Poa pratensis*), Reed Canary Grass (*Phalaris arundinacea*), Purple Vetch (*Vicia americana*), Canada Goldenrod (*Solidago canadensis*), Garlic Mustard (*Alliaria petiolate*), and Giant Goldenrod (*Solidago gigantea*). Soils within these areas contained mixing, a common characteristic of fill. There was concrete located along the side slope as well as through the upland areas.

CONCLUSION

The area of concern is a 1.44-acre vacant area north of the OSI Environmental, Inc. building. Areas of wetland resources were documented within a swale and associated with a pond. One wetland area was identified on the site, totaling 0.17 acres (7,308 square feet). The swale carries water from an 8-inch discharge pipe off the building and storm water off the parking lot to the pond. The upland areas adjoining the wetlands climbed fast and consisted of substantial amounts of fill. Based on hydrologic data and site conditions, hydrology on site appeared to be normal at the time of the site visit.

The U. S. Army Corps of Engineers and Wisconsin Department of Natural Resources have jurisdiction over wetlands on the property. The wetland delineation by Cedar Corporation was determined based on the mapping and site conditions present at the time of the evaluation. It should be noted that the final authority for jurisdiction of the wetland boundaries rests with the appropriate agencies. As a result, there may be adjustments to boundary locations or determinations based on review by the appropriate agencies at any time. Therefore, any proposed activity in or adjacent to the wetlands would require permitting from both the U.S. Army Corps of Engineers and the WDNR, as well as any permits required from local municipalities (Waukesha County or City of Waukesha). Stacy E. Jepson, C.S.T., a WDNR Assured Wetland Delineator, was the lead field delineator and report author. Delineations completed by Assured Delineators receive automatic WDNR concurrence for the project for the purposes of State of Wisconsin permits and State-mandated local programs. The WDNR Concurrence Letter is attached in Appendix L.

Respectfully submitted,

CEDAR CORPORATION

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Landon Lucht
Environmental Technician II
landon.lucht@cedarcorp.com

REFERENCES

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Flood Insurance Rate Map, Map Number 55133C0214G, Waukesha County, WI and Incorporated Areas, Effective Date: November 5, 2014.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.

NRCS. 2018. "Custom Soil Resource Report for Milwaukee and Waukesha Counties, Wisconsin". USDA National Cooperative Soil Survey in cooperation with United States Department of Agriculture and other Federal Agencies. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, Version 14, September 12, 2018.

NWS. 2019. Climate Report – National Weather Service Milwaukee. http://www.weather.gov/climate/index.php?wfo=grb. Last accessed July 2019.

Tiner, R.W. 1998. In Search of Swampland. Rutgers University Press, New Brunwick, NJ, USA.

Tiner, R.W. 1999. Wetland Indictors – A Guide to Wetland Identification, Delineation, and Mapping. Lewis Publishers, New York, NY, USA.

University of Wisconsin State Herbarium. Checklist of the Vascular Plants of Wisconsin. http://www.botany.wisc.edu/wisflora/. Last accessed July 2019.

University of Wisconsin Digital Collections Center, Wisconsin Land Economic Inventory Maps (Bordner Survey), Madison, WI, Last accessed 2019.

USACE. Public Notice 96-01078SDE - Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers. 1996. US Army Corps of Engineers St. Paul District, St. Paul, MN, USA.

USACE. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0. 2012. US Army Engineer Research and Development Center, Vicksburg, MS, USA.

U.S. Fish and Wildlife Service, National Wetlands Inventory, Last accessed 2019.

USDA, NRCS. 2018. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.2. L.M. Vasilas and G.W. Hurt (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

USDA. 2019. US Drought Monitor – Wisconsin. http://www.drought.unl.edu/dm/DM_state.htm?WI,MW. Last accessed July 2019.

USDA, NRCS and National Water and Climate Center. 2019. WETS Table.

United States Geological Survey, 2018, USGS Quadrangle, Wisconsin, Waukesha 7.5-Minute Series Topographic Map.

United States Geological Survey, WaterWatch streamflow maps, July 2019.

Wisconsin Department of Administration. Basic Guide to Wisconsin's Wetlands and Their Boundaries. 1995. Madison, WI, USA.

Wisconsin Department of Natural Resources, Wisconsin Wetlands Inventory Map for T6N, R19E, Waukesha County, http://dnrmaps.wi.gov/sl/?Viewer=SWDV.

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Stacy E. Jepson, C.S.T.
Environmental Project Manager
WDNR Assured Wetland Delineator

Ms. Jepson's responsibilities include conducting Wetland Delineations and Functional Values Assessments, writing Wetland Delineation Reports, preparing Wetland General and Individual Fill Permits, Infiltration Testing, and conducting Environmental Site Assessments.

Experience
Wetland Delineations/Permitting
Functional Values Assessments
Environmental Site Assessments (Phase I– II)
Groundwater Monitoring
Soil Infiltration Analysis

Education
Saint Norbert College, Environmental Science, BS (2005)

Continuing Education
Northeast Technical College Soil Tester Certified Class (2005)
ACOE Wetland Delineation & Management Training (2005)
Wisconsin Wetlands Association Wetland Plant Identification Course (2005)
Navigating Wisconsin's New Water Law Workshop (2005)
Critical Methods in Wetland Delineation (2006, 2010, 2016–2019)
ASTM Phase I and II Environmental Site Assessments (2006)
Basic Wetland Delineation Training (2006)
Basic Hydric Soils Identification Training (2008)
Advanced Wetland Delineation Training (2008)
Turf and Landscape Pesticide Applicator Training (2010)
Due Diligence at Dawn Workshop (2012)
Basic Plant Identification for Wetland Delineation, UW-La Crosse (2013)
Grasses, Sedges and Rushes Training, UW-La Crosse (2016)
Plant Identification for Wetland Delineators, Wisconsin Wetlands Training Institute (2017)

Professional Registration and Award:
State of Wisconsin Certified Soil Tester – Credential #1072992
Wisconsin Wetlands Association Member
WDNR Assured Wetland Delineator
Act 183 Wetland Study Council Member

APPENDIX A

Project Location Map – USGS 7.5’ Quadrangle Map

LEGEND

WAUKESHA, WI
USGS TOPOGRAPHIC QUADRANGLE
7.5 MINUTE SERIES, 2018

CONTOUR INTERVAL = 10'
PART SECTION 1 AND 2,
TOWNSHIP 6 N, RANGE 19 E,
WAUKESHA COUNTY, WI

Cedar corporation
1695 Bellevue Street
Green Bay, WI 54311-4251
engineering | architecture | environmental | surveying
landscape architecture | planning | economic development

SOURCE	SITE LOCATION MAP	DRAWN BY
USGS	912 TESCH COURT WAUKESHA, WI	S. Jepson
DATE		JOB NO.
7/2/2019		6235-001
SCALE		FIGURE
1"=1000'		A

APPENDIX B

Surveyed Wetland Boundary

TOTAL WETLAND AREA = 7,308 (0.17 AC)

TOTAL SITE AREA = 62,731 S.F. (1.44 AC)

