

# **Assured Wetland Delineation Report**

### 5356 Felland Road

Town of Burke, Dane County, Wisconsin June 25, 2018

Project Number: 20180033

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### 5356 Felland Road

Town of Burke, Dane County, Wisconsin June 25, 2018

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### 1.0 Introduction

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination and delineation on the 5356 Felland Road Property on April 23, 2018 at the request of Stantec Consulting Services, Inc. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Appendix E, Qualifications). The 39.20-acre site (the "Study Area") lies southeast of the intersection of Nelson Road and Felland Road, within Section 23, T8N, R10E, Town of Burke, Dane County, Wisconsin (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area.

Two (2) wetlands totaling approximately 2.98 acres were delineated and mapped within the Study Area. Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.



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### 2.0 Methods

### 2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey (USGS) WI 7.5 Minute Series (Topographic) Map (Figure 1, Appendix A), the Soil Survey Geographic (SSURGO) Database, Web Soil Survey (Figures 2 and 3, Appendix A), the Wisconsin Wetland Inventory mapping (Figure 4, Appendix A), and aerial imagery. The USGS National Hydrography Dataset is included on Figure 1; and the WDNR Division of Water 24K Hydrography Geospatial Data Layer is included on Figures 2, 3, 4 and 5.

Wetland determinations were completed on-site at sample points, often along transects, using the three criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators and an assessment of recent precipitation patterns help to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the NRCS, these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events in the week prior to the investigation were considered while interpreting wetland hydrology indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).



The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only surveyed with GPS, particularly in active agricultural areas. The GPS data was then used to map the wetlands using Geographical Information System (GIS) software.

### 3.0 Results and Discussion

### 3.1 Desktop Review

### **<u>Climatic Conditions</u>**

According to the WETS analysis using the previous three (3) months of precipitation data prior to the fieldwork, conditions encountered at the time of the fieldwork were expected to be dry (Appendix B). Conditions observed on-site were relatively dry for the time of year, which was consistent with the WETS analysis and general observations within the region. The Palmer Drought Index was checked online and the long-term conditions at the time of the fieldwork were in the mid to moderately moist range. Fieldwork was completed outside the dry-season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance website. The growing season was determined to be underway during the time of the fieldwork based on several species greening up and buds opening.

### **General Topography and Land Use**

The topography within the Study Area was highly variable due to the historic land use of the Study Area consisting of gravel pits and disposal areas. The Study Area is bound by Felland Road to the west; Nelson Road to the north; railroad tracks to the east; and a concrete facility to the south. Topographic highs of approximately 940 feet mean sea level (msl) lie near the northeast corner of the Study Area while topographic lows of approximately 892 feet msl lie near the southern portion of the Study Area within a drainageway and pond (Figures 1 and 5, Appendix A). Land uses within the Study Area consist of an abandoned gravel pit and disposal areas currently comprised of woodlands, old field, drainageways, and an open water pond. General drainage is to the south and west towards the drainageway which ultimately drains southwest beyond the Study Area limits.



### Soil Mapping

Soils mapped by the USDA's Natural Resources Conservation Service (NRCS) Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located within areas mapped as Gravel Pit (GP) and other soil units not identified has supporting hydric or partially hydric soils (Figures 2 and 3, Appendix A).

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
BbA: Batavia silt loam, gravelly substratum, 0 to 2 percent slopes	Batavia- Gravelly substratum	100	Outwash plains	No
DsB: Dresden silt loam, 2 to 6 percent slopes	Dresden	80-90	Plains	No
	Casco	5-11	Outwash plains	No
	Kegonsa	5-9	Plains	No
DsC2: Dresden silt loam, 6 to 12 percent slopes, eroded	Dresden- Eroded	85-95	Plains	No
	Casco- Eroded	3-8	Moraines	No
	Kegonsa	2-7	Plains	No
GP: Gravel pit	Pits-Gravel	99	_	Unranked
	Aquents	1	Depressions	Yes
KeB: Kegonsa silt loam, 2 to 6 percent slopes	Kegonsa	100	Outwash plains	No
PnB: Plano silt loam, till substratum, 2 to 6 percent slopes	Plano-Till substratum	80-90	Till plains	No
	Griswold	5-11	Till plains	No
	Elburn	5-9	Till plains	No

Table 1. Summary of NRCS Mapped Soils within the Study Area



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Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
RaA: Radford silt loam, 0 to 3 percent slopes	Radford	80-95	Depressions, flood plains	No
	Otter	2-8	Depressions, flood plains	Yes
	Sable	2-5	Depressions	Yes
	Sebewa	1-4	Depressions	Yes
	Drummer	0-3	Depressions	Yes
TrB: Troxel silt loam, 0 to 3 percent slopes	Troxel-Wet substratum	80-90	Depressions, moraines	No
	Elburn	5-11	Drainageways	No
	Plano	5-9	Till plains	No

### Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 4, Appendix A) depicts one (1) wetland area in the southern portion of the site associated with the abandoned gravel pit and one (1) wetland point near the southern edge of the Study Area. Wetlands delineated on-site were consistent with the location of the WWI mapped wetland associated with the abandoned gravel pit, however wetlands delineated in this area were more extensive. No wetlands were identified in the vicinity of the mapped wetland point.

### Previous Delineations and Landowner Contacts

There are no known previous wetland delineations for the Study Area.

### 3.2 Field Review

Two (2) wetlands were identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 11 sample points that were representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the Desktop Review. Appendix D provides site photographs, typically in various directions at sample point locations showing the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on



Figure 5 (Appendix A), and the wetlands are summarized in Table 2 and detailed in the following sections.

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W1	Open water pond; abandoned gravel pit	Isolated man-made pond	Less susceptible, 10-30 feet	1.06
W2	Lowland forest, drainageway			1.93
wetland and	waterway protective areas	fessional opinion. Jurisdictional a under NR 151 lies with the WDN restrictions. USACE has authority	R. Local	2.98

Table 2.	Summary	of Wetlands	Identified	within	the Study	Area

determining federal jurisdiction of wetlands and waterways.

### Wetland 1 (W1)

Wetland 1 (W1) is an isolated, open water, man-made pond associated with an abandoned gravel pit, located in the southern portion of the Study Area. No surface water inlets or outlets were observed. The perimeter of the pond consists of relatively steep embankments and the wetland is generally confined to the Ordinary High Water Mark (OHWM).

Vegetation within W1 was limited during the field evaluation due to the time of year, steep slopes, and open water. The only vegetation noted within the wetland were silver maple (Acer saccharinum, FACW) and cottonwood (Populus deltoides, FAC) trees which were rooted at the edge of the water. No emergent species were observed. Dominant vegetation within W1 met the hydrophytic vegetation parameter.

Hydric soil indicators noted in W1 included: Redox Dark Surface (F6) and Redox Depressions (F8). Soils are mapped as Gravel Pit (GP) within this location, which was consist with that observed (Figures 2, Appendix A).

The primary wetland hydrology indicators of High Water Table (A2), Saturation (A3), and Inundation Visible on Aerial Imagery (B7) were noted at the sample point within W1. Water



depths within the pond were estimated to range from one (1) to three (3) feet. Secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore, the wetland hydrology indicator was met within W1.

### Wetland 2 (W2)

Wetland 2 (W2) consists of wet meadow/shrub-carr wetland communities at the eastern most extent and beyond the eastern Study Area limits that is associated with a railroad corridor drainageway. The wetland transitions to a lowland forest on-site and narrows to a drainageway feature that flows to the southwest. The drainageway feature continues past the Study Area limits where it drains under Felland Road via a culvert. There are no mapped water features in the vicinity of the drainageway, either on-site or off-site. Ultimate surface water connections beyond the Study Area limits are unknown.

Vegetation within the lowland forest portions of W2 are dominated by cottonwood and silver maple in the tree stratum with scattered common buckthorn (*Rhamnus cathartica*, FAC) and honeysuckle (*Lonicera x bella*, FACU) in the shrub layer. The herbaceous layer was sparse due to the early growing season and the only species present was white avens (*Geum canadense*, FAC). The drainageway consisted primarily of unvegetated open water below the OHWM with reed canary grass (*Phalaris arundinacea*, FACW), silver maple, and American elm (*Ulmus americana*, FACW) within the floodplain. Dominant vegetation within W2 met the hydrophytic vegetation parameter.

Hydric soil indicators noted in W2 included: Redox Dark Surface (F6), Depleted matrix (F3), and Depleted Below Dark Surface (A11). Soils are mapped generally as non-hydric within the location of W2 and soils observed on-site were not consistent with those mapped by NRCS, presumably due to the historic use of the property that has altered the topography and drainage patterns (Figures 2, Appendix A).

Primary wetland hydrology indicators of High Water Table (A2), Saturation (A3), and Sediment Deposits (B2) were noted within the drainageway. At the margin of the lowland forest only Geomorphic Position (D2) was identified as a secondary hydrology indicator. However, wetland hydrology was assumed to be present during a normal to wet early growing season given other indicators such as hydrophytic vegetation, hydric soils, and saturated soils observed at 24 inches. Hydrology at this location was determined to be



naturally problematic given the seasonal nature of the hydroperiod and the climatic conditions were drier than normal during the time of the fieldwork.

### 3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts of up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 ("NR 151") requires that a "protective area" (buffer) be determined from the Ordinary High Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for "less susceptible" wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. "Moderately susceptible" wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50 feet; while "highly susceptible wetlands" are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland's professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR.



Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.

### 4.0 Conclusion

Heartland completed an assured wetland determination and delineation within the 5356 Felland Road Property on April 23, 2018 at the request of Stantec Consulting Services, Inc. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the WDNR Wetland Delineation Assurance Program. The Study Area lies in Section 23, T8N, R10E, Town of Burke, Dane County, WI.

Two (2) wetland areas were delineated and mapped within the 39.20-acre Study Area. The wetlands, which may be classified as an open water pond, lowland forest, and a drainageway total approximately 2.98 acres within the Study Area.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the USACE, state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE and WDNR for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

The wetland determination and delineation was completed by experienced and qualified professionals using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland



delineation was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

### 5.0 References

Eggers, S. D., & D. M. Reed. (2014). *Wetland Plants and Plant Communities of Minnesota and Wisconsin* (V. 3.1). U.S. Army Corps of Engineers, Regulatory Branch, St. Paul, MN District. See: <u>http://www.mvp.usace.army.mil/</u>.

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

Lichvar, R.W., D. L. Banks, W. N. Kirchner, and N.C. Melvin. (2016). *The National Wetland Plant List:* 2016 wetland ratings. Phytoneron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. See: <u>http://www.phytoneuron.net/</u>.

Midwestern Regional Climate Center. (2014). *cli-MATE* [climate data access tool]. See: <u>http://mrcc.isws.illinois.edu/CLIMATE/</u>.

National Oceanic and Atmospheric Administration (NOAA). (2015) Regional Climate Centers Applied Climate Information System. *WETS table*. See: <u>http://agacis.rcc-acis.org</u>.

NOAA National Center for Environmental Information. (2018) *Historic Palmer Drought Indices.* See: <u>https://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/psi</u>

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. (2018). *Soil Survey Geographic (SSURGO) Database*. See: <u>http://websoilsurvey.nrcs.usda.gov/</u> or <u>http://datagateway.nrcs.usda.gov/</u>.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. (2018). *Web Soil Survey*. See: <u>http://websoilsurvey.nrcs.usda.gov/</u>.

U.S. Army Corps of Engineers (USACE) and Wisconsin Department of Natural Resources (WDNR). (March 2015). *"Guidance for Submittal of Delineation Reports to the St. Paul* 



*District Army Corps of Engineers and the Wisconsin Department of Natural Resources"*. See: <u>http://dnr.wi.gov/topic/wetlands/documents/FinalWisconsinDelineationGuidance.pdf</u>.

USACE. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0*). (2011). ed. J.S. Wakely, R.W. Lichvar, C.V. Nobel, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture, Farm Service Agency (USDA, FSA). National Agriculture Imagery Program (NAIP). Salt Lake City, UT: Aerial Photography Field Office.

USDA, Natural Resource Conservation Service (NRCS). (2010). *Field Indicators of Hydric Soils in the United States*, Version 8.1. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

United States Department of Interior (USDI) U.S. Geological Survey (USGS). *Wisconsin 7.5 Minute Series (Topographic) Maps.* 1:24,000. Reston, VA.

Wetland Training Institute, Inc. (WTI) (2010). *Pocket guide to hydric soil field indicators.* (Robert J. Pierce, Ed.). (7<sup>th</sup> ed.). Glenwood, NM: Wetland Training Institute, Inc.

Willmott, C.J. and K. Matsuura. (2016). *Web-Based Water-Budget Interactive Modeling Program (WebWIMP).* University of Delaware Department of Geography. Newark, DE. See: climate.geog.udel.edu/~wimp/

Wisconsin Department of Natural Resources (WDNR), Surface Water Data Viewer Interactive Web-mapping Tool. (2018). [Digital inventory of Wisconsin wetlands]. *Wisconsin Wetland Inventory.* 

WDNR, Division of Water. (2010). [24k hydrography geospatial data layer]. See: <u>ftp://dnrftp01.wi.gov/geodata/hydro\_24k/</u>.

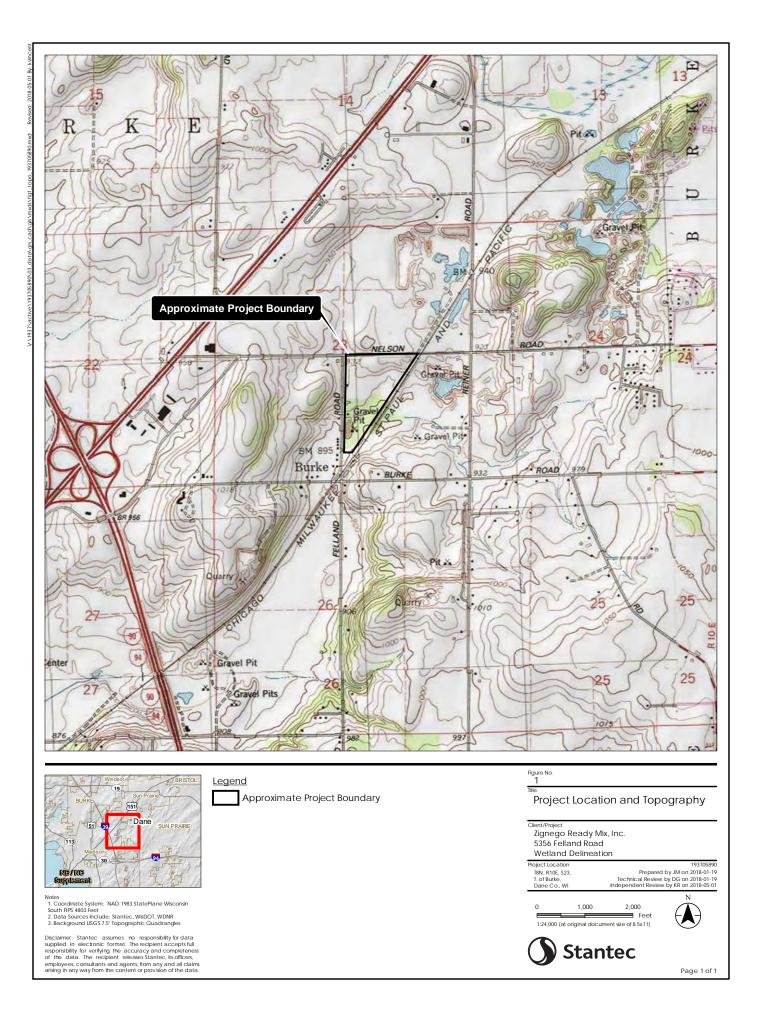
Woodward, D.E. ed. (1997). *Hydrology Tools for Wetland Determination*, WETS Analysis, Chapter 19. Engineering Field Handbook. USDA, NRCS, Fort Worth, TX.