LEGEND

- BORING LOCATION
- PROJECT BOUNDARY
- WETLAND LINE
- WETLANDS

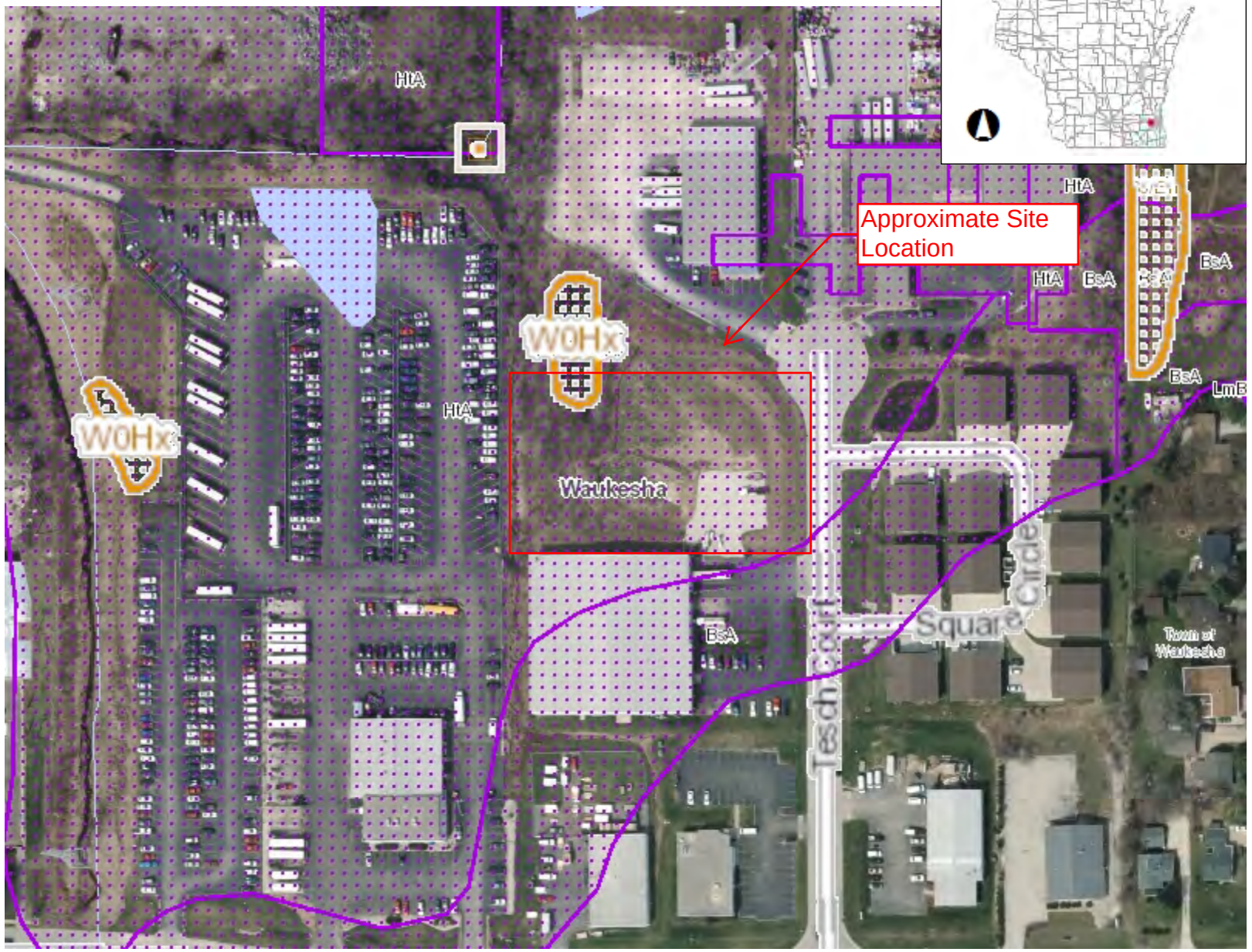
NOTE: AERIALS ARE NOT TIED TO COUNTY COORDINATES, AND PHOTOS ARE APPROXIMATE. (FOR REFERENCE ONLY)

DRAWN BY: L. LUCHT	PROJECT TITLE: 912 TESCH COURT CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN	Cedar corporation engineers • architects • planners • environmental specialists land surveyors • landscape architects • interior designers	CHECKED BY: S. JEPSON
DATE: 7/15/19		1695 Bellevue Street Green Bay, Wisconsin 54311 920-491-9081 800-472-7372 FAX 920-491-9020 www.cedarcorp.com	JOB NO.: 6235-001
SCALE: 1" = 200'			FIGURE: B
DRAWING FILE: 6235-001Wet			

APPENDIX C

Wisconsin DNR Wetland Inventory Map

Wetland Inventory Map



Legend

- Wetland Identifications and Confirmations
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Maximum Extent Wetland Indicators
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads

Notes

0.1 0 0.03 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 1,980

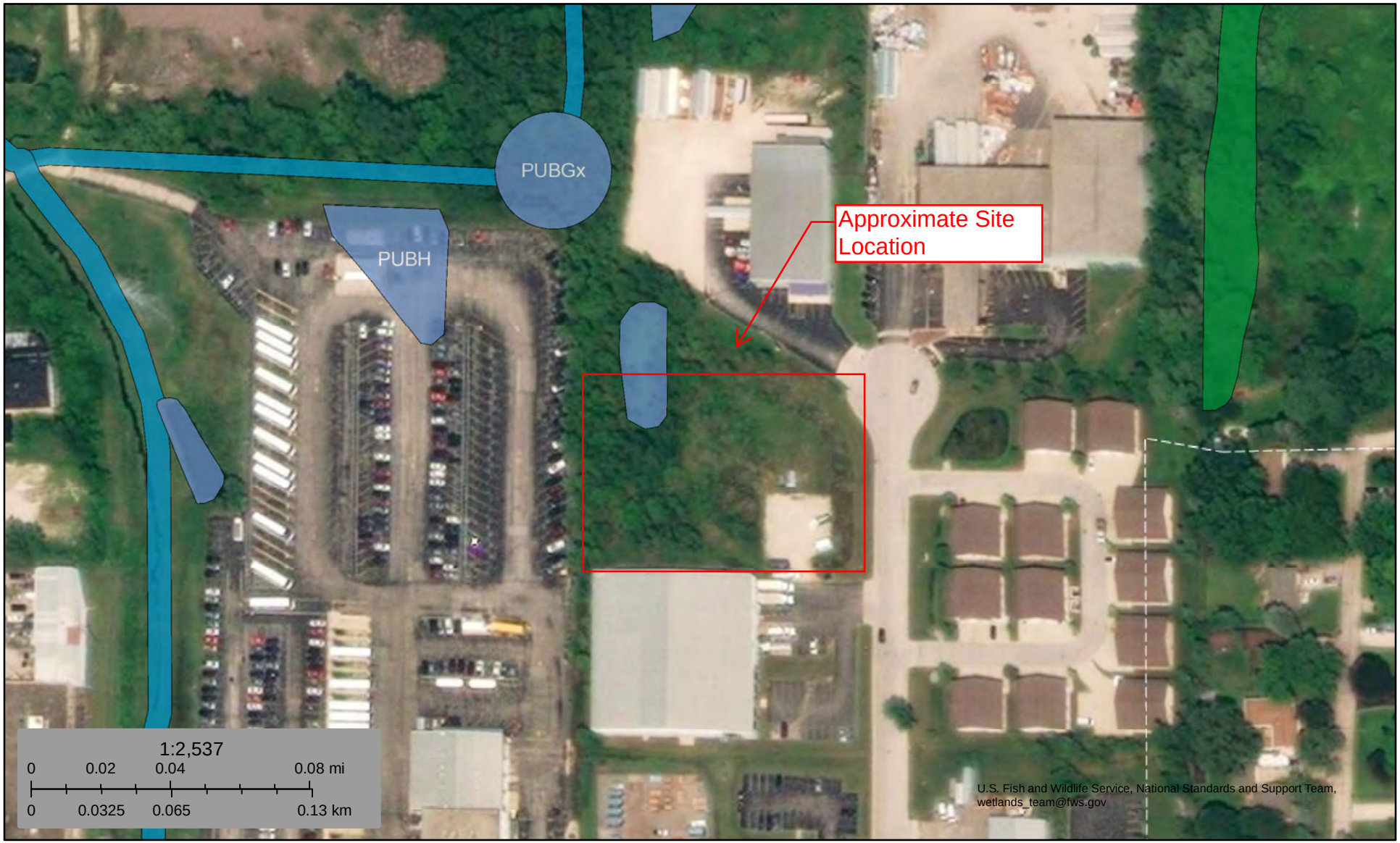
DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

APPENDIX D

U.S. FWS National Wetlands Inventory Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



June 28, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish & Wildlife Service

National Wetlands Inventory

Ecological Services

Enter Classification code: (Example: **L1UB1Hx**)

Optional: For geographically specific information*, please enter a State code: (Example: **TX** for Texas)

CLICK HERE TO DECODE

Description for code PUBHx:

P System **PALUSTRINE**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

UB Class **UNCONSOLIDATED BOTTOM**: Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

H Water Regime **Permanently Flooded**: Water covers the substrate throughout the year in all years.