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## Appendix A | Figures









Notes 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet 2. Data Sources Include: Stantec, WisDOT, WDNR, NRCS 3. Orthophotography: 2017 NAP

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#### Legend

Approximate Project Boundary NRCS Soil Survey Data

- Hydric Ratings
- Predominantly Hydric Soil
  - Partially Hydric Soil ) Non-Hydric Soil
- DNR 24k Hydrography -🥜 Perennial Stream
- Intermittent Stream S Waterbody

Figure No. 2 Title

#### NRCS Soil Survey Data Hydric Ratings Client/Project Zignego Ready Mix, Inc. 5356 Felland Road Wetland Delineation Project Location T8N, R10E, S23, T. of Burke, Dane Co., WI 193705890 Prepared by JM on 2018-01-19 Technical Review by DG on 2018-01-19 Independent Review by KR on 2018-05-01 400 0 200 Feet 1:4,800 (at original document size of 8.5x11) Stantec







Notes 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet 2. Data Sources Include: Stantec, WisDOT, WDNR, NRCS 3. Orthophotography: 2017 NAP

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#### <u>Legend</u>

Approximate Project Boundary

- NRCS Soil Survey Data Wetland Indicator Soils
- Very Poorly Drained
  - > Poorly Drained
- Somewhat Poorly Drained
- DNR 24k Hydrography
- ∼ Perennial Stream

Figure No.

- 🔨 Intermittent Stream
- S Waterbody

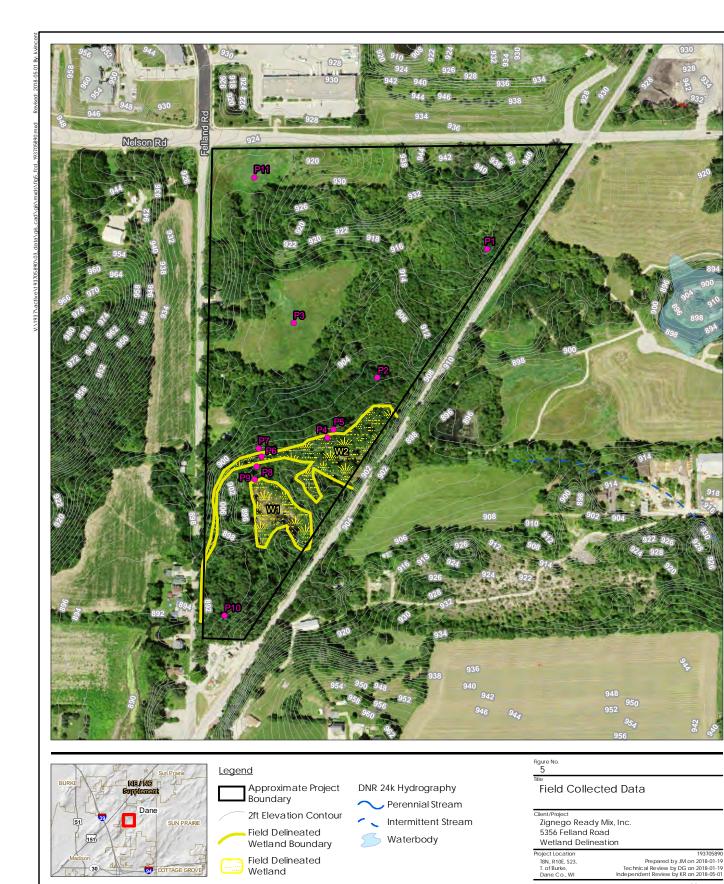
#### Illie NRCS Soil Survey Data Wetland Indicator Soils Clent/Project Zignego Ready Mix, Inc. 5356 Felland Road Wetland Delineation Project Location 18N, Rtot. 523, To flurke, Dane Co., Wi Dane Co., Wi Project Location 14,800 (at original document size of 8.5x11) Stantec

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### Figure 4 - Wisconsin Wetland Inventory







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## Appendix B | WETS Analysis

#### WETS Analysis Worksheet

Reference:

Project Name:	5356 Felland Road
Project Number:	20180033
Period of interest:	February - April 2018
Station:	Dane County Regional AP, WI
County:	Dane, WI

#### Long-term rainfall records (from WETS table)

		3 years in 10		3 years in 10
	Month	less than	ss than Normal great	
1st month prior:	April	2.88	3.74	4.34
2nd month prior:	March	1.39	2.32	2.82
3rd month prior:	February	0.80	1.38	1.67
		Sum =	7.44	

		Site d	etermination	
	Site	Condition	Condition**	Month
	Rainfall (in)	Dry/Normal*/Wet	Value	Weight
	2.14	Dry	1	3
	0.74	Dry	1	2
	2.50	Wet	3	1
Sum =	5.38			Sum*** =
urrence			Determination:	

\*Normal precipitation with 30% to 70% probability of occurrence

Wet Dry

Normal

**Condition v	alue:	***If sum is:	
Dry =	1	6 to 9	then period has been drier than normal
Normal =	2	10 to 14	then period has been normal
Wet =	3	15 to 18	then period has been wetter than normal

Precipitation data source: Midwest Regional Climate Center, cli-MATE: MRCC Application Tools Environment

Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

## WETS Station: MADISON DANE COUNTY REGIONAL AP, WI

Requested years: 1988 - 2017

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	27.7	11.9	19.8	1.40	0.95	1.67	4	13.0	
Feb	31.4	14.6	23.0	1.38	0.80	1.67	4	11.7	
Mar	44.0	25.1	34.5	2.32	1.39	2.82	5	6.9	
Apr	57.7	36.0	46.8	3.74	2.88	4.34	8	2.1	
May	69.3	46.6	58.0	3.65	2.43	4.38	7	0.2	
Jun	79.1	57.0	68.0	5.03	2.95	6.11	8	0.0	
Jul	82.3	61.3	71.8	4.30	3.15	5.05	6	0.0	
Aug	80.4	59.5	69.9	4.14	2.60	5.00	6	0.0	
Sep	73.3	50.6	62.0	3.10	1.94	3.75	5	0.0	
Oct	60.2	39.5	49.9	2.47	1.62	2.96	5	0.5	
Nov	45.6	28.8	37.2	2.22	1.36	2.69	5	3.0	
Dec	31.8	17.1	24.5	1.65	1.01	2.00	4	12.5	
Annual:					31.67	38.51			
Average	56.9	37.3	47.1	-	-	-	-	-	
Total	-	-	-	35.39			68	49.8	

#### GROWING SEASON DATES

Years with missing data:	24 deg =	28 deg =	32 deg =
	0	0	0
Years with no occurrence:	24 deg =	28 deg =	32 deg =
	0	0	0
Data years used:	24 deg =	28 deg =	32 deg =
	30	30	30
Probability	24 F or	28 F or	32 F or
	higher	higher	higher
50 percent *	4/5 to	4/20 to	5/5 to
	10/30:	10/15:	10/6: 154
	208 days	178 days	days
70 percent *	4/1 to	4/15 to	5/1 to
	11/4: 217	10/20:	10/10:
	days	188 days	162 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
1939										1. 67	0. 24	0. 29	2.20
1940	0.91	0.76	1.07	2.40	2.70	5.04	2.88	6.76	0. 81	2. 39	2. 49	1. 21	29. 42
1941	2.72	0.78	1.82	1.93	3.03	3.42	2.93	1.29	9. 87	2. 86	0. 93	1. 29	32. 87
1942	1.16	0.50	1.46	0.81	4.49	4.26	3.58	4.14	3. 43	2. 44	3. 27	2. 55	32. 09
1943	2.15	0.76	2.48	0.99	2.88	2.33	1.54	2.31	0. 37	0. 83	3. 15	0. 99	20. 78
1944	1.40	1.69	2.46	3.74	2.33	3.42	2.77	1.54	3. 05	0. 29	1. 54	1. 14	25. 37
1945	0.31	1.40	1.40	2.89	5.27	2.81	2.65	4.07	6. 27	0. 78	2. 34	1. 47	31. 66
1946	1.97	0.88	2.88	0.94	2.14	2.81	0.95	1.63	1. 28	1. 79	2. 08	1. 54	20. 89

1947	2.26	0.29	1.73	3.68	4.35	3.98	2.17	1.58	6. 03	1. 85	2. 82	1. 72	32. 46
1948	0.49	2.13	2.85	2.97	2.90	2.55	2.55	0.70	1. 87	1. 29	3. 56	1. 75	25. 61
1949	1.97	1.26	2.35	1.10	2.22	6.43	5.76	2.20	1. 12	1. 86	1. 04	1. 70	29. 01
1950	2.43	1.65	2.34	2.67	3.43	6.24	10.93	2.69	2. 09	1. 23	1. 04	1. 97	38. 71
1951	1.44	1.70	2.13	4.42	3.00	2.55	3.08	3.08	1. 56	5. 37	2. 17	1. 47	31. 97
1952	2.21	0.60	2.92	1.21	3.18	4.08	7.60	4.73	0. 49	0. 06	2. 94	1. 67	31. 69
1953	0.64	2.77	2.58	3.12	1.02	5.15	4.28	3.49	2. 11	1. 81	0. 52	2. 17	29. 66
1954	0.76	0.63	1.19	4.09	2.98	7.36	5.73	2.78	3. 82	3. 72	0. 81	1. 20	35. 07
1955	0.65	1.67	0.96	3.65	2.10	2.78	3.93	1.55	0. 80	3. 24	0. 57	0. 59	22. 49
1956	0.43	1.00	2.53	3.54	5.11	3.24	4.50	5.64	1. 42	0. 31	2. 78	1. 01	31. 51
1957	0.41	0.38	1.19	2.40	5.80	6.41	4.00	4.86	0. 95	2. 14	2. 91	1. 41	32. 86
1958	0.52	0.08	0.38	2.73	3.93	2.16	1.69	2.06	2. 44	2. 50	2. 29	0. 31	21. 09
1959	1.40	1.58	2.90	4.01	3.06	3.86	4.12	5.68	3. 44	5. 55	2. 29	2. 45	40. 34
1960	2.19	1.14	1.93	4.02	6.26	2.09	6.04	6.18	3. 90	3. 32	1. 47	0. 25	38. 79
1961	0.19	1.01	3.42	1.33	1.17	1.84	3.67	1.78	7. 92	3. 75	3. 94	1. 02	31. 04
1962	1.12	1.39	1.73	1.43	3.01	2.09	4.39	2.04	1. 31	1. 68	0. 34	02 0. 90	21. 43
1963	0.76	0.39	2.33	1.67	1.82	8.15	2.29	3.23	2. 30	0. 64	1. 96	0. 65	26. 19
1964	0.93	0.26	2.12	3.15	3.87	2.28	4.28	2.52	1. 85	0. 08	1. 94	0. 34	23. 62
1965	1.80	0.74	2.51	2.94	1.86	2.31	3.30	6.77	9. 22	1. 69	1. 96	2. 50	37. 60
1966	1.07	1.36	2.11	1.54	4.31	2.91	3.24	3.83	0. 51	1. 65	1. 28	2. 62	26. 43
1967	1.63	1.17	1.49	2.57	3.53	6.46	2.51	2.71	2. 68	5. 52	1. 83	1. 89	43 33. 99
1968	0.56	0.49	0.59	4.18	2.02	7.82	2.54	2.58	4. 45	0. 85	1. 74	2. 89	30. 71
1969	2.26	0.18	1.47	2.72	3.45	7.96	4.28	0.96	1. 35	2. 65	0. 70	1. 66	29. 64
1970	0.44	0.16	1.17	2.53	6.09	2.26	2.42	0.97	8. 82	2. 65	1. 06	2. 12	30. 69
1971	1.48	2.59	1.52	2.42	0.98	2.27	1.65	3.96	1. 87	1. 30	3. 48	3. 64	27. 16
1972	0.40	0.42	2.23	2.02	2.83	1.65	3.49	7.47	5. 26	2. 42	40 0. 86	04 1. 91	30. 96
1973	1.54	1.20	5.04	7.11	5.27	0.81	2.68	2.53	3. 59	42 2. 30	1. 48	1. 98	35. 53
1974	2.45	1.17	3.43	4.24	5.77	3.86	2.69	4.60	1. 08	3. 18	40 1. 79	1.	36. 06
1975	0.98	1.54	3.09	4.19	4.57	4.30	6.05	5.25	08 0. 84	0. 64	79 2. 79	80 0. 29	34. 53
1976	0.56	1.72	4.75	4.80	1.95	1.38	1.46	1.99	0.	04 1. 49	0.	0.	21. 08
1977	0.53	1.44	3.03	2.59	2.52	2.63	6.63	5.19	50 2. 84	49 1. 41	11 2. 12	37 1. 60	32. 53
1978	1.03	0.24	0.28	3.50	3.96	9.95	4.54	1.63	5.	1.	3.	1.	36.
1979	1.69	0.90	2.67	2.46	2.70	2.53	2.80	4.96	44 0.	11 3.	05 2. 27	71 1. 02	44 28.
1980	1.11	0.64	0.68	2.36	2.08	3.43	2.67	9.49	11 7.	10 1.	27 1.	93 1.	12 34.

19810.142.470.335.420.644.994.817.061. $a.$														
1982       1.42       0.77       2.10       3.26       4.24       1.45       9.27       9.28       9.07       1.28       9.07       2.28       4.21       1.18       9.27       9.08       2.8       3.8       3.8       3.82       7.01       1.98       1.8       1.8       1.8       3.8       3.25       7.01       1.98       1.8       4.8       1.8       1.8       1.8       3.8       3.25       7.01       1.98       4.8       4.8       1.8       1.8       1.8       3.8       3.8       3.8       3.8       1.8       1.8       3.8       3.8       1.8       3.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       3.8       1.8       1.8       3.8       1.8       1.8       3.8       1.8       1.8       3.8       1.8       1.8       3.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8       1.8	1981	0.14	2.47	0.33	3.42	0.64	4.99	4.81	7.06					
1983       0.63       2.26       2.70       2.23       4.21       1.85       1.92       5.05       2.8       2.8       3.9       1.7         1984       0.36       1.26       1.18       3.88       3.32       7.01       1.166       1.89       2.7       5.8       1.8       2.8       3.9       3	1982	1.42	0.17	2.11	3.26	4.34	3.40	3.47	2.67	1.	1.	4.	3.	31.
1984       0.36       1.26       1.15       3.86       3.32       7.01       1.96       1.88       2.9       5.6       4.8       5.2       3.8       3.00       4.48       2.99       5.6       4.8       5.2       3.8       3.00       4.48       2.99       5.6       4.8       5.2       3.8       3.00       4.43       4.83       6.0       1.0       3.8       0.0       3.1       3.24       4.31       4.83       6.0       1.0       3.8       1.0 <td< td=""><td>1983</td><td>0.53</td><td>2.26</td><td>2.70</td><td>2.23</td><td>4.21</td><td>1.85</td><td>1.92</td><td>5.05</td><td>2.</td><td>2.</td><td>3.</td><td>2.</td><td>31.</td></td<>	1983	0.53	2.26	2.70	2.23	4.21	1.85	1.92	5.05	2.	2.	3.	2.	31.
1985         1.43         1.89         3.13         1.52         3.35         3.06         4.48         2.98         5.6         4.5         5.7         2.9         84           1966         1.02         2.72         1.55         2.27         1.97         3.24         4.31         4.83         6.6         1.5         0.8         0.62         1.99         2.46         3.90         1.17         3.26         7.16         3.         1.6         3.5         1.6         0.7         1.69         1.69         1.72         1.67         4.47         6.46         0.6         1.8         0.0         0.8         0.0         0.8         0.0         0.8         0.0         0	1984	0.36	1.26	1.15	3.86	3.32	7.01	1.96	1.89	2.	5.	1.	2.	33.
1866       1.92       2.72       1.55       2.27       1.97       3.24       4.31       4.88       6.2       1.9       2.40       3.90       1.17       3.20       7.16       3.       1.2       3.4       4.9       3.2         1868       1.82       0.46       1.20       2.65       0.92       2.06       2.44       2.95       3.3       1.0       3.8       1.5       7.7         1999       0.61       0.57       1.69       1.07       1.67       4.97       6.46       0.9       1.8       0.6       2.9         1990       1.60       0.99       4.18       1.90       5.35       4.88       2.61       6.03       1.6       3.8       5.9       3.8       1.9       1.9       1.9         1992       0.78       1.34       1.90       3.17       1.12       1.53       5.54       2.88       1.8       1.9       3.9       1.9	1985	1.43	1.89	3.13	1.52	3.35	3.06	4.48	2.98	5.	4.	5.	2.	38.
1987       0.68       0.62       1.99       2.46       3.80       1.17       3.26       7.16       8,       1.8       8.4       0.4       3.3       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.0       0.0       2.0       3.75       5.18       2.44       9.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       3.0       1.0       1.0       1.0       1.0       3.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0	1986	1.02	2.72	1.55	2.27	1.97	3.24	4.31	4.38	6.	1.	1.	0.	31.
1988       1.82       0.46       1.20       2.65       0.92       2.06       2.44       2.95       3.3       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.8       1.0       3.0	1987	0.68	0.62	1.99	2.46	3.90	1.17	3.26	7.16	3.		3.	4.	33.
1989       0.61       0.57       1.69       1.69       1.72       1.67       4.97       6.46       6.9       1.8       0.9       0.61       2.6       2.3         1990       1.60       0.99       4.18       1.90       5.35       4.88       2.61       6.03       6.4       2.6       3.8       5.4         1991       1.17       0.44       4.24       4.89       2.20       3.75       5.18       2.44       5.5       8.8       7.1       3.9         1992       0.78       1.34       1.90       3.17       1.12       1.53       5.54       2.48       5.5       1.4       8.2       3.2       3.31       6.67       0.34       5.57       3.9       8.4       3.9       3.9       3.4         1995       2.12       0.66       2.17       4.14       3.92       1.22       4.36       5.58       1.4       1.7       7.7       8.3         1996       2.53       0.63       0.62       2.76       2.50       9.64       4.08       1.44       1.4       1.2       1.5       1.5       9.9       9.4       9.9       9.9       9.9       9.9       9.9       9.9       9.9 <td< td=""><td>1988</td><td>1.82</td><td>0.46</td><td>1.20</td><td>2.65</td><td>0.92</td><td>2.06</td><td>2.44</td><td>2.95</td><td>3.</td><td>1.</td><td>3.</td><td>1.</td><td>24.</td></td<>	1988	1.82	0.46	1.20	2.65	0.92	2.06	2.44	2.95	3.	1.	3.	1.	24.
1990       1.60       0.99       4.18       1.90       5.35       4.88       2.61       6.03       1.1       2.5       1.5       3.6       5.8       1.0       1.0       0.0       1.17       0.44       4.24       4.89       2.20       3.75       5.18       2.34       3.6       5.8       1.0       1.0       0.0       1.18       3.20       5.33       3.81       6.67       9.34       5.57       1.4       0.6       1.8       3.2       1.33       1.00       1.18       3.20       5.56       1.10       6.55       1.6       0.6       2.7       1.33       5.66       1.10       6.55       1.6       0.6       2.7       1.33       5.66       1.10       6.55       1.6       0.6       2.7       1.33         1995       2.12       0.66       2.17       4.14       3.92       1.22       4.36       5.8       1.8       1.9	1989	0.61	0.57	1.69	1.69	1.72	1.67	4.97	6.46				0.	23.
1992         0.78         1.34         1.90         3.17         1.12         1.53         5.54         2.48         5.9         6.8         8.9         9.9         7.3           11993         1.60         1.18         3.29         5.33         3.81         6.67         9.34         5.57         3.4         6.9         5.8         8.4         5.3         3.41         6.67         9.34         5.56         1.8         4.9         5.3         3.4         6.67         9.34         5.56         1.8         4.9         5.3         7.7         7.8           1995         2.12         0.06         2.17         4.14         3.92         1.22         4.36         5.58         1.8         1.9         7.7         7.8           1996         2.53         0.53         0.62         2.76         2.95         9.59         4.08         1.84         1.9	1990	1.60	0.99	4.18	1.90	5.35	4.88	2.61	6.03	1.	2.	1.	3.	36.
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1991	1.17	0.44	4.24	4.89	2.20	3.75	5.18	2.34	3.	5.	3.	1.	39.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1992	0.78	1.34	1.90	3.17	1.12	1.53	5.54	2.48		1.	4.	2.	32.
1994       1.46       2.76       0.46       2.57       1.33       5.66       4.10       4.56       6.6       6.7       7.8       3.8         1995       2.12       0.06       2.17       4.14       3.92       1.22       4.36       5.58       7.8       2.9       7.7       7.3         1996       2.53       0.53       0.82       2.76       2.95       9.69       4.08       1.44       1.7       7.4       1.52       2.33       1.8       1.2       1.5       2.95       9.69       4.08       1.44       1.7       7.8       7.9       7.8         1997       1.24       2.52       1.54       2.50       1.94       5.23       6.23       2.33       1.8       1.8       1.9       9.9       9.9         1998       2.24       1.44       5.46       4.10       4.58       7.46       2.50       4.24       2.8       3.9       1.9       9.9         2000       0.91       1.95       1.17       3.18       9.63       8.63       3.27       3.94       3.9       6.8       2.0       1.9       1.3       3.8       2.2       1.9       1.3       3.8       2.2       1.9 <t< td=""><td>1993</td><td>1.60</td><td>1.18</td><td>3.29</td><td>5.33</td><td>3.81</td><td>6.67</td><td>9.34</td><td>5.57</td><td></td><td></td><td></td><td></td><td></td></t<>	1993	1.60	1.18	3.29	5.33	3.81	6.67	9.34	5.57					
1996         2.53         0.53         0.82         2.76         2.95         9.69         4.08         1.44         1.7         1.2         1.9           1997         1.24         2.52         1.54         2.50         1.94         5.23         6.23         2.33         1.1         1.1         2.5         2.4           1998         2.24         1.44         5.46         4.10         4.58         7.46         2.50         4.24         2.8         2.8         3.9         1.5         2.5         7.4           1999         2.10         0.91         0.47         6.91         3.72         5.57         4.49         3.26         1.5         8.8         3.9         6.8         2.0         1.8         3.4           2000         0.91         1.95         1.17         3.18         9.63         8.63         3.27         3.94         3.8         9.8         9.9         9.4           2001         0.99         2.64         0.59         3.07         4.16         5.40         3.99         7.6         3.9         7.9         7.9         7.9           2002         0.63         0.50         1.77         2.95         3.67         2.	1994	1.46	2.76	0.46	2.57	1.33	5.66	4.10	4.56					33.
1997         1.24         2.52         1.54         2.50         1.94         5.23         6.23         2.33         1.8         2.5         1.5         2.6           1998         2.24         1.44         5.46         4.10         4.58         7.46         2.50         4.24         2.6         2.5         3.8         2.5         1.5         3.9         3.5         2.9         3.9           1999         2.10         0.91         0.47         6.91         3.72         5.57         4.49         3.26         1.6         8.9         3.9         3.4           2000         0.91         1.95         1.17         3.18         9.63         8.63         3.27         3.94         3.6         8.9         1.9         1.3         8.5           2001         0.99         2.64         0.59         3.07         4.16         5.40         3.09         7.64         5.3         2.2         1.3         8.3           2002         0.63         2.17         1.70         3.45         2.92         3.70         2.06         3.04         2.4         1.9         3.3         1.4         3.3         1.4         3.3         3.7         1.3         8.3 </td <td>1995</td> <td>2.12</td> <td>0.06</td> <td>2.17</td> <td>4.14</td> <td>3.92</td> <td>1.22</td> <td>4.36</td> <td>5.58</td> <td></td> <td></td> <td></td> <td></td> <td></td>	1995	2.12	0.06	2.17	4.14	3.92	1.22	4.36	5.58					
1998         2.24         1.44         5.46         4.10         4.58         7.46         2.50         4.42         2.8         2.9         94           1999         2.10         0.91         0.47         6.91         3.72         5.57         4.49         3.26         1.5         88         1.1         8.63         3.27         3.94         3.6         8.63         3.27         3.94         3.6         2.0         1.5         1.1         3.18         9.63         8.63         3.27         3.94         3.6         2.0         1.3         3.4           2001         0.99         2.64         0.59         3.07         4.16         5.40         3.09         7.64         5.3         2.0         1.3         3.4           2002         0.63         2.17         1.70         3.45         2.92         3.70         2.06         3.04         2.4         1.0         1.4         3.61         1.76         1.084         3.93         6.05         3.94         1.4         3.61         1.76         1.084         3.93         6.05         3.94         1.4         3.61         1.72         2.95         3.67         2.10         1.42         1.6         3.4	1996	2.53	0.53	0.82	2.76	2.95	9.69	4.08	1.84					
1999         2.10         0.91         0.47         6.91         3.72         5.57         4.49         3.26         1.5         8.8         2.0         9.6         9.3           2000         0.91         1.95         1.17         3.18         9.63         8.63         3.27         3.94         3.9         3.6         3.9         3.8         3.9         3.0	1997	1.24	2.52	1.54	2.50	1.94	5.23	6.23	2.33					
1         1         1         3.18         9.63         8.63         3.27         3.94         8.9         8.9         1.95         1.17         3.18         9.63         8.63         3.27         3.94         8.9         8.9         8.9         1.95         1.17         3.18         9.63         8.63         3.27         3.09         7.64         5.9         8.2         1.9         1.3         8.63           2001         0.99         2.64         0.59         3.07         4.16         5.40         3.09         7.64         5.9         6.2         1.9         1.3         8.63           2002         0.63         2.17         1.70         3.45         2.92         3.70         2.06         3.04         7.4         6.0         7.9         7.9           2003         0.62         1.44         3.61         1.76         10.84         3.93         6.05         3.96         1.0         3.9         7.0	1998	2.24	1.44	5.46	4.10	4.58	7.46	2.50	4.24					
1       0.99       2.64       0.59       3.07       4.16       5.40       3.09       7.64       5.3       62       1.5       1.3       8.5         2002       0.63       2.17       1.70       3.45       2.92       3.70       2.06       3.04       2.4       1.0       1.0       6.7       1.9         2003       0.63       0.50       1.72       2.95       3.67       2.10       4.24       0.87       4.1       1.0       7.4       5.3       6.2       1.4       3.0       7.4         2004       0.62       1.44       3.61       1.76       10.84       3.93       6.05       3.96       1.0       3.2       1.5       1.6       3.9         2005       2.00       1.45       1.56       1.68       3.96       1.65       3.92       1.22       1.5       0.5       3.6       9.9       4.6         2005       2.00       1.45       1.56       1.64       4.61       2.99       4.45       5.43       3.3       2.7       2.4       3.6       4.4         2006       1.96       0.81       2.34       4.61       2.99       4.51       5.18       3.5       3.5 <td< td=""><td>1999</td><td>2.10</td><td>0.91</td><td>0.47</td><td>6.91</td><td>3.72</td><td>5.57</td><td>4.49</td><td>3.26</td><td></td><td></td><td></td><td></td><td></td></td<>	1999	2.10	0.91	0.47	6.91	3.72	5.57	4.49	3.26					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	2000	0.91	1.95	1.17	3.18	9.63	8.63	3.27	3.94					
2003       0.36       0.50       1.72       2.95       3.67       2.10       4.24       0.87       4.       1.       7.       2.0       3.1         2004       0.62       1.44       3.61       1.76       10.84       3.93       6.05       3.96       1.0       3.0       1.6       3.92       1.22       1.5       0.6       3.6       3.6       3.6       3.6       3.5       3.	2001	0.99	2.64	0.59	3.07	4.16	5.40	3.09	7.64					
2004       0.62       1.44       3.61       1.76       10.84       3.93       6.05       3.96       1.0       3.0       1.1       1.6       3.93         2005       2.20       1.45       1.56       1.68       3.96       1.65       3.92       1.22       1.5       0.6       3.6       0.6       3.8       0.9       2.0         2006       1.96       0.81       2.34       5.04       4.61       2.29       4.45       5.43       3.8       2.7       2.4       3.6       7.3         2007       0.84       1.59       3.39       4.68       1.40       4.82       2.69       1.518       2.5       3.5       0.9       3.3       4.4         2008       2.17       3.30       2.47       6.43       2.55       10.93       5.62       1.41       2.3       2.5       1.9       3.9       6.8       3.9       6.3       4.4       4.1         2008       2.17       3.30       2.47       6.43       3.68       4.17       1.94       2.49       4.8       3.9       1.2       2.9       1.6       3.5         2010       0.54       1.91       6.19       4.43       3.68	2002	0.63	2.17	1.70	3.45	2.92	3.70	2.06	3.04		2. 10			26. 19
2005       2.20       1.45       1.56       1.68       3.96       1.65       3.92       1.22       1.5       0.6       3.6       0.9       24.         2006       1.96       0.81       2.34       5.04       4.61       2.29       4.45       5.43       3.3       2.7       2.4       3.6       70         2007       0.84       1.59       3.39       4.68       1.40       4.82       2.69       15.18       2.5       3.5       0.9       3.3       4.4         2008       2.17       3.30       2.47       6.43       2.55       10.93       5.62       1.41       2.3       2.0       1.6       3.9       4.6         2009       0.54       1.91       6.19       4.43       3.68       4.17       1.94       2.49       4.8       3.9       3.9       4.6         2010       0.54       1.91       6.19       4.43       3.68       4.17       1.94       2.49       4.8       3.9       3.9       3.8         2010       0.54       1.91       6.19       4.43       3.68       4.17       1.94       2.49       3.5       3.0       3.1       3.5       3.6       3.6	2003	0.36	0.50	1.72	2.95	3.67	2.10	4.24	0.87					
20061.960.812.345.044.612.294.455.433.32.72.41.63.620070.841.593.394.681.404.822.6915.182.3.53.93.34.420082.173.302.476.432.5510.935.621.412.22.01.63.94.620090.541.916.194.433.684.171.942.494.83.33.13.93.820100.881.020.713.653.798.387.983.922.63.03.93.93.620111.281.592.963.612.403.551.853.063.11.53.52.33.620121.401.032.612.853.190.314.001.581.13.2.21.63.520132.872.412.415.836.5710.864.001.533.91.12.01.21.01.520140.651.241.265.133.479.551.085.431.3.1.1.35	2004	0.62	1.44	3.61	1.76	10.84	3.93	6.05	3.96					
2007       0.84       1.59       3.39       4.68       1.40       4.82       2.69       15.18       2.5       3.5       3.9       3.4       4.4         2008       2.17       3.30       2.47       6.43       2.55       10.93       5.62       1.41       2.3       2.0       1.6       3.9       4.4         2009       0.54       1.91       6.19       4.43       3.68       4.17       1.94       2.49       4.8       3.0       1.2       3.0       3.6       3.5         2010       0.88       1.02       0.71       3.65       3.79       8.38       7.98       3.92       2.6       3.0       1.9       3.7         2011       1.28       1.59       2.96       3.61       2.40       3.55       1.85       3.06       3.1       3.5       3.5       3.6         2012       1.40       1.03       2.61       2.85       3.19       0.31       4.00       1.58       3.1       3.5       3.5       3.6       3.5       3.5       3.6       9.0       2.6       2.6       3.5       4.00       1.58       3.1       5.6       9.0       2.6       6.5       3.5       4.00 <td< td=""><td>2005</td><td>2.20</td><td>1.45</td><td>1.56</td><td>1.68</td><td>3.96</td><td>1.65</td><td>3.92</td><td>1.22</td><td></td><td></td><td></td><td></td><td></td></td<>	2005	2.20	1.45	1.56	1.68	3.96	1.65	3.92	1.22					
453539634120082.173.302.476.432.5510.935.621.412.2.1.3.44.20090.541.916.194.433.684.171.942.494.3.1.3.3.820100.881.020.713.653.798.387.983.922.2.1.1.3.3.820111.281.592.963.612.403.551.853.063.1.3.3.2.30.20121.401.032.612.853.190.314.001.581.4.0.2.2.3.3.3.2.3.620132.872.412.415.836.5710.864.001.533.1.3.1.1.3.1.1.3.20140.651.241.265.133.479.551.085.431.3.1.1.3.	2006	1.96	0.81	2.34	5.04	4.61	2.29	4.45	5.43					
20090.541.916.194.433.684.171.942.494.3.1.3.38.20100.881.020.713.653.798.387.983.922.2.2.1.1.3.35.20111.281.592.963.612.403.551.853.063.1.3.3.2.30.35.20121.401.032.612.853.190.314.001.581.4.0.2.2.3.3.3.3.2.3.	2007	0.84	1.59	3.39	4.68	1.40	4.82	2.69	15.18					
2010       0.88       1.02       0.71       3.65       3.79       8.38       7.98       3.92       2.       2.       1.       1.       3.7         2011       1.28       1.59       2.96       3.61       2.40       3.55       1.85       3.06       3.       1.       3.5       2.3       3.5         2012       1.40       1.03       2.61       2.85       3.19       0.31       4.00       1.58       1.       4.       0.       2.       2.       3.5       3.6       3.5       1.85       3.06       3.       1.       3.5       2.3       3.6         2012       1.40       1.03       2.61       2.85       3.19       0.31       4.00       1.58       1.       4.       0.       2.       2.6       3.6       3.6       3.6       1.       3.5       5.4       0.6       3.6	2008	2.17	3.30	2.47	6.43	2.55	10.93	5.62	1.41					44.
2011       1.28       1.59       2.96       3.61       2.40       3.55       1.85       3.06       3.       1.       3.       2.       30.       34       4.0       3.1       3.5       2.3       34.       35.       2.40       3.55       1.85       3.06       3.       1.       3.5       2.3       35.       35.       3.61       2.40       3.55       1.85       3.06       3.       1.       3.5       2.3       35.       3.4       3.1       3.5       2.3       35.       3.61       2.40       3.55       1.85       3.06       3.       1.       3.5       2.3       35.       3.5       3.1       3.5       2.3       35.       3.5       3.5       3.1       3.5       2.3       35.       5.4       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.5       3.6       3.5       3.6       3.5       3.6	2009	0.54	1.91	6.19	4.43	3.68	4.17	1.94	2.49		3. 80			38. 35
31       35       35       23       54         2012       1.40       1.03       2.61       2.85       3.19       0.31       4.00       1.58       1.       4.       0.       2.       26.         2013       2.87       2.41       2.41       5.83       6.57       10.86       4.00       1.53       3.       1.       2.       1.       45.         2014       0.65       1.24       1.26       5.13       3.47       9.55       1.08       5.43       1.       3.       1.       1.       35.	2010	0.88	1.02	0.71	3.65	3.79	8.38	7.98	3.92					
33       56       90       60       36         2013       2.87       2.41       5.83       6.57       10.86       4.00       1.53       3.       1.       2.       1.       45.         2014       0.65       1.24       1.26       5.13       3.47       9.55       1.08       5.43       1.       3.       1.       1.       35.	2011	1.28	1.59	2.96	3.61	2.40	3.55	1.85	3.06			3. 35	2. 23	30. 54
19 89 20 62 38 2014 0.65 1.24 1.26 5.13 3.47 9.55 1.08 5.43 1. 3. 1. 1. 35.	2012	1.40	1.03	2.61	2.85	3.19	0.31	4.00	1.58					
2014 0.65 1.24 1.26 5.13 3.47 9.55 1.08 5.43 1. 3. 1. 1. 35. 84 09 54 03 31	2013	2.87	2.41	2.41	5.83	6.57	10.86	4.00	1.53			2. 20		45. 38
	2014	0.65	1.24	1.26	5.13	3.47	9.55	1.08	5.43		3. 09			35. 31