Other Modifier(s):

x SPECIAL MODIFIER **Excavated**: This Modifier is used to identify wetland basins or channels that were excavated by humans.

APPENDIX E

Waukesha County Contour Map

LAND INFORMATION SYSTEMS DIVISION

Waukesha County GIS Map

Legend

- Index Contours
- Intermediate Contours

0 101.38 Feet

The information and depictions herein are for informational purposes and Waukesha County specifically disclaims accuracy in this reproduction and specifically admonishes and advises that if specific and precise accuracy is required, the same should be determined by procurement of certified maps, surveys, plats, Flood Insurance Studies, or other official means. Waukesha County will not be responsible for any damages which result from third party use of the information and depictions herein, or for use which ignores this warning.

Notes:

Printed: 6/28/2019

APPENDIX F

Milwaukee and Waukesha Counties
Custom Soils Report & Hydric Components

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Milwaukee and Waukesha Counties, Wisconsin

June 28, 2019

Custom Soil Resource Report
Soil Map

Map Scale: 1:567 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 14, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 7, 2014—Sep 22, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BsA	Brookston silt loam, 0 to 2 percent slopes	0.0	0.1%
HtA	Houghton muck, 0 to 2 percent slopes	1.6	99.9%
Totals for Area of Interest		**1.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

Milwaukee and Waukesha Counties, Wisconsin

BsA—Brookston silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tjx5
Elevation: 590 to 1,120 feet
Mean annual precipitation: 29 to 37 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 133 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Brookston and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brookston

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 12 inches: silt loam
Btg1 - 12 to 20 inches: silty clay loam
2Btg2 - 20 to 30 inches: clay loam
2Cg - 30 to 79 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: High AWC, high water table (G095BY007WI)
Hydric soil rating: Yes

Minor Components

Lamartine

Percent of map unit: 5 percent
Landform: Draws
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Pella

Percent of map unit: 5 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

HtA—Houghton muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szff
Elevation: 600 to 1,090 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 124 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, muck, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Muck

Setting

Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oap - 0 to 6 inches: muck
Oa - 6 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 5.95 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Houghton, ponded

Percent of map unit: 4 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Palms

Percent of map unit: 2 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Adrian

Percent of map unit: 2 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Edwards

Percent of map unit: 1 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Willette, muck

Percent of map unit: 1 percent
Landform: Depressions

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the

upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or

B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–WI602-Milwaukee and Waukesha Counties, Wisconsin					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
BsA: Brookston silt loam, 0 to 2 percent slopes	Brookston	85-95	Depressions	Yes	2
	Lamartine	2-6	Draws	No	—
	Pella	3-9	Drainageways	Yes	2,3
HtA: Houghton muck, 0 to 2 percent slopes	Houghton-Muck	84-95	Depressions	Yes	1,2,3
	Houghton-Ponded	2-5	Depressions	Yes	1,3
	Palms	1-3	Lakebeds (relict)	Yes	1,3
	Adrian	1-3	Lakebeds (relict)	Yes	1,3
	Edwards	1-2	Depressions	Yes	1,3
	Willette-Muck	0-3	Depressions	Yes	1,3

APPENDIX G

FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

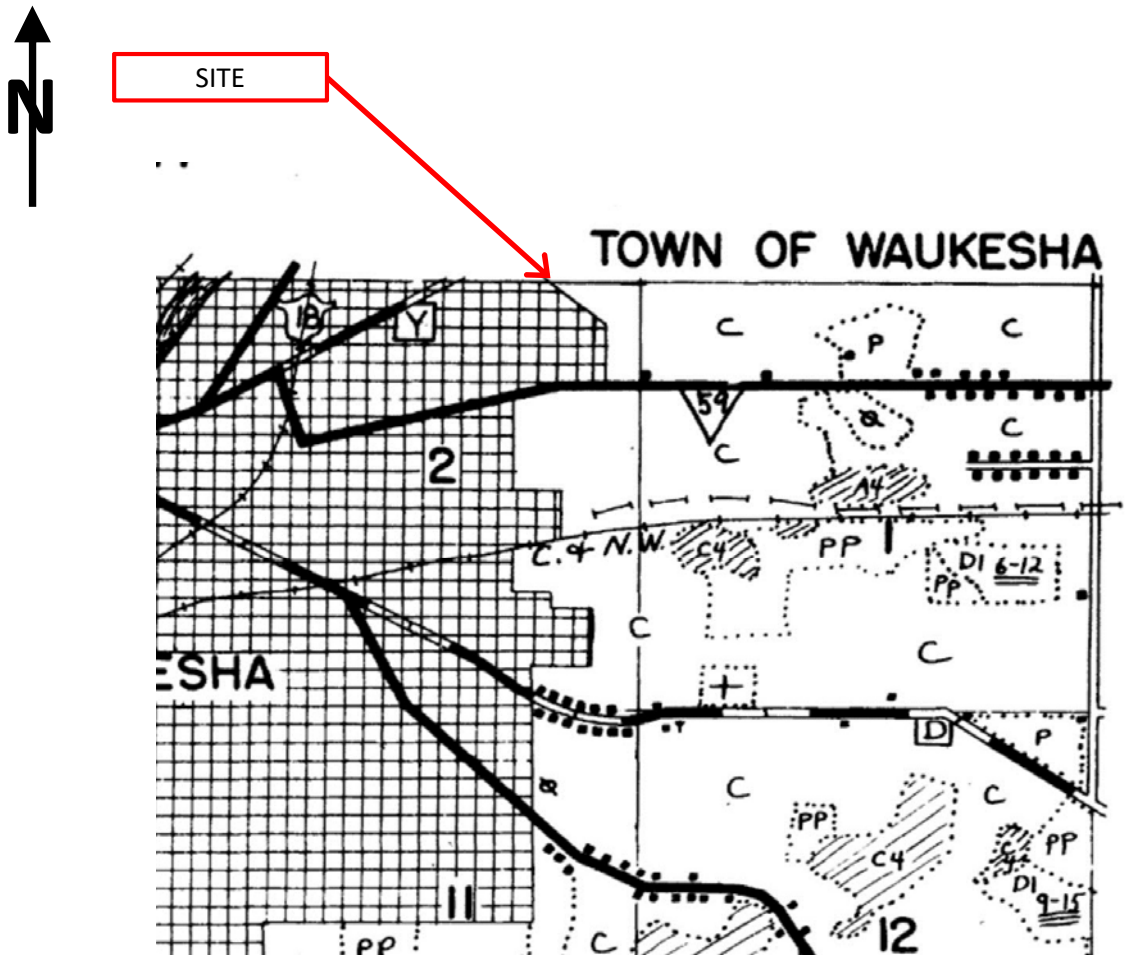
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/28/2019 at 10:09:18 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX H

Bordner Survey



LEGEND

1942-1944
WISCONSIN BORDNER SURVEYOFFICE - UW-MADISON

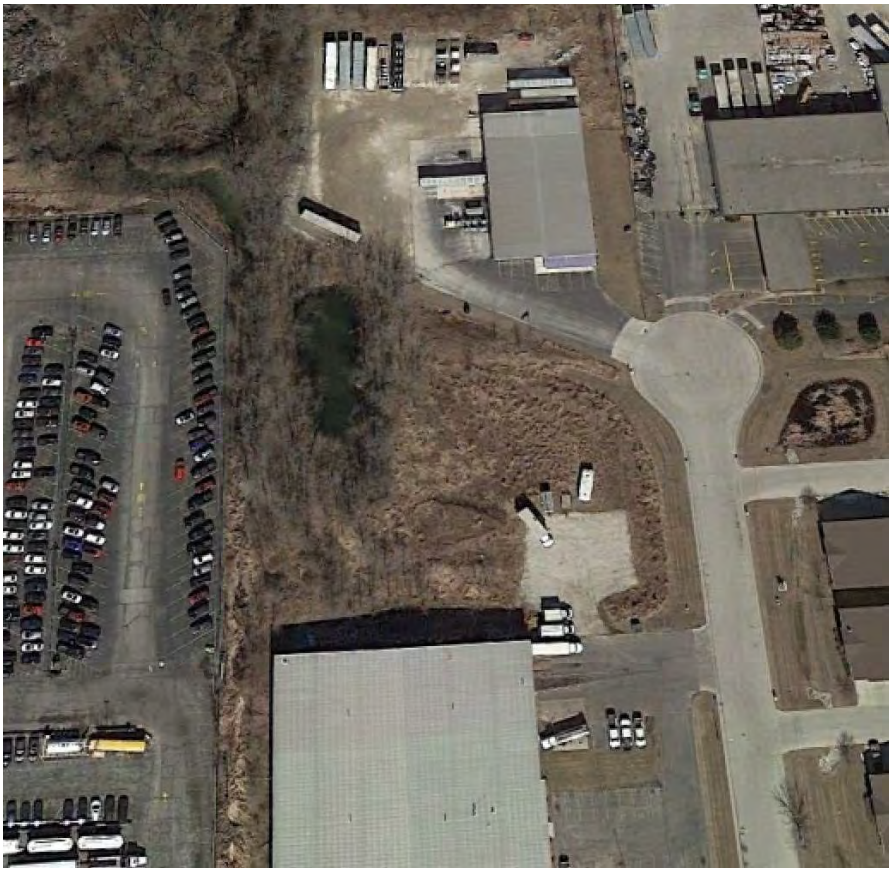
PART OF SECTION 1 AND 2
TOWNSHIP 6 N, RANGE 19 E,
WAUKESHA COUNTY, WI

Cedar corporation
1695 Bellevue Street
Green Bay, WI 54311-4251
engineering | architecture | environmental | surveying
landscape architecture | planning | economic development

SOURCE	SITE LOCATION MAP	DRAWN BY
UW- MADISON	912 TESCH COURT CITY OF WAUKESHA, WI	S. JEPSON
DATE: 7/2/2019		JOB NO.: 6235-001
SCALE: 1" = 1 MILE		Appendix: C