2015	0.66	0.54	0.76	4.38	4.18	3.15	5.02	4.10	5. 99	2. 73	4. 75	3. 33	39. 59
2016	0.98	0.52	3.96	2.11	2.22	5.35	5.23	7.87	8. 46	4. 96	1. 87	2. 03	45. 56
2017	2.76	1.94	2.83	5.30	2.83	6.73	6.52	3.85	0. 55	3. 56	0. 68	0. 73	38. 28
2018	1.68	2.50	0.74	2.14	9.78	M4.16							21. 00
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



Stantec Consulting Services, Inc. 5356 Felland Road Project #: 20180033 June 25, 2018

## Appendix C | Wetland Determination Data Sheets

### WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

WEILAND DETERMINATION DATATO	Rim – Northcentral and Northeast Region
Project/Site: Felland Road Property	City/County: Town of Burke, Dane Cty Sampling Date: 4/23/18
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P1
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc.	Section, Township, Range: S23, T8N, R10E
Landform (hillside, terrace, etc.): terrace Loca	al relief (concave, convex, none): linear Slope %: 3
Subregion (LRR or MLRA): LRR K Lat:	Long: Datum:
Soil Map Unit Name: Gravel pit (GP)	NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year	Yes No x (If no, explain in Remarks.)
Are Vegetation, SoilX_, or Hydrologysignificantly dist	
Are Vegetation , Soil , or Hydrology naturally problem	
	mpling point locations, transects, important features, etc.
Sommart OF Findings – Allach site map showing sa	inpling point locations, transects, important leatures, 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:
Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point	located in disturbed, young woodland that contains concrete debris.
HYDROLOGY	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves	
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odo	
Sediment Deposits (B2) Oxidized Rhizosphere	s on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced	Iron (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction	in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Rem	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No X Depth (inches	
Water Table Present? Yes No X Depth (inches	
Saturation Present? Yes No X Depth (inches	s): Wetland Hydrology Present? Yes No _X
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, p	revious inspections) if available:
besone recorded bata (stream gauge, monitoring weil, actial photos, p	

Remarks:

### VEGETATION - Use scientific names of plants.

Sampling Point:

P1

<u>Tree Stratum</u> (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Ulmus pumila	50	Yes	FACU	Number of Dominant Species
2. Populus deltoides	20	Yes	FAC	That Are OBL, FACW, or FAC: 2 (A)
3. Acer negundo	10	No	FAC	Total Number of Dominant
4.				Species Across All Strata: 6 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
7				Prevalence Index worksheet:
	80	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species x 1 =
1. Lonicera X bella	5	Yes	FACU	FACW species 0 x 2 = 0
2. Rhamnus cathartica	5	Yes	FAC	FAC species X 3 =111
3				FACU species 80 x 4 = 320
4				UPL species x 5 =
5				Column Totals: 117 (A) 431 (B)
6		·		Prevalence Index = B/A =3.68
7				Hydrophytic Vegetation Indicators:
	10	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				2 - Dominance Test is >50%
1. Hesperis matronalis	15	Yes	FACU	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Alliaria petiolata	10	Yes	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3. Geum canadense	2	No	FAC	data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11		·		and greater than or equal to 3.28 ft (1 m) tall.
12		·		Herb – All herbaceous (non-woody) plants, regardless
	27	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines - All woody vines greater than 3.28 ft in
1		·		height.
2		·		Hydrophytic
3		·		Vegetation
4		·		Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a separ disturbed young woodland	ate sheet.)			
asarbed young woodand				

Profile Desc	cription: (Describe	to the de	pth needed to doc	ument t	he indica	ator or c	onfirm the absence	e of indica	tors.)	
Depth	Matrix		Redo	x Featu	res					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Rema	rks
0-5	10YR 3/2	100					Loamy/Clayey	_	SiL	
5-16	2.5Y 3/3	90					Loamy/Clayey		SiL	
	10YR 3/2	10								
					· <u> </u>	·				
					·					
					·					
					·					
					·					
					·					
					·	·				
	oncentration, D=Dep	pletion, RM	1=Reduced Matrix, N	MS=Mas	ked Sand	d Grains.			Lining, M=Ma	-
Hydric Soil				Surfe					lematic Hydr	MLRA 149B)
Histosol	pipedon (A2)		Polyvalue Belo MLRA 149B		ice (30) (i	LKK K,		•	edox (A16) (L	,
	istic (A3)		Thin Dark Surf	,		MIRA				) (LRR K, L, R)
	en Sulfide (A4)		High Chroma					-	/ Surface (S8)	
	d Layers (A5)		Loamy Mucky			-			ce (S9) (LRR	
	d Below Dark Surfac	e (A11)	Loamy Gleyed			, _/				2) (LRR K, L, R)
	ark Surface (A12)		Depleted Matri		( )			-		19) ( <b>MLRA 149B</b> )
	/lucky Mineral (S1)		Redox Dark Se		=6)					44A, 145, 149B)
Sandy G	Gleyed Matrix (S4)		Depleted Dark				Red F	Parent Mate	erial (F21)	
Sandy R	Redox (S5)		Redox Depres	sions (F	8)		Very S	Shallow Da	ark Surface (F	22)
Stripped	l Matrix (S6)		Marl (F10) (LR	R K, L)			Other	(Explain ir	n Remarks)	
Dark Su	rface (S7)									
31	Charles when the state we take	Concernation	and an all has deadles and an				and a dama and the second			
	f hydrophytic vegeta Layer (if observed)		etiand hydrology m	ust be p	resent, ur	ness alsi	turbed or problemati	С.		
Type:	concrete deb		fill							
Depth (ii		16					Hydric Soil Pres	sont?	Yes	No Y
		10					Hydric Soli Fres	Sent?	165	<u>No X</u>
Remarks:	distrubed, abandone	d concrete	diaponal area							
Solis Highly C			uispusai area.							

### WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

		The number of the state of the	gion
Project/Site: Felland Road Property	City/Co	unty: Town of Burke, Dane Cty	Sampling Date: 4/23/18
Applicant/Owner: Zignego Ready Mix, Inc.		State: WI	Sampling Point: P2
Investigator(s): Jeff Kraemer, Heartland Ecological Grou	p, Inc.	Section, Township, Range: S23, T8	N, R10E
Landform (hillside, terrace, etc.): terrace	Local relief (co	ncave, convex, none): linear	Slope %: 3-5
Subregion (LRR or MLRA): LRR K Lat:			
Soil Map Unit Name: Dresden silt loam		NWI classification:	
Are climatic / hydrologic conditions on the site typical for t	his time of year?	Yes No x (If no,	
	-		
Are Vegetation, Soil, or Hydrology		Are "Normal Circumstances" pres	
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answers ir	n Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling p	oint locations, transects, im	nportant features, etc.
Hydrophytic Vegetation Present? Yes	No X Is the	Sampled Area	
		n a Wetland? Yes	No X
Wetland Hydrology Present? Yes		optional Wetland Site ID:	
Remarks: (Explain alternative procedures here or in a se Based on WETS analysis, climatic conditions expected relatively dry in the region for early spring, mostly a factor have commenced based on green-up and bud burst of s	to be dry relative to the time or of limited spring snow me everal non-evergreen plant	t and lack of heavy rain events. Gro species on the site including Pastina	wing season confirmed to
Lonicera x bella, Taraxacum officinale, and Poa pratensi	s. Sampe point located wit	nin mesic woodland.	
HYDROLOGY		<b>0</b> • • • • • • •	
Wetland Hydrology Indicators:	ll that apply)		minimum of two required)
Primary Indicators (minimum of one is required; check a Surface Water (A1) Water	-Stained Leaves (B9)	Surface Soil Crack Drainage Patterns	( )
	ic Fauna (B13)	Moss Trim Lines (E	
	Deposits (B15)	Dry-Season Water	
	gen Sulfide Odor (C1)	Crayfish Burrows (	
	ed Rhizospheres on Living	· ·	on Aerial Imagery (C9)
	nce of Reduced Iron (C4)	Stunted or Stresse	••••
Algal Mat or Crust (B4) Recei	nt Iron Reduction in Tilled S	oils (C6) Geomorphic Positi	on (D2)
Iron Deposits (B5)	/luck Surface (C7)	Shallow Aquitard (	D3)
Inundation Visible on Aerial Imagery (B7) Other	(Explain in Remarks)	Microtopographic F	Relief (D4)
Sparsely Vegetated Concave Surface (B8)		FAC-Neutral Test	(D5)
Field Observations:			
Surface Water Present? Yes No X	Depth (inches):		
Water Table Present? Yes No X	Depth (inches):	.	
Saturation Present? Yes No X	Depth (inches):	Wetland Hydrology Present?	Yes No X
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous ins	pections), if available:	

Remarks:

### VEGETATION - Use scientific names of plants.

Sampling Point: P2

: Species V, or FAC:		
.,	2	(A)
		_ ` `
ninant strata:	7	(B)
Species V, or FAC:	28.6%	(A/B)
orksheet:		
of:	Multiply by:	
0 x 1 :	=0	
5 x 2 :	= 10	
52 x 3 :	= 156	
59 x 4 :	= 236	
0 x 5 :	=0	
116 (A)	402	(B)
dex = $B/A =$	3.47	
tion Indicator	rs:	
or Hydrophytic	Vegetation	
est is >50%		
ndex is ≤3.0 <sup>1</sup>		
I Adaptations <sup>1</sup>	(Provide su	pportin
rks or on a sep	parate sheet)	)
rophytic Veget	tation <sup>1</sup> (Expl	ain)
soil and wetlan sturbed or prot		must
tation Strata:		
s 3 in. (7.6 cm) eight (DBH), re		height
	•	•
ody plants less equal to 3.28 ft		DBH
qual to 5.20 It	(1 m) tan.	
us (non-woody) lants less than		ardless
voody vines gre	optor than 3	29 ft ir
oody vines gre	eater than 5.	.20 11 11
s N	No X	
	<u> </u>	
	s N	s NoX

	cription: (Describe	to the dep				ator or co	onfirm the absence	of indica	tors.)	
Depth (inchos)	Matrix Color (moist)	%	Color (moist)	x Featur %		Loc <sup>2</sup>	Texture		Rema	rke
(inches)		·		-70	Type <sup>1</sup>	LUC				
0-3	10YR 3/2	100					Loamy/Clayey		SiL	
3-18	10YR 5/4	100					Loamy/Clayey		SiL	-
	_									
	<u> </u>	·			· <u> </u>					
					. <u> </u>					
		·								
					. <u> </u>					
		·			· · · · · · · · · · · · · · · · · · ·					
					·					
	Concentration, D=Dep	letion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.			Lining, M=Ma	
-	Indicators:			<i>. .</i>					lematic Hydi	
Histoso			Polyvalue Belo		ice (S8) (I	LRR R,				MLRA 149B)
	pipedon (A2) listic (A3)		MLRA 149B Thin Dark Surf			MIRA			dox (A16) (L at or Peat (S3	B) (LRR K, L, R)
	en Sulfide (A4)		High Chroma S				· · · · · · · · · · · · · · · · · · ·	-	Surface (S8	
	d Layers (A5)		Loamy Mucky			-			ce (S9) (LRR	
	ed Below Dark Surfac	e (A11)	Loamy Gleyed							2) ( <b>LRR K, L, R</b> )
Thick D	ark Surface (A12)		Depleted Matri	x (F3)			Piedm	ont Floodp	olain Soils (F	19) ( <b>MLRA 149B</b> )
Sandy I	Mucky Mineral (S1)		Redox Dark Su							44A, 145, 149B)
	Gleyed Matrix (S4)		Depleted Dark		. ,			arent Mate	. ,	
	Redox (S5)		Redox Depres		8)				rk Surface (F	-22)
	d Matrix (S6)		Marl (F10) ( <b>LR</b>	R K, L)			Other	(Explain in	n Remarks)	
Dark St	urface (S7)									
<sup>3</sup> Indicators of	of hydrophytic vegeta	tion and w	etland hydrology mi	ust be p	resent. ur	nless dist	turbed or problematio	2.		
	Layer (if observed):		,					-		
Type:										
Depth (	inches):						Hydric Soil Pres	ent?	Yes	No X
Remarks:										
rtomanto.										

### WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Felland Road Property		City/County: Town of Bur	ke, Dane Cty	Sampling Date: 4/23/18	3		
Applicant/Owner: Zignego Ready Mix, Ir	IC.		State: WI	Sampling Point: P	3		
Investigator(s): Jeff Kraemer, Heartland Eco		Section, Townshi	p, Range: S23, T8	N, R10E			
Landform (hillside, terrace, etc.): terrace	Local	Local relief (concave, convex, none): linear S					
Subregion (LRR or MLRA): LRR K	Lat:	Long:					
Soil Map Unit Name: Batavia silt loam			NWI classification:	none			
Are climatic / hydrologic conditions on the site	e typical for this time of year?	Yes	No x (If no, o	explain in Remarks.)			
Are Vegetation, Soil, or Hydro	ology significantly distur			ent? Yes x No			
Are Vegetation , Soil , or Hydro			lain any answers ir				
SUMMARY OF FINDINGS – Attach				,	to		
Sommart of Findings – Attach	site map showing sam			iportant leatures, et			
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:				
Lonicera x bella, Taraxacum officinale, and I	rua praterisis. Sampe point wi	unn unmanageo olo nelo al	ea.				
HYDROLOGY							
Wetland Hydrology Indicators:			•	minimum of two required)			
Primary Indicators (minimum of one is requi			Surface Soil Crack	( )			
Surface Water (A1)	Water-Stained Leaves (B		Drainage Patterns				
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (E				
Saturation (A3)	Marl Deposits (B15)		Dry-Season Water				
Water Marks (B1) Sediment Deposits (B2)	Hydrogen Sulfide Odor ( Oxidized Rhizospheres o	·	Crayfish Burrows (	on Aerial Imagery (C9)			
Drift Deposits (B3)	Presence of Reduced In		Stunted or Stresse	••••			
Algal Mat or Crust (B4)	Recent Iron Reduction in		Geomorphic Position	. ,			
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (I				
Inundation Visible on Aerial Imagery (B7			Microtopographic F				
Sparsely Vegetated Concave Surface (E		· · · · · · · · · · · · · · · · · · ·	FAC-Neutral Test (				
Field Observations:	,			· · /			

Field Observations:						
Surface Water Present?	Yes	No X	Depth (inches):			
Water Table Present?	Yes	No X	Depth (inches):	-		
Saturation Present?	Yes	No X	Depth (inches):	Wetland Hydrology Present?	Yes	No X
(includes capillary fringe)				-		
Describe Recorded Data (s	tream gauge,	monitoring well,	aerial photos, previous in	spections), if available:		
Remarks:						

### VEGETATION - Use scientific names of plants.

Sampling Point: P3

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species
2.				That Are OBL, FACW, or FAC:(A)
3 4				Total Number of Dominant         Species Across All Strata:       2         (B)
5.           6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)
7				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species 0 x 1 = 0
1				FACW species <u>3</u> x 2 = <u>6</u>
2.				FAC species 0 x 3 = 0
3.				FACU species 55 x 4 = 220
4.				UPL species 80 x 5 = 400
5.				Column Totals: 138 (A) 626 (B)
6.				Prevalence Index = $B/A = 4.54$
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				2 - Dominance Test is >50%
1. Bromus inermis	80	Yes	UPL	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Poa pratensis	50	Yes	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
	5	No	FACU	data in Remarks or on a separate sheet)
4. Phalaris arundinacea			FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5.				
6.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12	138	=Total Cover		<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
<u>Woody Vine Stratum</u> (Plot size: <u>30ft</u> )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa Unmanaged old field. Sample point located within rep change in landscape position.		area. Some s	scattered pock	ets of RCG present, however not associated with any

Profile Desc	ription: (Describe	to the de	pth needed to doc	ument t	he indica	tor or c	onfirm t	he absence of indic	ators.)	
Depth Matrix			Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	т	exture	Remarks	
0-17	10YR 3/2	100					Loan	ny/Clayey	SiCL	
17-24	-24 10YR 2/1 100						Loan	ny/Clayey	SiCL	
		·								
		·						·		
								·		
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RN	I=Reduced Matrix, N	/IS=Mas	ked Sand	l Grains.		<sup>2</sup> Location: PL=Pore	e Lining, M=Ma	atrix.
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils <sup>3</sup> :				
Histosol (A1)			Polyvalue Below Surface (S8) (LRR R,				2 cm Muck (A10) (LRR K, L, MLRA 149B)			
Histic Epipedon (A2)							Coast Prairie Redox (A16) (LRR K, L, R)5 cm Mucky Peat or Peat (S3) (LRR K, L, R)			
Black Histic (A3)			Thin Dark Surface (S9) (LRR R, MLRA			1 <b>49B</b> )				
Hydrogen Sulfide (A4)			High Chroma Sands (S11) (LRR K, L)			Polyvalue Below Surface (S8) (LRR K, L)				
Stratified Layers (A5)			Loamy Mucky Mineral (F1) (LRR K, L)				Thin Dark Surfa			
Depleted Below Dark Surface (A11)			Loamy Gleyed Matrix (F2)				Iron-Manganese Masses (F12) (LRR K, L, R)			
Thick Dark Surface (A12)			Depleted Matrix (F3)				Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy Mucky Mineral (S1)			Redox Dark Surface (F6)				Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy Gleyed Matrix (S4)			Depleted Dark Surface (F7)				Red Parent Material (F21)			
Sandy Redox (S5)			Redox Depressions (F8)				Very Shallow Dark Surface (F22)			
Stripped Matrix (S6) Dark Surface (S7)			Marl (F10) (LRR K, L)				Other (Explain in Remarks)			
Dark Sur	face (S7)									
<sup>3</sup> Indicators of	hydrophytic vegetat	tion and w	etland hydrology m	ust ha n	resent ur	less dist	turbed o	r problematic		
			elland hydrology hi	usi be p	ieseni, ui	11655 0151		problematic.		
Restrictive Layer (if observed): Type:										
Depth (inches):						Hvdr	ic Soil Present?	Yes	<u>No X</u>	
Remarks: Potential old	topsoil disposal area	associat	ed with gravel pit							
		1 23300121	eu with graver pit.							

	C C					
Project/Site: Felland Road Property	City/County: Town of Burke, Dane Cty Sampling Date: 4/23/18					
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P4					
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc.	Section, Township, Range: S23, T8N, R10E					
Landform (hillside, terrace, etc.): floodplain terrace Local r	relief (concave, convex, none): concave Slope %: 0-3					
Subregion (LRR or MLRA): LRR K Lat:	Long: Datum:					
Soil Map Unit Name: Batavia silt loam	NWI classification: none					
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No x (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrologysignificantly disturb						
Are Vegetation, Soil, or Hydrology X_ naturally problematic?       (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing sam						
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         No         X	If yes, optional Wetland Site ID: W-2 Lowland Forest					
Remarks: (Explain alternative procedures here or in a separate report.) Based on WETS analysis, climatic conditions expected to be dry relative to the time of year. Based on personal observations, conditions were relatively dry in the region for early spring, mostly a factor of limited spring snow melt and lack of heavy rain events. Growing season confirmed to have commenced based on green-up and bud burst of several non-evergreen plant species on the site including Pastinaca sativa, Ribes cynosbati, Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point located within margin of lowland forest.						
HYDROLOGY						
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (E	Surface Soil Cracks (B6) 39) Drainage Patterns (B10)					
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)					
Water Marks (B1) Hydrogen Sulfide Odor (						
Sediment Deposits (B2) Oxidized Rhizospheres of						
Drift Deposits (B3) Presence of Reduced Iro						
Algal Mat or Crust (B4) Recent Iron Reduction in						
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)					
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark						
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)					
Field Observations:						
Surface Water Present? Yes No X Depth (inches):						
Water Table Present? Yes No X Depth (inches):						
Saturation Present? Yes X No Depth (inches):	24 Wetland Hydrology Present? Yes No X					
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	vious inspections), if available:					

#### Remarks:

The only direct hydrology indicator satisfied is geomorphic position. However, given the dry conditions in early growing season, with saturated soils within 24 inches identified, strong indicators of hydric soils present, dominance of hydrophytic vegetation, and landscape position, wetland hydrology is assumed to be present during normal to wet early growing seasons. Hydrology identified as naturally problematic given the seasonal hydroperiod that may only be observed during a normal to wet spring.

#### VEGETATION - Use scientific names of plants.

Sampling Point:

Ρ4

<u>Tree Stratum</u> (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Populus deltoides	40	Yes	FAC	Number of Dominant Spania
2. Acer saccharinum	50	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
3.				Total Number of Dominant
4.				Species Across All Strata: 5 (B)
5		·		Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 80.0% (A/B)
7				Prevalence Index worksheet:
	90	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species x 1 =
1. Lonicera X bella	10	Yes	FACU	FACW species 50 x 2 = 100
2. Rhamnus cathartica	10	Yes	FAC	FAC species 55 x 3 =165
3				FACU species 10 x 4 = 40
4				UPL species 0 x 5 = 0
5				Column Totals: 115 (A) 305 (B)
6				Prevalence Index = B/A = 2.65
7				Hydrophytic Vegetation Indicators:
	20	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				X 2 - Dominance Test is >50%
1. Geum canadense	5	Yes	FAC	X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3				data in Remarks or on a separate sheet)
4.		·		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6		. <u> </u>		be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8		. <u> </u>		<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	5	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	,			
Reed canary grass becomes a dominant species app	roximately 5	50 feet southea	st of P-4, with	in similar landscape position/elevation.

## SOIL

Profile Desc	ription: (Describe	to the de	-			ator or c	onfirm the absence o	of indicators.)
Depth	Matrix			x Featur		. 2		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16	10YR 3/2	85	10YR 5/6	15	С	M	Loamy/Clayey	SiCL
16-24	10YR 4/2	88	10YR 5/6	12	С	Μ	Loamy/Clayey	SiCL
		· · · · · · · · · · · · · · · · · · ·						
		·						
		· <u> </u>						
		·						
		·						
	oncentration, D=Dep		-Reduced Matrix	/S-Mas	ked Sand	Grains	<sup>2</sup> l ocation: F	PL=Pore Lining, M=Matrix.
Hydric Soil I								or Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Belo	w Surfa	ce (S8) (I	LRR R,		uck (A10) ( <b>LRR K, L, MLRA 149B</b> )
Histic Ep	ipedon (A2)		MLRA 149B	·				rairie Redox (A16) ( <b>LRR K, L, R</b> )
Black His	( )		Thin Dark Surf					ucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		High Chroma S			-		ue Below Surface (S8) (LRR K, L)
	l Layers (A5) l Below Dark Surface	ο (Δ11)	Loamy Mucky Loamy Gleyed			R K, L)		rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)		Depleted Matri		12)			nt Floodplain Soils (F19) (MLRA 149B)
	Mucky Mineral (S1) X Redox Dark Surface (F6)							podic (TA6) ( <b>MLRA 144A, 145, 149B</b> )
Sandy G	leyed Matrix (S4)		Depleted Dark Surface (F7)				Red Par	rent Material (F21)
Sandy R	edox (S5)		Redox Depres		8)			allow Dark Surface (F22)
	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (E	Explain in Remarks)
Dark Sur	face (S7)							
<sup>3</sup> Indicators of	hydrophytic vegetat	tion and w	etland hydrology mu	ust he pr	esent ur	nless dis	turbed or problematic.	
	ayer (if observed):		reliand hydrology m		coont, u	1000 010		
Type:	,							
Depth (ir	nches):						Hydric Soil Prese	nt? Yes <u>X</u> No
Remarks:							Ļ	
I								

Project/Site: Felland Road Property			City/County: Town o	f Burke, Dane Cty	Sampling Date: 4/23/18		
Applicant/Owner: Zignego Ready Mix, Inc.				State: WI	Sampling Point: P5		
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc. Section, Township, Range: S23, T8N, R10E							
Landform (hillside, terrace, etc.): terrace		Local r	elief (concave, conve	x, none): linear	Slope %: 3		
Subregion (LRR or MLRA): LRR K	Lat:		Long:		Datum:		
Soil Map Unit Name: Batavia silt loam				NWI classification:	none		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No x (If no, explain in Remarks.)							
Are Vegetation, Soil, or Hydrold	gysign	ficantly disturb	ed? Are "Norn	nal Circumstances" pres	ent? Yes <u>x</u> No		
Are Vegetation, Soil, or Hydrold	gy natu	rally problemat	ic? (If needed	l, explain any answers ir	n Remarks.)		
SUMMARY OF FINDINGS – Attach s	ite map sho	owing same	oling point locat	ions, transects, im	portant features, etc.		
Hydrophytic Vegetation Present?	es No	x X	Is the Sampled A	rea			
		X	within a Wetland		No X		
Wetland Hydrology Present?	'es No	X	If yes, optional We	tland Site ID:			
Remarks: (Explain alternative procedures here or in a separate report.) Based on WETS analysis, climatic conditions expected to be dry relative to the time of year. Based on personal observations, conditions were relatively dry in the region for early spring, mostly a factor of limited spring snow melt and lack of heavy rain events. Growing season confirmed to have commenced based on green-up and bud burst of several non-evergreen plant species on the site including Pastinaca sativa, Ribes cynosbati, Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point in upland woodland.							
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indicators (r	minimum of two required)		
Primary Indicators (minimum of one is required	; check all tha	t apply)	<u> </u>	Surface Soil Crack	· ,		
Surface Water (A1)		ned Leaves (B	9)	Drainage Patterns			
High Water Table (A2)	Aquatic Fa			Moss Trim Lines (E	,		
Saturation (A3)	Marl Depo	,		Dry-Season Water	, <i>,</i>		
Water Marks (B1)	_ · ·	Sulfide Odor (C	,	Crayfish Burrows (			
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)				on Aerial Imagery (C9)		

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required	Surface Soil Cracks (B6)					
Surface Water (A1)	Water-	Stained Leaves (B9)		Drainage Patterns (B10)		
High Water Table (A2)	Aquatio	c Fauna (B13)		Moss Trim Lines (B16)		
Saturation (A3)	Marl De	eposits (B15)		Dry-Season Water Table (C2)		
Water Marks (B1)	Hydrog	en Sulfide Odor (C1)		Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidize	ed Rhizospheres on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	Presen	ce of Reduced Iron (C4)		Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent	Iron Reduction in Tilled Soils	s (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin M	uck Surface (C7)		Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7)	Other (	Explain in Remarks)		Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)				FAC-Neutral Test (D5)		
Field Observations:						
Surface Water Present? Yes	No X	Depth (inches):				
Water Table Present? Yes	No X	Depth (inches):				
Saturation Present? Yes	No X	Depth (inches):	Wetlan	d Hydrology Present? Yes No X		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monit	oring well,	aerial photos, previous inspe	ections), if	available:		
Remarks:						

#### **VEGETATION** – Use scientific names of plants.

Sampling Point:

P5

<u>Tree Stratum</u> (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Prunus serotina	40	Yes	FACU	
2. Acer saccharinum	20	Yes	FACW	Number of Dominant SpeciesThat Are OBL, FACW, or FAC:3(A)
3. Acer negundo	10	No	FAC	
A			1710	Total Number of Dominant Species Across All Strata: 7 (B)
				、/
6				Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)
7.				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species 0 $x 1 = 0$
1. Prunus serotina	5	Yes	FACU	FACW species $20   x 2 = 40$
2. Ribes cynosbati	8	Yes	FACU	FAC species 18 x 3 = 54
3. Rhamnus cathartica	5	Yes	FAC	FACU species 60 x 4 = 240
4. Lonicera X bella	2	No	FACU	UPL species 0 x 5 = 0
5.				Column Totals: 98 (A) 334 (B)
6.				Prevalence Index = B/A = 3.41
7.				Hydrophytic Vegetation Indicators:
	20	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				2 - Dominance Test is >50%
1. Geum canadense	3	Yes	FAC	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Alliaria petiolata	5	Yes	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	8	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			

Profile Desc	cription: (Describe	to the de	pth needed to docu	ument t	he indica	tor or c	onfirm the absence o	f indicators.)	
Depth	Matrix			x Featu					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remar	ks
0-16	10YR 3/2	100					Loamy/Clayey	SiCL	
16-24	10YR 4/3	97	10YR 4/4	3	С	М	Loamy/Clayey	SiCL	
———		·							
		·							
		·							
		·					·		
		·							
$^{1}$ Type: C=C	oncentration, D=Dep	letion RM	-Reduced Matrix N		ked Sand	Grains	<sup>2</sup> Location: P	L=Pore Lining, M=Ma	riv
Hydric Soil				10-11103	Keu Gane	oranis.		or Problematic Hydri	
Histosol			Polyvalue Belo	w Surfa	ce (S8) (I	LRR R,		uck (A10) (LRR K, L, N	
	pipedon (A2)		MLRA 149B		. , .			rairie Redox (A16) (LR	,
Black Hi	stic (A3)		Thin Dark Surf	ace (S9	) (LRR R	MLRA	149B) 5 cm Mu	ucky Peat or Peat (S3)	(LRR K, L, R)
Hydroge	n Sulfide (A4)		High Chroma S	Sands (S	611) ( <b>LRF</b>	R K, L)	Polyvalu	e Below Surface (S8)	(LRR K, L)
	d Layers (A5)		Loamy Mucky	Mineral	(F1) ( <b>LR</b>	R K, L)	Thin Dar	rk Surface (S9) (LRR I	<b>K, L</b> )
	d Below Dark Surface	e (A11)	Loamy Gleyed		(F2)		Iron-Manganese Masses (F12) (LRR K, L, R)		
Thick Dark Surface (A12) Depleted Matrix (F3)							Piedmont Floodplain Soils (F19) (MLRA 149B)		
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Redox Dark Surface (F6) Depleted Dark Surface (F7)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21)		
	Bleyed Matrix (S4) Redox (S5)		Redox Depress		. ,			allow Dark Surface (F2	22)
	Matrix (S6)		Marl (F10) (LR		0)			Explain in Remarks)	-2)
	rface (S7)			, <b>L</b> )					
	(2))								
<sup>3</sup> Indicators o	f hydrophytic vegetat	tion and w	etland hydrology mu	ust be p	resent, ur	less dist	urbed or problematic.		
Restrictive	Layer (if observed):								
Type:									
Depth (ii	nches):						Hydric Soil Preser	nt? Yes	No X
Remarks:									

Project/Site: Felland Road Property City/Co	ounty: Town of Burke, Dane Cty Sampling Date: 4/23/18
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P6
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc.	Section, Township, Range: S23, T8N, R10E
Landform (hillside, terrace, etc.): drainageway Local relief (co	oncave, convex, none): concave Slope %: 1-3
Subregion (LRR or MLRA): LRR K Lat:	Long: Datum:
Soil Map Unit Name: Dresden silt loam	NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No _ x (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly 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 p	
	e Sampled Area
	in a Wetland? Yes X No
Wetland Hydrology Present?       Yes       X       No       If yes         Remarks:       (Explain alternative procedures here or in a separate report.)	s, optional Wetland Site ID: W2 riparian floodplain
Based on WETS analysis, climatic conditions expected to be dry relative to the time relatively dry in the region for early spring, mostly a factor of limited spring snow me have commenced based on green-up and bud burst of several non-evergreen plant Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample located within ri	elt and lack of heavy rain events. Growing season confirmed to species on the site including Pastinaca sativa, Ribes cynosbati,
HYDROLOGY	
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)         Surface Water (A1)       Water-Stained Leaves (B9)         X       High Water Table (A2)       Aquatic Fauna (B13)         X       Saturation (A3)       Marl Deposits (B15)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         X       Sediment Deposits (B2)       Oxidized Rhizospheres on Living         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled S         Iron Deposits (B5)       Thin Muck Surface (C7)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)         Sparsely Vegetated Concave Surface (B8)       Staturation Present?         Field Observations:       No       X         Surface Water Present?       Yes       No       Depth (inches):         Water Table Present?       Yes       No       Depth (inches):       0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous instance       Image Previous instance	Stunted or Stressed Plants (D1)         Soils (C6)       X         Geomorphic Position (D2)         Shallow Aquitard (D3)         Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)
Remarks: Drainageway is approximately 3 - 5 wide at OHWM and contains 3- 6" of water in ce	entral portions at time of fieldwork.

#### **VEGETATION** – Use scientific names of plants.

Sampling Point:

P6

Tree Stratum(Plot size: 30ft )% CoverSpecies?StatusDominance Test worksheet:1.Acer saccharinum70YesFACWNumber of Dominant SpeciesThat Are OBL, FACW, or FAC: 22.Ulmus americana5NoFACWTotal Number of Dominant23	(A) (B) (A/B)
2.       Ulmus americana       5       No       FACW       That Are OBL, FACW, or FAC:       2         3.	(B) (A/B)
3.	(B) (A/B)
4.	(A/B)
5.     Percent of Dominant Species       6.     That Are OBL, FACW, or FAC:       7.     Prevalence Index worksheet:	(A/B)
6.	_ ` `
7. Prevalence Index worksheet:	_ ` `
75 =Total Cover Total % Cover of: Multiply by	
Sapling/Shrub Stratum         (Plot size:         15ft         )         OBL species         0         x 1 =         0	
1. FACW species 145 x 2 = 290	
2. FAC species 0 x 3 = 0	
3. FACU species 0 x 4 = 0	
4. UPL species 0 x 5 = 0	
5. Column Totals: 145 (A) 290	(B)
6 Prevalence Index = B/A = 2.00	
7. Hydrophytic Vegetation Indicators:	
=Total Cover 1 - Rapid Test for Hydrophytic Vegetation	
Herb Stratum (Plot size: 5ft ) X 2 - Dominance Test is >50%	
1. Phalaris arundinacea 70 Yes FACW X 3 - Prevalence Index is $\leq 3.0^1$	
2. 4 - Morphological Adaptations <sup>1</sup> (Provide se	pporting
3. data in Remarks or on a separate shee	:)
4. Problematic Hydrophytic Vegetation <sup>1</sup> (Exp	lain)
5	
0.       1 Indicators of hydric soil and wetland hydrolog         6.       be present, unless disturbed or problematic.	/ must
7. Definitions of Vegetation Strata:	
8	
9.         Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless or more in diameter at breast height (DBH), rega	height.
10	חמם
Sapling/shrub – Woody plants less than 3 in.         11.       and greater than or equal to 3.28 ft (1 m) tall.	υвп
12 Herb – All herbaceous (non-woody) plants, re-	ardloss
Total Cover of size, and woody plants less than 3.28 ft tall.	
Woody Vine Stratum (Plot size: 30ft ) Woody vines – All woody vines greater than 3	28 ft in
1.	
2.	
3. Hydrophytic Vegetation	
4 Yes_X_ No	
=Total Cover	
Remarks: (Include photo numbers here or on a separate sheet.)	

## SOIL

	Nm – Northeentral and Northeast Negion						
Project/Site: Felland Road Property	City/County: Town of Burke, Dane Cty Sampling Date: 4/23/18						
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P7						
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc. Section, Township, Range: S23, T8N, R10E							
Landform (hillside, terrace, etc.): terrace Loca	al relief (concave, convex, none): Slope %:						
Subregion (LRR or MLRA): LRR K Lat:							
Soil Map Unit Name: Dresden silt loam	NWI classification: none						
Are climatic / hydrologic conditions on the site typical for this time of year	Yes No x (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrologysignificantly dist							
Are Vegetation, Soil, or Hydrologynaturally problem							
SUMMART OF FINDINGS – Attach site map showing sa	mpling 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.)							
Based on WETS analysis, climatic conditions expected to be dry relative	to the time of year. Based on personal observations, conditions were						
	g snow melt and lack of heavy rain events. Growing season confirmed to						
	reen plant species on the site including Pastinaca sativa, Ribes cynosbati,						
Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point	located within upland woodland that lies approximately 5 feet above P6.						
HYDROLOGY							
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)						
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)						
Surface Water (A1) Water-Stained Leaves							
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)						
Saturation (A3)         Marl Deposits (B15)           Water Marks (B1)         Hydrogen Sulfide Odo	Dry-Season Water Table (C2)						
Sediment Deposits (B2)Oxidized Rhizosphere Drift Deposits (B3) Presence of Reduced							
Algal Mat or Crust (B4) Recent Iron Reduction							
Iron Deposits (B5) Thin Muck Surface (C							
Inundation Visible on Aerial Imagery (B7) Other (Explain in Rem Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)						
·							
Field Observations:							
Surface Water Present? Yes No X Depth (inches							
Water Table Present?         Yes         No         X         Depth (inchest of the second							
Saturation Present? Yes No X Depth (inches	s): Wetland Hydrology Present? Yes No _X						
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, p	vavious inspections), if available:						
Describe Necorded Data (stream gauge, monitoring weil, aetial photos, p							

Remarks:

#### VEGETATION - Use scientific names of plants.

Sampling Point:

P7

<u>Tree Stratum</u> (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Acer saccharinum	60	Yes	FACW	Number of Dominant Species
2. Ulmus americana	10	No	FACW	That Are OBL, FACW, or FAC: (A)
3				Total Number of Dominant
4				Species Across All Strata: 4 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC:(A/B)
7				Prevalence Index worksheet:
	70	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species 0 x 1 = 0
1. Ribes cynosbati	10	Yes	FACU	FACW species 70 x 2 = 140
2. Rhamnus cathartica	10	Yes	FAC	FAC species X 3 = 33
3				FACU species <u>15</u> x 4 = <u>60</u>
4				UPL species x 5 =
5				Column Totals: 96 (A) 233 (B)
6				Prevalence Index = B/A =2.43
7				Hydrophytic Vegetation Indicators:
	20	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				2 - Dominance Test is >50%
1. Geum canadense	1	No	FAC	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Alliaria petiolata	5	Yes	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	6	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			

SOIL	
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Profile Desc	ription: (Describe	to the dep	oth needed to docu	ument t	he indica	ator or co	onfirm the absence of in	dicators.)			
Depth	Matrix			x Featur		0					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-12	10YR 3/2	100					Loamy/Clayey	SiCL			
12-16	10YR 4/3	100					Loamy/Clayey	SiCL			
16-24	10YR 4/2	95	10YR 4/6	5	С	Μ	Loamy/Clayey	SiCL			
<sup>1</sup> Type: C=Cc	ncentration, D=Dep	letion RM	=Reduced Matrix M	IS=Mas	ked Sand	Grains	<sup>2</sup> Location: PL=F	Pore Lining, M=Matrix.			
Hydric Soil I								Problematic Hydric Soils <sup>3</sup> :			
Histosol			Polyvalue Belo	w Surfa	ce (S8) (l	LRR R,		(A10) ( <b>LRR K, L, MLRA 149B</b> )			
Histic Ep	ipedon (A2)		MLRA 149B	)			Coast Prairie	e Redox (A16) ( <b>LRR K, L, R</b> )			
Black His			Thin Dark Surfa					Peat or Peat (S3) (LRR K, L, R)			
	n Sulfide (A4)		High Chroma S			-		elow Surface (S8) (LRR K, L)			
	Layers (A5)	( )	Loamy Mucky			R K, L)	Thin Dark Surface (S9) (LRR K, L)				
	Below Dark Surface rk Surface (A12)	e (A11)	Loamy Gleyed		(F2)		Iron-Manganese Masses (F12) (LRR K, L, R)				
	ucky Mineral (S1)	·	Depleted Matriz Redox Dark Su		-6)		Piedmont Floodplain Soils (F19) ( <b>MLRA 149B</b> ) Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )				
	leyed Matrix (S4)		Depleted Dark				Red Parent Material (F21)				
	edox (S5)		Redox Depress				Very Shallow Dark Surface (F22)				
	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain in Remarks)				
Dark Sur	face (S7)										
			etland hydrology mu	ist be p	resent, ur	nless dist	urbed or problematic.				
	ayer (if observed):										
Type:											
Depth (in	ches):						Hydric Soil Present?	Yes <u>No X</u>			
Remarks:											