APPENDIX I

Aerial Photographs

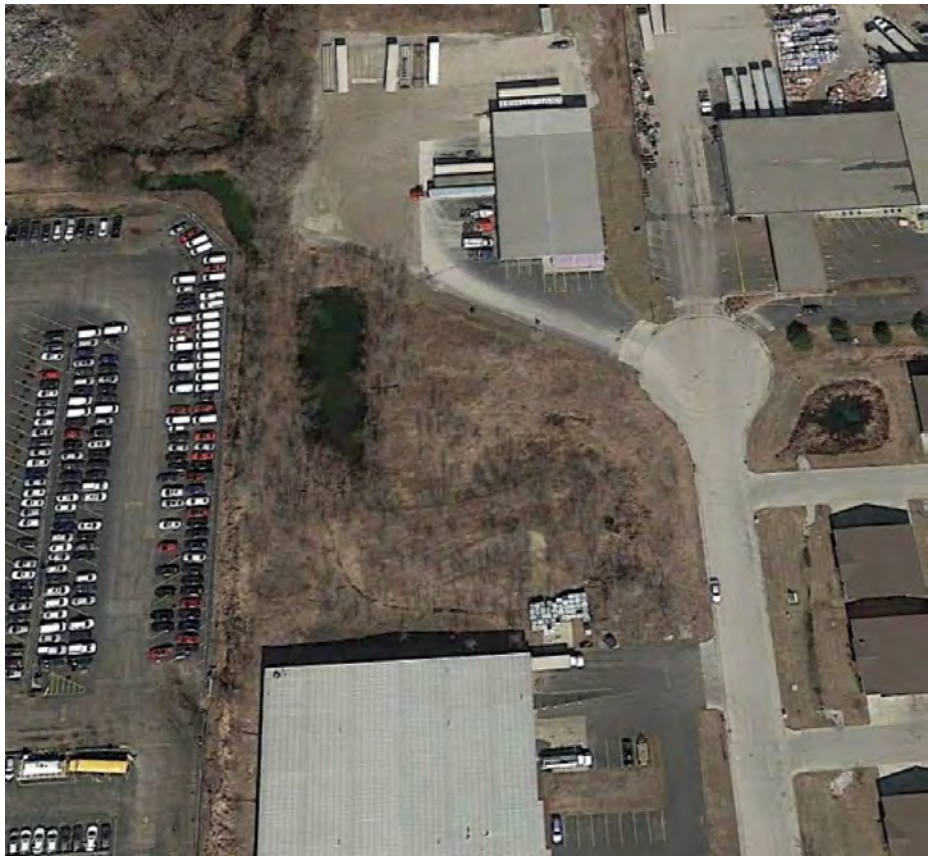


2018 Aerial Photograph – Google Earth

2017 Aerial Photograph – Google Earth

Appendix I – Aerial Review

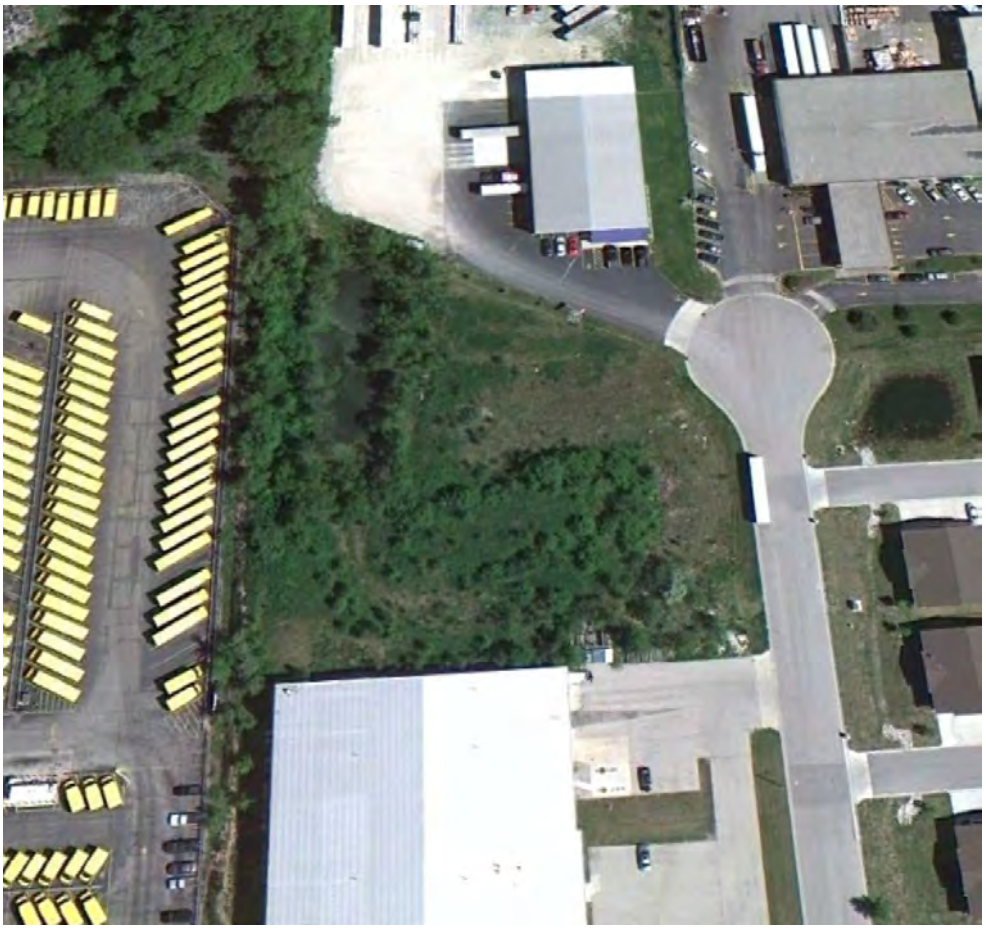
2015 Aerial Photograph – Google Earth



2014 Aerial Photograph – Google Earth

Appendix I – Aerial Review

2011 Aerial Photograph – Google Earth



2010 Aerial Photograph – Google Earth

Appendix I – Aerial Review

2008 Aerial Photograph – Google Earth

2007 Aerial Photograph – Google Earth

Appendix I – Aerial Review

2006 Aerial Photograph – Google Earth

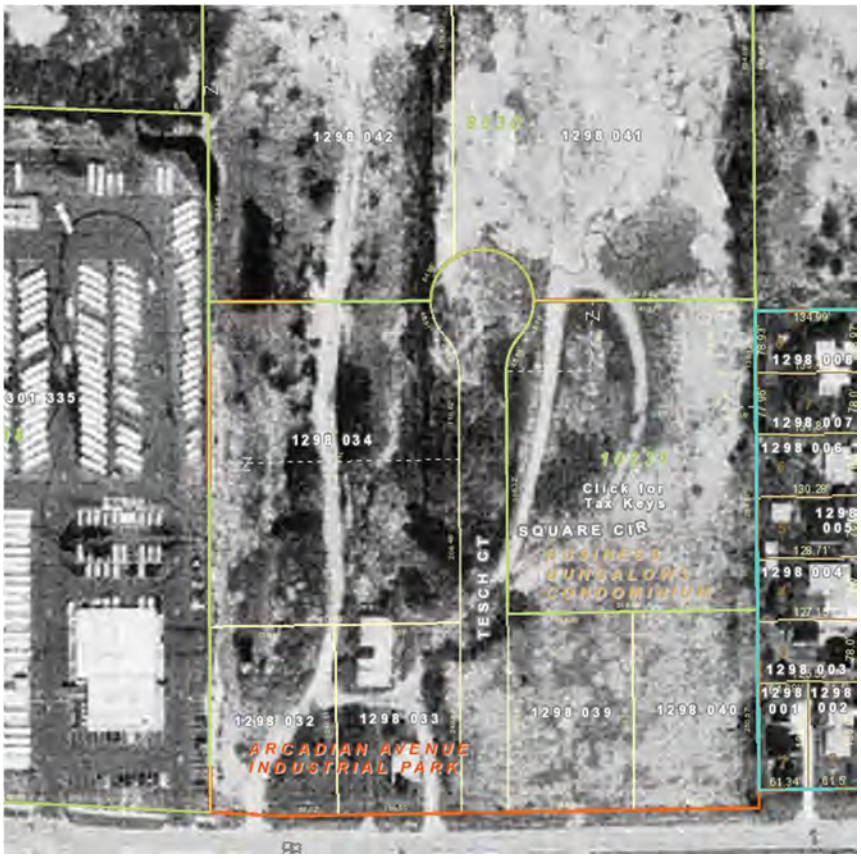
2005 Aerial Photograph – Google Earth

Appendix I – Aerial Review

2002 Aerial Photograph – Google Earth

2000 Aerial Photograph – Google Earth

Appendix I – Aerial Review



1995 Aerial Photograph – Waukesha County GIS

1990 Aerial Photograph – Waukesha County GIS

Appendix I – Aerial Review

1980 Aerial Photograph – Waukesha County GIS

1970 Aerial Photograph – Waukesha County GIS

Appendix I – Aerial Review

WETS Table

WETS Station: WAUKESHA, WI								
Requested years: 1971 - 2019								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0. 10 or more	Avg Snowfall
Jan	27.0	11.3	19.2	1.46	0.92	1.76	4	10.9
Feb	31.7	15.8	23.7	1.55	0.91	1.88	4	9.0
Mar	43.1	25.3	34.2	2.06	1.19	2.51	5	5.8
Apr	56.1	36.2	46.2	3.59	2.63	4.22	7	1.9
May	68.5	46.8	57.7	3.65	2.56	4.33	8	0.0
Jun	78.1	56.4	67.3	4.45	2.96	5.32	7	0.0
Jul	82.7	61.8	72.3	3.66	2.60	4.34	6	0.0
Aug	80.3	60.1	70.2	4.44	2.83	5.36	7	0.0
Sep	72.9	51.8	62.3	3.26	1.84	3.95	6	0.0
Oct	60.5	40.6	50.5	2.61	1.68	3.14	6	0.1
Nov	45.5	29.5	37.5	2.31	1.41	2.79	5	2.1
Dec	32.3	17.6	25.0	1.93	1.17	2.34	5	9.3
Annual:					32.87	37.05		
Average	56.6	37.8	47.2	-	-	-	-	-
Total	-	-	-	34.97			70	39.2

GROWING SEASON DATES			
Years with missing data:	24 deg = 11	28 deg = 11	32 deg = 10
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 38	28 deg = 38	32 deg = 39
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/5 to 11/3: 212 days	4/17 to 10/23: 189 days	4/28 to 10/12: 167 days
70 percent *	4/1 to 11/7: 220 days	4/13 to 10/28: 198 days	4/23 to 10/17: 177 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1893	M1.52	1.21	2.95	5.64	2.11	4.32	3.05	1.32	2.87	2.41	1.47	2.61	31.48
1894	1.34	0.81	2.49	2.94	3.68	2.22	M1.16	1.73	M4.55	2.37	2.08	0.51	25.88
1895	1.55	0.42	0.53	0.78	5.01	2.29	1.79	2.61	1.56	0.67	2.11	1.82	21.14
1896	0.43	0.89	M1.82	M4.11	4.12	2.59	2.59	2.67	5.71	0.68	2.05	0.56	28.22
1897	2.73	1.03	M3.28	M4.14	1.01	3.14	3.20	3.02	1.35	1.11	1.25	1.58	26.84
1898	2.34	1.60	M3.24	2.05	1.92	1.54	2.81	4.08	1.55	4.10	0.98	0.50	26.71
1899	0.64	0.77	1.47	M1.19	3.92	3.99	2.14	2.50	3.18	1.21	2.20	1.18	24.39
1900	1.43	1.87	0.91	2.34	1.21	1.21	7.03	5.67	2.02	2.34	1.86	0.45	28.34
1901	M1.02	1.23	2.95	0.35	1.88	1.35	2.01	0.77	2.	M1.	0.58	1.49	17.

									67	00			30
1902	0.29	1.39	1.33	1.11	5.96	4.53	8.82	0.64	3.95	1.73	2.39	2.31	34.45
1903	M0.48	0.72	M2.86	2.51	4.57	3.30	6.93	7.39	5.04	2.50	1.01	0.99	38.30
1904	M0.81	0.86	3.54	M1.97	3.70	2.07	3.17	3.70	4.33	3.28	M0.22	M1.38	29.03
1905	0.86	M1.21	2.50	1.49	6.71	5.69	2.77	4.33	1.44	3.19	2.19	M1.02	33.40
1906	M3.54	1.23	1.61	1.69	2.08	3.47	4.29	2.40	2.84	2.36	2.54	M1.31	29.36
1907	2.15	0.11	2.20	3.14	M3.22	5.03	6.35	4.07	5.21	1.25	1.26	1.45	35.44
1908	1.03	1.20	M2.61	4.24	4.86	3.11	1.08	1.85	0.81	0.82	2.03	1.15	24.79
1909	2.44	M0.93	0.75	6.84	2.28	2.63	0.46	3.73	3.32	0.48	2.19	2.96	29.01
1910	1.48	0.46	0.13	3.92	3.81	1.57	1.34	3.27	2.58	1.02	M2.63	M0.26	22.47
1911	0.29	2.50	0.42	3.08	1.80	2.78	3.30	2.33	4.78	3.58	4.17	M0.98	30.01
1912	1.36	M1.66	1.38	2.26	8.24	0.92	4.93	3.11	5.05	3.09	M1.03	2.20	35.23
1913	1.40	1.10	3.36	3.29	7.06	5.21	5.40	5.37	2.49	2.60	1.90	M0.49	39.67
1914	1.02	1.85	2.70	2.29	6.90	6.41	1.32	1.80	6.15	4.43	M0.33	1.98	37.18
1915	1.48	M1.62	1.38	0.75	7.95	3.84	2.40	2.86	10.00	0.95	2.72	0.65	36.60
1916	3.09	1.37	3.69	4.60	3.07	5.92	0.41	4.46	M6.60	4.64	M2.15	2.34	42.34
1917	1.30	M0.10	1.67	3.67	3.94	7.44	3.51	1.04	4.91	6.00	0.38	0.55	34.51
1918	5.60	1.45	1.63	3.51	4.23	1.42	1.40	1.60	1.29	2.83	2.90	2.51	30.37
1919	M0.32	2.93	4.09	3.45	2.93	3.16	2.93	1.41	6.97	4.39	M2.76	1.64	36.98
1920	1.53	0.38	4.71	2.30	2.12	3.58	2.17	4.23	1.75	2.17	1.86	3.75	30.55
1921	0.30	0.35	2.89	5.73	2.74	1.52	1.28	6.78	9.50	5.02	1.42	2.89	40.42
1922	0.22	M2.37	M1.02	2.66	3.80	2.64	2.54	2.73	4.79	1.53	2.54	M1.26	28.10
1923	1.92	0.83	M3.89	2.89	1.83	3.90	1.74	3.31	4.85	4.18	1.55	1.28	32.17
1924	1.36	2.53	3.80	2.16	4.11	5.30	2.45	8.07	2.21	0.06	2.33	0.93	35.31
1925	0.90	1.35	M1.33	2.66	1.77	3.65	3.82	2.53	5.30	3.08	1.60	1.65	29.64
1926	1.16	1.95	2.14	M2.05	4.09	M3.30	2.12	1.35	4.65	3.01	M3.52	1.05	30.39
1927	1.38	1.39	M2.52	4.63	3.96	2.65	3.48	0.75	4.03	5.07	M4.44	0.67	34.97
1928	0.18	0.95	2.03	1.42	3.35	5.82	1.84	4.19	1.36	2.90	4.45	2.50	30.99
1929	3.93	1.18	2.04	6.25	2.46	2.96	5.85	1.68	2.95	M2.71	0.58	M1.01	33.60
1930	1.35	0.58	2.67	2.71	2.59	1.73	2.28	1.01	2.43	2.38	0.65	0.75	21.13
1931	1.25	0.48	M1.89	1.24	2.65	2.68	1.30	2.79	4.16	3.11	4.95	0.77	27.27
1932	1.94	1.00	1.67	0.21	1.16	1.82	1.80	1.86	0.53	3.50	2.65	1.38	19.52
1933	0.99	1.36	2.81	2.37	8.74	3.27	4.43	2.73	3.46	1.61	1.01	0.83	33.61
1934	0.50	0.65	2.21	1.49	5.60	2.26	1.75	0.66	4.23	1.75	6.47	0.88	28.45
1935	1.55	1.97	1.55	3.12	2.25	3.58	2.67	3.69	1.	1.	3.66	1.16	28.

									73	57			50
1936	M1.32	1.19	0.47	1.19	1.82	2.73	M0.72	6.32	4.40	3.12	0.48	2.57	26.33
1937	3.27	1.99	1.17	3.90	1.47	3.33	2.72	1.75	1.19	2.59	0.45	2.10	25.93
1938	3.91	2.82	2.43	1.36	3.91	5.11	4.58	7.30	7.77	1.52	1.97	0.89	43.57
1939	2.05	1.88	M1.52	2.71	2.35	3.87		3.56	1.30	2.53	0.38	0.35	22.50
1940	1.75	1.66	1.44	2.37	5.01	7.11	1.79	6.15	0.77	1.53	2.89	1.07	33.54
1941	2.53	0.56	1.90	1.33	3.75	1.92	2.66	0.91	9.20	3.15	0.88	1.26	30.05
1942	1.31	0.55	1.74	0.71	4.65	4.45	3.20	3.82	3.73	M2.38	4.50	3.40	34.44
1943	2.21	0.68	3.18	1.58	4.86	4.28	3.50	3.29	0.51	0.91	2.27	0.66	27.93
1944	1.33	1.94	2.40	3.23	2.34	3.80	2.84	2.35	2.16	0.41	2.29	1.33	26.42
1945	0.42	1.23	1.42	2.86	6.09	2.80	2.58	3.75	5.97	0.75	2.94	1.06	31.87
1946	2.63	1.64	2.81	1.40	2.24	3.61	1.10	2.00	2.67	1.78	2.24	1.75	25.87
1947	3.27	0.25	1.43	3.68	6.07	4.30	2.73	3.26	4.74	2.93	3.10	1.48	37.24
1948	1.52	1.80	3.48	2.75	3.47	2.98	2.68	0.89	1.17	0.62	2.87	2.62	26.85
1949	2.12	2.10	1.90	1.59	3.01	5.72	4.60	1.24	1.59	1.72	0.37	1.97	27.93
1950	2.59	1.10	2.68	3.77	2.09	4.74	5.68	2.14	2.81	0.65	1.00	2.83	32.08
1951	1.76	1.87	4.02	5.00	2.68	3.18	3.37	3.13	2.68	5.68	3.92	2.39	39.68
1952	2.17	0.93	4.22	2.09	3.50	4.10	11.41	3.10	0.90	0.12	3.41	2.05	38.00
1953	1.35	1.90	1.51	3.46	2.94	2.81	4.12	4.00	2.05	0.60	0.47	1.93	27.14
1954	1.30	1.06	1.63	3.80	2.71	7.52	7.13	5.18	3.39	2.87	1.47	2.67	40.73
1955	0.84	1.16	1.21	3.49	2.81	5.51	M1.82	1.08	1.68	3.12	0.67	0.97	24.36
1956	0.39	0.90	M2.00	3.99	4.04	2.50	6.80	3.75	0.30	0.51	1.76	1.44	28.38
1957	1.06	0.69	1.63	2.94	4.87	5.45	1.89	2.08	M0.52	1.53	3.19	2.28	28.13
1958	0.99	0.15	0.40	1.92	2.71	1.63	1.58	4.04	4.55	2.38	3.97	0.45	24.77
1959	1.35	1.62	4.38	3.44	1.30	2.90	4.38	3.91	5.15	5.32	2.14	1.58	37.47
1960	2.32	1.62	2.27	3.95	4.74	1.59	4.60	6.39	3.10	3.51	2.73	0.25	37.07
1961	0.22	0.80	3.43	3.45	1.70	2.57	2.13	2.43	10.21	3.32	2.42	1.15	33.83
1962	2.08	1.69	1.73	1.50	2.63	1.80	3.65	2.17	1.68	1.81	0.80	0.75	22.29
1963	0.94	0.40	1.99	2.57	1.70	2.93	1.33	3.75	2.79	0.51	1.79	0.66	21.36
1964	1.33	0.26	2.41	4.81	3.82	2.74	4.74	2.43	1.91	0.17	2.74	0.73	28.09
1965	3.14	0.88	3.86	3.17	2.24	1.54	3.03	8.06	6.88	3.42	1.58	3.16	40.96
1966	1.59	1.31	2.95	2.87	2.28	1.14	2.18	2.68	0.60	1.48	2.46	2.34	23.88
1967	1.30	1.23	1.21	1.98	3.21	5.23	1.65	2.55	1.29	3.73	1.66	1.06	26.10
1968	0.76	0.64	0.19	4.15	3.15	6.92	4.14	3.96	3.58	1.32	2.02	2.67	33.50
1969	1.82	0.11	1.03	3.35	2.89	7.94	4.29	0.56	2.	5.	0.93	1.24	31.