WEILAND DEI ERMINA	ATION DATA FORM - NORT	icentral and Northeast Re	gion			
Project/Site: Felland Road Property	City/County	y: Town of Burke, Dane Cty	Sampling Date: 4/23/18			
Applicant/Owner: Zignego Ready Mix, Inc.		State: WI	Sampling Point: P8			
Investigator(s): Jeff Kraemer, Heartland Ecological	Group, Inc. Se	ection, Township, Range: S23, T8	N, R1 <u>0E</u>			
Landform (hillside, terrace, etc.): man-made ridge	Local relief (conca	ave, convex, none): convex	Slope %: 5			
Subregion (LRR or MLRA): LRR K	Lat:	Long:	Datum:			
Soil Map Unit Name: Dresden silt loam		NWI classification:	none			
Are climatic / hydrologic conditions on the site typical	for this time of year?	Yes No _x (If no, e	explain in Remarks.)			
Are Vegetation , Soil X , or Hydrology		Are "Normal Circumstances" prese				
Are Vegetation, Soil, or Hydrology		(If needed, explain any answers in				
SUMMARY OF FINDINGS – Attach site n						
Hydrophytic Vegetation Present? Yes		ampled Area				
Hydric Soil Present? Yes		Wetland? Yes	No X			
Wetland Hydrology Present? Yes		otional Wetland Site ID:				
Remarks: (Explain alternative procedures here or in		waar Daaad on normonal obcorrug	tione wore			
Based on WETS analysis, climatic conditions expect relatively dry in the region for early spring, mostly a						
have commenced based on green-up and bud burst	t of several non-evergreen plant spe	ecies on the site including Pastinad	ca sativa, Ribes cynosbati,			
Lonicera x bella, Taraxacum officinale, and Poa prat	tensis. Sample point located on ma	an-made ridge consisting of fill/spo	il material, likely associated			
with the adjacent abandoned gravel pit.						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators (r	ninimum of two required)			
Primary Indicators (minimum of one is required; che	ck all that apply)	Surface Soil Cracks	s (B6)			
	Vater-Stained Leaves (B9)	Drainage Patterns				
	quatic Fauna (B13)	Moss Trim Lines (B				
	larl Deposits (B15)	Dry-Season Water				
	lydrogen Sulfide Odor (C1)	Crayfish Burrows (C				
	Dxidized Rhizospheres on Living Ro		on Aerial Imagery (C9)			
	Presence of Reduced Iron (C4)					
	Recent Iron Reduction in Tilled Soils					
	hin Muck Surface (C7) Dther (Explain in Remarks)	Shallow Aquitard (E Microtopographic R	,			
Sparsely Vegetated Concave Surface (B8)	Iner (Explain in Remains)	X FAC-Neutral Test (	. ,			
Field Observations:			55)			
	X Depth (inches):					
	X Depth (inches):					
Saturation Present? Yes No		Wetland Hydrology Present?	Yes No X			
(includes capillary fringe)		•				
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspec	ctions), if available:				
Remarks:	20					
Sample point lies approximately 10' above P6 and P	Э.					

## **VEGETATION** – Use scientific names of plants.

Sampling Point: P8

<u>Tree Stratum</u> (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Morus alba	5	No	FACU	
2. Acer saccharinum	50	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
3. Ulmus americana	5	No	FACW	
4.				Total Number of Dominant Species Across All Strata: 2 (B)
5.				
6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.				Prevalence Index worksheet:
	60	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species 0 x 1 = 0
1. Rhamnus cathartica	70	Yes	FAC	FACW species 55 x 2 = 110
2. Ribes cynosbati	5	No	FACU	FAC species 73 x 3 = 219
3				FACU species 10 x 4 = 40
4				UPL species 0 x 5 = 0
5				Column Totals: 138 (A) 369 (B)
6				Prevalence Index = B/A = 2.67
7				Hydrophytic Vegetation Indicators:
	75	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				X 2 - Dominance Test is >50%
1. Geum canadense	3	No	FAC	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	3	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Hydrophytic Vegetation
4				Present? Yes <u>X</u> No
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			
Dense buckthorn growing on man-made berm.				

0-6       10YR 3/2       100       Loamy/Clayey       SiL - mixe         6-18       10YR 3/2       65       Loamy/Clayey       SiL - mixe         10YR 4/4       25	Remarks SiL mixed gravel fill	my/Clayey S	Loa	Type <sup>1</sup>	0/				
6-18       10YR 3/2       65       Loamy/Clayey       SiL - mix         10YR 4/4       25					%	Color (moist)	%	Color (moist)	(inches)
10YR 4/4       25         10YR 5/4       10         10	mixed gravel fill	my/Clayey SiL - mixe	Loa				100	10YR 3/2	0-6
10YR 5/4       10         10			Lou				65	10YR 3/2	6-18
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=         Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, L)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thin Dark Surface (F6)       Mesic Spodic (TA6) (MLRA Surface (S9) (LRR R, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)         Dark Surface (S7)       Cther (Explain in Remarks)         Dark Surface (S7)       Sandy for problematic.							25	10YR 4/4	
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3 <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.							10	10YR 5/4	
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LR R, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF Iron-Manganese Masses (I Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/ Sandy Redox (S5)       Marl (F10) (LRR K, L)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Jark Surface (S7)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)									
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LR R, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF Iron-Manganese Masses (I Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/ Sandy Redox (S5)       Marl (F10) (LRR K, L)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Jark Surface (S7)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)									
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Siturbed or problematic.       Other (Explain in Remarks)									
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF Iron-Manganese Masses (I Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/ Sandy Redox (S5)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Very Shallow Dark Surface         Dark Surface (S7)       Redox Depressions (F8)       Very Shallow Dark Surface <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)							· ·	·	
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Siturbed or problematic.       Other (Explain in Remarks)							· ·	·	
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S9) (LF High Chroma Sands (S11) (LRR K, L)       Thin Dark Surface (S1)       Polyvalue Below Surface (F6)       Mesic Spodic (TA6) (MLR/ Mesic Spodic (TA6) (MLR/ Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface Other (Explain in Remarks)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)       Other (Explain in Remarks)       Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       To belematic       Tobele								·	
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Siturbed or problematic.       Other (Explain in Remarks)									
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Siturbed or problematic.       Other (Explain in Remarks)									
Hydric Soil Indicators:       Indicators for Problematic Hy         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3 <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.									
Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat ( Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Polyvalue Below Surface (S9) (LF Polyvalue Below Surface (S9) (LF Thick Dark Surface (A11)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/ Sandy Gleyed Matrix (S4)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         3 <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):	, M=Matrix.	<sup>2</sup> Location: PL=Pore Lining, M=N	Grains.	ked Sand	, MS=Mas	=Reduced Matrix, N	letion, RM	oncentration, D=Depl	<sup>1</sup> Type: C=C
Histic Epipedon (A2)       MLRA 149B)       Coast Prairie Redox (A16)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LFR R, MLRA 149B)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		Indicators for Problematic Hye						Indicators:	Hydric Soil
Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		2 cm Muck (A10) (LRR K, L	_RR R,	ce (S8) (L			-		
Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (I         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.									
Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LF         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Bark Surface (S7)       3       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       To be       To be							•		
Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (f         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):			-				-		
Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):			( <b>K</b> , <b>L</b> )		-		≏ (A11)		
Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLR/         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Target				- 2)					
Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Target				6)			-		
Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Total							-		
Dark Surface (S7) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed):		Very Shallow Dark Surface					-		
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. <b>Restrictive Layer (if observed):</b>	arks)	Other (Explain in Remarks)			LRR K, L)	Marl (F10) (LR		d Matrix (S6)	Stripped
Restrictive Layer (if observed):								ırface (S7)	Dark Su
Restrictive Layer (if observed):		or problematic	less disturbed (	acont un	must be n	etland hydrology m	tion and we	of hydrophytic vegetat	<sup>3</sup> Indicators o
				esent, un	must be pi	eliand hydrology m			
Depth (inches): Yes	esNo_X	ric Soil Present? Yes	Hyd					nches):	Depth (ii
Remarks:			<u> </u>						Remarks:
soils consist of fill material.								of fill material.	soils consist

Project/Site: Felland Road Property	City/County: Town of Burko Dono Cty Sampling Data: 1/22/18
	City/County: Town of Burke, Dane Cty Sampling Date: 4/23/18
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P9
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc.	Section, Township, Range: S23, T8N, R10E
Landform (hillside, terrace, etc.): pond Local	relief (concave, convex, none): <u>concave</u> Slope %: <u>0-1</u>
Subregion (LRR or MLRA): LRR K Lat:	Long: Datum:
Soil Map Unit Name: Gravel pit (GP)	NWI classification: E2H
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly distur	bed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problems	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	
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: W1 - pond
Remarks: (Explain alternative procedures here or in a separate report.)	
Based on WETS analysis, climatic conditions expected to be dry relative to relatively dry in the region for early spring, mostly a factor of limited spring	
have commenced based on green-up and bud burst of several non-evergre	
Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point lo	
Pond is an abandoned gravel pit.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (	B9) Drainage Patterns (B10)
X High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
X Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor	(C1) Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres	on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced In	on (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in	on (C4)     Stunted or Stressed Plants (D1)       n Tilled Soils (C6)     X   Geomorphic Position (D2)
Algal Mat or Crust (B4) Iron Deposits (B5) Recent Iron Reduction in Thin Muck Surface (C7)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3)
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remainded)	on (C4)       Stunted or Stressed Plants (D1)         n Tilled Soils (C6)       X       Geomorphic Position (D2)         Shallow Aquitard (D3)       Microtopographic Relief (D4)
Algal Mat or Crust (B4) Iron Deposits (B5) Recent Iron Reduction in Thin Muck Surface (C7)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3)
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remain Sparsely Vegetated Concave Surface (B8)         Field Observations:       Other (Explain in Remain Sparsely Vegetated Concave Surface (B8)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) X FAC-Neutral Test (D5)
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remained Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) X FAC-Neutral Test (D5)
Algal Mat or Crust (B4) Iron Deposits (B5) X Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No X Depth (inches) Water Table Present? Yes X No Depth (inches)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) X FAC-Neutral Test (D5) 2
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remain Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)         Water Table Present?       Yes       X       No       Depth (inches)         Saturation Present?       Yes       X       No       Depth (inches)	on (C4) Stunted or Stressed Plants (D1) n Tilled Soils (C6) X Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) X FAC-Neutral Test (D5) 2
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remained Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)         Water Table Present?       Yes       X       No       Depth (inches)         Saturation Present?       Yes       X       No       Depth (inches)         (includes capillary fringe)       Ves       X       No       Depth (inches)	on (C4)       Stunted or Stressed Plants (D1)         n Tilled Soils (C6)       X       Geomorphic Position (D2)         Shallow Aquitard (D3)       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         :       2         :       0         Wetland Hydrology Present?       Yes X         Yes X       No
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remain Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)         Water Table Present?       Yes       X       No       Depth (inches)         Saturation Present?       Yes       X       No       Depth (inches)	on (C4)       Stunted or Stressed Plants (D1)         n Tilled Soils (C6)       X       Geomorphic Position (D2)         Shallow Aquitard (D3)       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         :       2         :       0         Wetland Hydrology Present?       Yes X         Yes X       No
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remained Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)         Water Table Present?       Yes       X       No       Depth (inches)         Saturation Present?       Yes       X       No       Depth (inches)         (includes capillary fringe)       Ves       X       No       Depth (inches)	on (C4)       Stunted or Stressed Plants (D1)         n Tilled Soils (C6)       X       Geomorphic Position (D2)         Shallow Aquitard (D3)       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         :       2         :       0         Wetland Hydrology Present?       Yes X         Yes X       No
Algal Mat or Crust (B4)       Recent Iron Reduction in         Iron Deposits (B5)       Thin Muck Surface (C7)         X       Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remained Sparsely Vegetated Concave Surface (B8)         Field Observations:       Surface Water Present?       Yes       No       X       Depth (inches)         Water Table Present?       Yes       X       No       Depth (inches)         Saturation Present?       Yes       X       No       Depth (inches)         (includes capillary fringe)       Ves       X       No       Depth (inches)	on (C4)       Stunted or Stressed Plants (D1)         n Tilled Soils (C6)       X       Geomorphic Position (D2)         Shallow Aquitard (D3)       Microtopographic Relief (D4)         X       FAC-Neutral Test (D5)         :       2         :       0         Wetland Hydrology Present?       Yes X         Yes X       No

Wetland boundary generally at edge of open water, steep slopes around entire perimeter of pond. Pond is estimated to be 1 - 3 feet deep. Limited to no emergent vegetation present.

#### VEGETATION - Use scientific names of plants.

Sampling Point:

P9

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Acer saccharinum	50	Yes	FACW	Number of Dominant Species
2. Populus deltoides	20	Yes	FAC	That Are OBL, FACW, or FAC: 2 (A)
3				Total Number of Dominant
4				Species Across All Strata: 2 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet:
7		=Total Cover		Total % Cover of: Multiply by:
<u>Sapling/Shrub Stratum</u> (Plot size: 15ft )	70			$\begin{array}{c c c c c c c c c c c c c c c c c c c $
1				FACW species 50 $x 2 = 100$
2				FAC species $20 \times 3 = 60$
2				FACU species $0   x 4 = 0$
4				UPL species $0 \times 5 = 0$
5				Column Totals: 70 (A) 160 (B)
				Prevalence Index = $B/A = 2.29$
6 7				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				X 2 - Dominance Test is >50%
1				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6.				be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
		=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft )				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hudronhutio
3				Hydrophytic Vegetation
4				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa No emergent vegetation present.	rate sheet.)			
no omergent vegetation present.				