									22	07			45
1970	0.46	0.22	1.43	2.14	6.63	3.84	3.62	0.93	5.78	2.13	2.12	2.87	32.17
1971	1.50	2.50	1.65	1.68	1.91	3.57	2.71	3.98	1.21	2.98	3.67	4.21	31.57
1972	0.61	0.55	2.35	2.23	3.13	3.54	4.58	6.31	8.40	2.80	1.07	2.84	38.41
1973	0.92	1.56	2.69	7.88	4.60	2.95	1.86	1.10	4.50	3.39	1.78	2.86	36.09
1974	3.23	2.26	3.81	3.98	3.63	2.52	2.55	4.12	1.85	2.37	1.76	1.93	34.01
1975	2.06	1.79	3.56	3.69	1.73	4.64	3.21	5.45	0.95	0.54	3.65	0.68	31.95
1976	1.13	2.41	5.54	5.42	4.02	2.40	2.14	2.08	1.07	2.25	0.53	0.34	29.33
1977	0.51	0.65	4.44	1.92	1.02	4.22	5.55	5.78	3.00	2.27	3.64	2.23	35.23
1978	1.18	0.24	0.64	4.27	3.92	4.84	4.80	2.55	6.34	2.08	2.18	2.80	35.84
1979	2.50	0.81	3.74	4.50	1.86	2.77	2.74	8.14	T	2.38	2.53	1.69	33.66
1980	1.22	0.85	0.46	3.82	1.81	3.62	3.54	7.95	5.92	1.43	1.38	2.25	34.25
1981	0.23	1.73	M0.43		1.37	2.67	3.02	7.43	5.10	3.09	2.41	1.02	28.50
1982	2.79	0.75	2.03	3.27	3.11	2.62	3.60	3.04	0.57	2.72	5.41	3.52	33.43
1983	0.48	1.60	M4.49	2.67	M3.80	1.76	2.46	4.34	4.63	M3.25	3.84	1.86	35.18
1984	0.56	1.00	1.56	4.26	4.83	4.28	2.97	2.77	M2.74	5.43	3.18	3.92	37.50
1985	1.35	1.93	2.89	1.52	1.84	2.46	1.95	2.81	4.48	5.79	5.99	1.29	34.30
1986	0.80	1.95	1.63	2.19	2.38	6.30	5.18	5.16	7.85	M1.69	0.57	0.74	36.44
1987		MT	2.31	4.09	4.23	3.08	6.19	8.17	3.72	1.01	M1.24		34.04
1988													
1989													
1990													
1991							4.19	1.97	M5.78	M5.60	M3.07	1.47	22.08
1992	M0.64	1.28	M1.88	2.25	M1.20	M1.87	4.24	M3.54	5.18	1.81	4.53	2.33	30.75
1993	2.15	0.99	M1.39	6.45	1.97	7.33	5.64	4.34	4.28	0.60	1.56	0.38	37.08
1994	1.95	2.70	0.64	1.60	0.99	3.52	6.64	5.10	1.43	0.63	3.68	0.93	29.81
1995	1.52	0.10	2.00	3.83	3.29	0.53	3.08	10.83	0.93	4.26	3.10	0.64	34.11
1996	1.71	0.82	0.52	3.19	2.78	7.83	3.88	2.54	2.23	5.02	0.80	1.57	32.89
1997	1.78	3.20	0.92	2.46	2.38	6.78	4.04	5.53	1.80	1.43	1.09	M1.24	32.65
1998	2.92	2.14	3.55	3.57	4.16	3.92	1.40	6.41	2.32	3.39	2.39	0.98	37.15
1999	4.27	1.22	0.83	5.45	3.82	6.14	6.48	1.86	3.87	0.77	0.78	1.77	37.26
2000	1.01	1.26	1.34	2.97	8.05	4.15	7.54	5.78	7.00	0.92	M2.41	M2.30	44.73
2001	1.28	3.12	0.35	4.75	5.42	4.62	1.87	4.82	4.66	3.59	M1.54	M1.30	37.32
2002	0.87	1.56	1.73	3.96	2.89	3.30	3.32	8.50	3.32	2.76	0.73	0.69	33.63
2003	0.22	M0.11	1.49	1.35	5.67	2.22	3.33	0.51	1.90	1.64	4.12	2.35	24.91
2004	0.76	M0.72	2.84	2.31	9.44	5.11	2.02	M4.35	0.13	2.39	2.26	M1.35	33.68

2005	M2.33	1.57	0.69	1.03	2.86	M0.89	M2.09	1.18	M2.33	0.43	M3.09	M0.63	19.12
2006	0.97	0.68	1.55	3.22	M4.63	M2.18	M3.07	4.49	M2.98	2.89	M2.56	M2.48	31.70
2007	M0.97	M1.42	1.65	M3.88	2.05	4.01	M1.10	9.62	1.51	2.41	0.21	3.11	31.94
2008	0.96	M2.08	2.38	5.58	2.23	10.27	4.08	1.04	4.07	2.97	1.03	4.12	40.81
2009	1.05	2.11	3.89	5.51	3.39	7.31	0.87	3.67	1.82	4.98	1.80	3.53	39.93
2010	0.86	0.99	0.49	3.86	3.75	11.11	9.23	1.48	2.70	1.81	1.09	0.96	38.33
2011	0.85	2.26	2.69	3.38	2.44	5.29	2.98	3.16	4.27	1.49	2.59	1.59	32.99
2012	1.74	0.98	3.42	2.37	5.03	0.58	3.06	2.10	2.33	4.00	0.62	3.70	29.93
2013	2.71	3.84	1.64	7.57	7.24	7.29	2.29	3.54	2.38	2.73	2.85	1.09	45.17
2014	1.24	1.50	1.21	4.04	5.20	5.80	3.21	5.23	1.22	2.60	1.97	0.69	33.91
2015	0.88	0.79	0.70	4.07	2.63	3.26	2.08	M3.15	M4.23	1.83	M2.79	5.15	31.56
2016	0.65	0.81	3.67	1.97	M1.71	M3.41	4.29	4.51	5.91	4.23	2.02	M2.66	35.84
2017	2.32	1.49	3.23	5.15	4.95	5.10	6.88	2.94	0.43	M2.33	1.49	0.54	36.85
2018	1.51	2.86	0.65	M1.82	5.01	6.68	2.94	5.73	5.99	5.28	M2.50	M1.13	42.10
2019	M2.09	4.66	M1.02	2.95	5.51	4.12	M2.12						22.47

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22

APPENDIX J

Wetland Determination Data Forms – Northcentral and Northeast Region

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: OSI Environmental Inc. City/County: Waukesha/Waukesha Sampling Date: 7/3/2019

Applicant/Owner: Payne and Dolan/ OSI Environmental State: WI Sampling Point: 1-1

Investigator(s): Jepson (lead) and Lucht Section, Township, Range: Sec 1 and 2 T6N R19E

Landform (hillside, terrace, etc.): flats Local relief (concave, convex, none): concave Slope %: 1

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: HtA - Houghton Muck (very poorly drained) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Weather conditions are mostly sunny and 80 degrees. Site consists of a vacant lot north of the OSI Environmental building. Majority of site area appears to be filled. Rainfall totals at the time of the site investigation are 0.04 Inches above normal for July and the month of June was 0.52 inches above normal amounts according to the NOAA climatic statistics for Milwaukee.Sample plot located in flat area of native landscape. To the east climbs sharply and consists of significant amounts of fill. Hillslope contains concrete and asphalt pieces

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes x	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1-1

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	10	Yes	OBL
2. *Populus deltoides*	15	Yes	FAC
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'R)			
1. *Rhamnus cathartica*	5	Yes	FAC
2. *Cornus alba*	5	Yes	FACW
3. *Populus deltoides*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5'R)			
1. *Leersia oryzoides*	30	Yes	OBL
2. *Carex stricta*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	15	x 2 =	30
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		155 (B)

Prevalence Index = B/A = 1.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Loamy/Clayey	
3-20	10YR 4/1	80	7.5YR 4/6	20	C	M	Loamy/Clayey	Sandier

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ____

Remarks:

High organic in top. L over SCL

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: OSI Environmental Inc. City/County: Waukesha/Waukesha Sampling Date: 7/3/2019

Applicant/Owner: Payne and Dolan/ OSI Environmental State: WI Sampling Point: 1-2

Investigator(s): Jepson (lead) and Lucht Section, Township, Range: Sec 1 and 2 T6N R19E

Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope %: 3

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: HtA - Houghton Muck (very poorly drained) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil X , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Weather conditions are mostly sunny and 80 degrees. Site consists of a vacant lot north of the OSI Environmental building. Site area appears to be filled. Rainfall totals at the time of the site investigation are 0.04 inches above normal for July and the month of June was 0.52 inches above normal amounts according to the NOAA climatic statistics for Milwaukee. Sample located on filled area. Approximately 15 foot elevation difference between plot 1-1 and 1-2. Area to the east is all fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No x	Depth (inches):
Water Table Present?	Yes	No x	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No x	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 1-2

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	25	Yes	FAC
2. *Robinia pseudoacacia*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'R)			
1. *Robinia pseudoacacia*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5'R)			
1. *Phalaris arundinacea*	50	Yes	FACW
2. *Solidago gigantea*	50	Yes	FACW
3. *Alliaria petiolata*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	25	x 3 =	75
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	145 (A)		355 (B)

Prevalence Index = B/A = 2.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 1-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 3/2	90					Loamy/Clayey	Mixing
	7.5YR 4/4	10						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

SiCL Area isfillled

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: OSI Environmental Inc. City/County: Waukesha/Waukesha Sampling Date: 7/3/2019

Applicant/Owner: Payne and Dolan/ OSI Environmental State: WI Sampling Point: 2-1

Investigator(s): Jepson (lead) and Lucht Section, Township, Range: Sec 1 and 2 T6N R19E

Landform (hillside, terrace, etc.): swale Local relief (concave, convex, none): concave Slope %: 3

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: HtA - Houghton Muck (very poorly drained) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil X , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Weather conditions are mostly sunny and 80 degrees. Site consists of a vacant lot north of the OSI Environmental building. Site area appears to be filled. Rainfall totals at the time of the site investigation are 0.04 inches above normal for July and the month of June was 0.52 inches above normal amounts according to the NOAA climatic statistics for Milwaukee. Sample located in swale that carries storm water from a 8-inch pvc discharge pipe and parking lot to the pond area. Swale still appears to have fill, but is meeting wetland conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No x	Depth (inches):
Water Table Present?	Yes x	No	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes x	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water was present in swale

VEGETATION – Use scientific names of plants. Sampling Point: 2-1

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	15	Yes	FAC
2. *Populus tremuloides*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15'R)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5'R)			
1. *Phalaris arundinacea*	40	Yes	FACW
2. *Solidago gigantea*	20	Yes	FACW
3. *Boehmeria cylindrica*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	60	x 2 =	120
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 2-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/1	95	7.5YR 3/4	5	C	M	Loamy/Clayey	Distinct redox concentrations
6-20	10YR 5/4	75	7.5YR 4/6	5	C	M	Loamy/Clayey	Distinct redox concentrations
	7.5YR 3/1	20						Mixing

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ____

Remarks:

There was mixing under the topsoil. High potential of still being fill.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: OSI Environmental Inc. City/County: Waukesha/Waukesha Sampling Date: 7/3/2019

Applicant/Owner: Payne and Dolan/ OSI Environmental State: WI Sampling Point: 2-2

Investigator(s): Jepson (lead) and Lucht Section, Township, Range: Sec 1 and 2 T6N R19E

Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope %: 5

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: HtA - Houghton Muck (very poorly drained) NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil X , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Weather conditions are mostly sunny and 80 degrees. Site consists of a vacant lot north of the OSI Environmental building. Site area appears to be filled. Rainfall totals at the time of the site investigation are 0.04 inches above normal for July and the month of June was 0.52 inches above normal amounts according to the NOAA climatic statistics for Milwaukee. Sample plot located on filled area, climbing toward the OSI building. Approximately 5 foot elevation difference between plot 2-1 and 2-2. Continues to climb to the building to the south, beyond plot.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No x	Depth (inches):
Water Table Present?	Yes	No x	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No x	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: 2-2

Tree Stratum (Plot size: 30'R)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15'R)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5'R)			
1. *Phalaris arundinacea*	15	No	FACW
2. *Solidago canadensis*	50	Yes	FACU
3. *Vicia americana*	20	Yes	FACU
4. *Taraxacum officinale*	5	No	FACU
5. *Poa pratensis*	10	No	FACU
6. *Boehmeria cylindrica*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	105 =Total Cover		
Woody Vine Stratum (Plot size: 30'R)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	105 (A)		375 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point 2-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 3/1	80					Loamy/Clayey	mixing
	7.5YR 4/3	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

SCL, gravelly, Area is fill.

APPENDIX K

Site Photos

PHOTOGRAPH LOG

Client Name:	Site Location:	Project No.
Payne and Dolan, Incorporated	N ½ 912 Tesch Court, Waukesha	6235-001

Photo No.	Date:
1	7/3/19

Direction Photo Taken:

Northwest

Description:

Plot 1-1

Photo No.	Date:
2	7/3/19

Direction Photo Taken:

North

Description:

Wetland line between pond (to west) and higher elevation upland (to east).

Photo No.	Date:
3	7/3/19

Direction Photo Taken:

Northwest

Description:

Pond area

Photo No.	Date:
4	7/3/19

Direction Photo Taken:

North

Description:

Slope between wetland and upland.

Photo No.	Date:
5	7/3/19

Direction Photo Taken:

Northwest

Description:

Plot 1-2

Photo No.	Date:
6	7/3/19

Direction Photo Taken:

South

Description:

Elevation raising towards building

Photo No.	Date:
7	7/3/19

Direction Photo Taken:

West

Description:

Plot 2-1 and 2-2 showing wetland line in between.

Photo No.	Date:
8	7/3/19

Direction Photo Taken:

Southwest

Description:

Plot 2-2

Photo No.	Date:
9	7/3/19

Direction Photo Taken:

East

Description:

Wetland area towards parking lot.

Photo No.	Date:
10	7/3/19

Direction Photo Taken:

Description:

Drainage pipe from building.

Photo No.	Date:
11	7/3/19

Direction Photo Taken:

North

Description:

Parking lot

Photo No.	Date:
12	7/3/19

Direction Photo Taken:

West

Description:

From north side of Tesch Court looking towards filled area.

APPENDIX L

WDNR Concurrence Letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1300 W Clairemont Avenue
Eau Claire, WI 54701

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

March 21, 2019

Stacy E. Jepson, CST
Martenson & Eisele, Inc
1377 Midway Road
Menasha WI, 54952

Subject: 2019 Assured Wetland Delineator Confirmation

Dear Ms. Jepson:

This letter provides Wisconsin Department of Natural Resources (WDNR) confirmation for the wetland delineations you conduct during the 2019 growing season. You and your clients will not need to wait for the WDNR to review your wetland delineations before moving forward with project planning. This will help expedite the review process for WDNR's wetland regulatory program. Your name and contact information will continue to be listed on our website at: http://dnr.wi.gov/topic/wetlands/assurance.html.

In the instance where a municipality may require a letter of confirmation for your work prior to moving forward in the local regulatory process, this letter shall serve as that confirmation. Although your wetland delineations do not require WDNR field review, inclusion of a Wetland Delineation Report is required for projects needing State authorized wetland, waterway and/or storm water permit approvals.

If you or any client has a question regarding your status in the Wetland Delineation Professional Assurance Program, contact me by email at travis.holte@wisconsin.gov or phone at 715-839-1638. Thank you for all your hard work and best wishes for the upcoming field season.

Sincerely,

Travis Holte
Interim Wetland Identification Program Coordinator
Bureau of Watershed Management