## SOIL

Profile Desc	ription: (Describe	to the de	pth needed to doc	ator or c	onfirm the absence o	f indicators.)				
Depth	Matrix			x Featur						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-10	10YR 2/1	90	10YR 5/6	10	С	М	Loamy/Clayey	SiL		
10-18	10YR 3/1	70	10YR 5/6	10	С	PL/M	Loamy/Clayey	SiL		
			10YR 4/2	20	D	М				
							·			
							·			
17 0.0										
Hydric Soil	oncentration, D=Dep	letion, RI	/I=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.		L=Pore Lining, M=Matrix.		
Histosol			Polyvalue Belo	w Surfa	ce (S8) (	LRR R.		ick (A10) (LRR K, L, MLRA 149B)		
	pipedon (A2)		MLRA 149B			,		rairie Redox (A16) ( <b>LRR K, L, R</b> )		
Black Hi			Thin Dark Surf	·	) (LRR R	, MLRA		icky Peat or Peat (S3) (LRR K, L, R)		
Hydroge	n Sulfide (A4)		High Chroma S					e Below Surface (S8) (LRR K, L)		
Stratified	Layers (A5)		Loamy Mucky	Mineral	(F1) ( <b>LR</b>	R K, L)	Thin Dar	rk Surface (S9) (LRR K, L)		
Depleted	d Below Dark Surface	e (A11)	Loamy Gleyed	Matrix (	F2)		Iron-Manganese Masses (F12) (LRR K, L, R)			
Thick Da	ark Surface (A12)		Depleted Matri	x (F3)			Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy M	lucky Mineral (S1)		X Redox Dark Su	urface (F	6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)			
Sandy R	edox (S5)		X Redox Depres	sions (Fa	8)		Very Shallow Dark Surface (F22)			
Stripped	Matrix (S6)		Marl (F10) ( <b>LR</b>	R K, L)			Other (E	xplain in Remarks)		
Dark Su	rface (S7)									
<sup>3</sup> Indicators of	f hydrophytic ycantol	tion and w	untland hydrology m	ust ha ar	rocont u	alaaa dia	urbod or problematic			
	Layer (if observed):		vetiand hydrology mi	ust be pi	esent, ui		turbed or problematic.			
Туре:										
Depth (ir	nches):						Hydric Soil Preser	nt? Yes <u>X</u> No		
Remarks:							1			
1										

	in Northeentral and Northeast Region
Project/Site: Felland Road Property	City/County: Town of Burke, Dane Cty Sampling Date: 4/23/18
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point: P10
Investigator(s): Jeff Kraemer, Heartland Ecological Group, Inc.	Section, Township, Range: S23, T8N, R10E
Landform (hillside, terrace, etc.): terrace Local	relief (concave, convex, none): linear Slope %: 3
	Long: Datum:
Soil Map Unit Name: Troxel silt loam	NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No x (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly distur	
Are Vegetation , Soil , or Hydrology naturally problema	
SUMMARY OF FINDINGS – Attach site map showing sam	pling 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
Hydric Soil Present?     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.)	
Based on WETS analysis, climatic conditions expected to be dry relative to	the time of year. Based on personal observations, conditions were
relatively dry in the region for early spring, mostly a factor of limited spring	
have commenced based on green-up and bud burst of several non-evergre	
Lonicera x bella, Taraxacum officinale, and Poa pratensis. Sample point lo	cated within low lying portion of mesic woodland.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (I	B9) Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (	C1) Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres of	on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Ire	on (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in	n Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar	ks) Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present?   Yes   No   X   Depth (inches):	
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	evious inspections), if available:
Remarks:	
ולפווומוגס.	

#### VEGETATION - Use scientific names of plants.

Sampling Point: P10

	Species?	Indicator Status	Dominance Test worksheet:
10	No	FAC	Number of Deminent Creation
5	No	FAC	Number of Dominant SpeciesThat Are OBL, FACW, or FAC:1(A)
50	Yes	FACU	Total Number of Dominant Species Across All Strata: 4 (B)
			Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B
			Prevalence Index worksheet:
65 :	=Total Cover		Total % Cover of: Multiply by:
			OBL species 0 x 1 = 0
5	Yes	FACU	FACW species 0 x 2 = 0
3	No	FACU	FAC species 30 x 3 = 90
10	Yes	FAC	FACU species 68 x 4 = 272
3	No	FAC	UPL species $0 \times 5 = 0$
			Column Totals: 98 (A) 362 (B
			Prevalence Index = $B/A = 3.69$
			Hydrophytic Vegetation Indicators:
21	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
10	Yes	FACU	$3 - Prevalence Index is \leq 3.0^{1}$
			4 - Morphological Adaptations <sup>1</sup> (Provide supportin
2	110	TAC	data in Remarks or on a separate sheet)
			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
			Definitions of Vegetation Strata:
			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height
			<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
	-Total Cover		Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.
			Woody vines – All woody vines greater than 3.28 ft i height.
			Hydrophytic
			Vegetation           Present?         Yes         NoX
	=Total Cover		
	5 3 10 3 21 10 2 10 2 12	5         Yes           3         No           10         Yes           3         No           21         =Total Cover           10         Yes           2         No	5         Yes         FACU           3         No         FACU           10         Yes         FAC           3         No         FAC           3         No         FAC           3         No         FAC           21         =Total Cover

Profile Desc	ription: (Describe	to the de	pth needed to doc	ument t	he indica	tor or c	onfirm the absence	of indicat	ors.)		
Depth	Matrix		Redo	x Featu	res						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		rks	
0-24	10YR 3/2	100					Loamy/Clayey	SiCL		-	
24-28	10YR 3/2	80					Loamy/Clayey		SiCl		
	10YR 4/3	20									
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RN	l=Reduced Matrix, N	MS=Mas	ked Sand	l Grains.	<sup>2</sup> Location:	PL=Pore l	_ining, M=Ma	ıtrix.	
Hydric Soil I									ematic Hydr		
Histosol			Polyvalue Belo		ce (S8) (I	LRR R,				MLRA 149B)	
	ipedon (A2)		MLRA 149E	,					dox (A16) ( <b>LI</b>		
Black His			Thin Dark Sur				149B)5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Polyvalue Below Surface (S8) (LRR K, L)				
	n Sulfide (A4) I Layers (A5)		High Chroma			-	Thin Dark Surface (S9) (LRR K, L)				
	Below Dark Surface	- (Δ11)	Loamy Gleyed			<b>、 Κ, Ε</b> )	Iron-Manganese Masses (F12) (LRR K, L, R)				
	rk Surface (A12)	5 (ATT)	Depleted Matr		(1 2)			Piedmont Floodplain Soils (F12) ( <b>MLRA 149B</b> )			
	ucky Mineral (S1)		Redox Dark S		-6)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
	leyed Matrix (S4)		Depleted Dark				Red Parent Material (F21)				
	edox (S5)		Redox Depres				Very Shallow Dark Surface (F22)				
	Matrix (S6)		Marl (F10) (LR		0)		Other (Explain in Remarks)				
	face (S7)			. ,			、	·	,		
			etland hydrology m	ust be p	resent, ur	nless dist	turbed or problematic				
	ayer (if observed):										
Туре:											
Depth (in	iches):						Hydric Soil Prese	ent?	Yes	<u>No X</u>	
Remarks:	to many sets a set of set of the t										
No redox rea	tures observed within	n several	soli profiles evaluat	ed withir	n this land	iscape p	ostion.				

Project/Site: Felland Road Property	City/County: Town of	of Burke, Dane Cty Sampling Date: 4/23/18						
Applicant/Owner: Zignego Ready Mix, Inc.	State: WI Sampling Point:							
Investigator(s): Jeff Kraemer, Heartland Ecologica	Section, Tow	Fownship, Range: S23, T8N, R10E						
Landform (hillside, terrace, etc.): terrace	Local re	elief (concave, convex	, none): linear	Slope %: 3				
Subregion (LRR or MLRA): LRR K			Long: Datum:					
Soil Map Unit Name: Troxel silt loam		NWI classification: none						
Are climatic / hydrologic conditions on the site typic	Yes	No x (If no, explain in Remarks.)						
Are Vegetation , Soil , or Hydrology	significantly disturb			ent? Yes x No				
Are Vegetation, Soil, or Hydrology			explain any answers in					
SUMMARY OF FINDINGS – Attach site	map showing samp	bing point location	ons, transects, im	iportant reatures, etc.				
Hydrophytic Vegetation Present? Yes	No X	Is the Sampled Are	ea					
Hydric Soil Present? Yes	No X No X	within a Wetland?		No X				
Wetland Hydrology Present? Yes	No X	If yes, optional Wet						
relatively dry in the region for early spring, mostly have commenced based on green-up and bud bu Lonicera x bella, Taraxacum officinale, and Poa p	rst of several non-evergree	n plant species on the	e site including Pastinad					
HYDROLOGY								
Wetland Hydrology Indicators:			Secondary Indicators (r	minimum of two required)				
Primary Indicators (minimum of one is required; c	heck all that apply)		Surface Soil Cracks	s (B6)				
Surface Water (A1)	Surface Water (A1) Water-Stained Leaves (B9)			(B10)				
High Water Table (A2)	Aquatic Fauna (B13)	-	Moss Trim Lines (B16)					
Saturation (A3)	Marl Deposits (B15)	-	Dry-Season Water Table (C2)					
Water Marks (B1)	Hydrogen Sulfide Odor (C	:1)	Crayfish Burrows (C8)					
Sediment Deposits (B2)	Oxidized Rhizospheres or	Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3)	Presence of Reduced Iror	n (C4)	Stunted or Stressed Plants (D1)					
Algal Mat or Crust (B4)	Recent Iron Reduction in	Tilled Soils (C6)	Geomorphic Position (D2)					
Iron Deposits (B5)	Thin Muck Surface (C7)	-	Shallow Aquitard (D3)					
Inundation Visible on Aerial Imagery (B7)	s)	Microtopographic Relief (D4)						
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)							

Field Observations:

Surface Water Present?	Yes	No	х	Depth (inches):				
Water Table Present?	Yes	No	Х	Depth (inches):				
Saturation Present?	Yes	No	Х	Depth (inches):	Wetland Hydrology Present?	Yes	No	Х
(includes capillary fringe)								

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

#### Remarks:

Sample point in area impacted by sediment deposition related to culvert that discharges near the intersection of Nelson and Felland Roads into this area. There were no drainage patterns or drainage channels observed. Likely sheet flow occurs occassionally and deposites sediment.

## VEGETATION - Use scientific names of plants.

Sampling Point: P11

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.	70 00001	000003:	Olalus	
2.				Number of Dominant Species           That Are OBL, FACW, or FAC:         1         (A)
3				Total Number of Dominant
4				Species Across All Strata: 2 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC:(A/B)
7				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15ft )				OBL species x 1 =0
1				FACW species 80 x 2 = 160
2				FAC species 0 x 3 = 0
3				FACU species 40 x 4 =160
4				UPL species 10 x 5 = 50
5				Column Totals: 130 (A) 370 (B)
6				Prevalence Index = B/A = 2.85
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5ft )				2 - Dominance Test is >50%
1. Phalaris arundinacea	80	Yes	FACW	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2. Poa pratensis	30	Yes	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3. Solidago canadensis	10	No	FACU	data in Remarks or on a separate sheet)
4. Bromus inermis	10	No	UPL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5.				1. diseters of buddie only and wetland buddels as much
6.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	130 :	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 30ft ) 1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
				Hydrophytic
				Vegetation           Present?         Yes         No _ X
4		=Total Cover		
Remarks: (Include photo numbers here or on a sepa				
		ry grass and b	rome grass.	Brome grass dominates the lower areas, downslope of
P11. RCG present in upper portions of slope that are				

Color (moist)         %         Color (moist)         %         Type         Los <sup>2</sup> Texture         Remarks           0-24         10YR 3/2         100	Depth	Matrix			x Featu						
24-28         10YR 3/2         60         Loamy/Clayey         SiCL           10YR 4/3         40         SiCL         SiCL         SiCL           10YR 4/3         SiCL         S	(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Rema	rks
10YR 4/3       40         10YR 4/4       40         10YR 4/4       40         10	0-24	10YR 3/2	100					Loamy/Clayey	/	SiC	L
Image: Soli Indicators in the solution of the s	24-28	10YR 3/2	60					Loamy/Clayey	/	SiC	L
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Deptht (inches):		10YR 4/3	40								
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Depth (inches):											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Deptht (inches):											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Pietrotive Layer (if observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Pietrotive Layer (if observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Pietrotive Layer (if observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Deptht (inches):			·			·					
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Deptht (inches):			·			·					
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Pietrotive Layer (if observed):       Type:         Type:						·					
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S9) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Pietrotive Layer (if observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)         Thick Dark Surface (A12)       Depleted Matrix (F3)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)         Sandy Redox (S5)       Redox Depressions (F8)         Dark Surface (S7)       Warl (F10) (LRR K, L) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Deptht (inches):			. <u> </u>		u						
Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S8) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149, 145, 149E)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Piedmont floodplain in Remarks)       Type:         "Type:	<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	/IS=Mas	ked Sand	d Grains.				
Histic Epipedon (A2)       MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S8) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R)         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 144A, 145, 149E         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       If observed):       Type:         Type:	-									-	
Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R, Hydrogen Sulfide (A4)         Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S8) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Settified Layer (if observed):       Type:         Type:						ace (S8) (I	LRR R,				,
Hydrogen Sulfide (A4)       High Chroma Sands (S11) (LRR K, L)       Polyvalue Below Surface (S8) (LRR K, L)         Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 144         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Restrictive Layer (if observed):       Type:         Type:							MIRA				
Stratified Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L)       Thin Dark Surface (S9) (LRR K, L)         Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Restrictive Layer (if observed):       Type:         Type:									-		
Depleted Below Dark Surface (A11)       Loamy Gleyed Matrix (F2)       Iron-Manganese Masses (F12) (LRR K, L, R         Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E)         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:							-		-		
Thick Dark Surface (A12)       Depleted Matrix (F3)       Piedmont Floodplain Soils (F19) (MLRA 149         Sandy Mucky Mineral (S1)       Redox Dark Surface (F6)       Mesic Spodic (TA6) (MLRA 144A, 145, 149E         Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       Restrictive Layer (if observed):       Type:         Type:			e (A11)				, ,				
Sandy Gleyed Matrix (S4)       Depleted Dark Surface (F7)       Red Parent Material (F21)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       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			. ,			. ,			-		
Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (F22)         Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       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 NoX	Sandy M	Mucky Mineral (S1)		Redox Dark Su	urface (I	=6)		Me	sic Spodic (1	TA6) ( <b>MLRA 1</b>	44A, 145, 149B)
Stripped Matrix (S6)       Marl (F10) (LRR K, L)       Other (Explain in Remarks)         Dark Surface (S7)       3       3         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       8         Restrictive Layer (if observed):       Type:       4         Depth (inches):       Hydric Soil Present?       Yes       No       X	Sandy (	Gleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Re	d Parent Ma	terial (F21)	
Dark Surface (S7) <sup>3</sup> 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	Sandy F	Redox (S5)		Redox Depress	sions (F	8)		Ve	ry Shallow D	ark Surface (F	-22)
<sup>3</sup> 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				Marl (F10) (LR	R K, L)			Oth	ner (Explain i	n Remarks)	
Restrictive Layer (if observed):	Dark Su	ırface (S7)									
Restrictive Layer (if observed):	<sup>3</sup> Indicators of	of hydrophytic vegeta	tion and w	etland hydrology mu	ust be p	resent, ur	nless dist	urbed or problem	atic.		
Depth (inches):          Hydric Soil Present?         Yes         No         X				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,					
	Type:										
Remarks:	Depth (i	nches):						Hydric Soil P	resent?	Yes	<b>No</b> X
	Remarks:							-			

ASSURED WETLAND DELINEATION REPORT



Stantec Consulting Services, Inc. 5356 Felland Road Project #: 20180033 June 25, 2018

# Appendix D | Site Photographs

Solutions for people, projects, and ecological resources.





Photo #1 Green up



Photo #3 Green up



Photo #5 Sample point P1 viewing East



Photo #2 Green up



Photo #4 Sample point P1 viewing North



Photo #6 Sample point P1 viewing South





Photo #7 Sample point P1 viewing West



Photo #9 Sample point P2 viewing East



Photo #11 Sample point P2 viewing West



Photo #8 Sample point P2 viewing North



Photo #10 Sample point P2 viewing South



Photo #12 Sample point P3 viewing North





Photo #13 Sample point P3 viewing East



Photo #14 Sample point P3 viewing South



Photo #15 Sample point P3 viewing West



Photo #17 Sample point P4 viewing East



Photo #16 Sample point P4 viewing North



Photo #18 Sample point P4 viewing South





Photo #19 Sample point P4 viewing West



Photo #21 Sample point P5 viewing South



Photo #23 Sample point P6 viewing East



Photo #20 Sample point P5 viewing North



Photo #22 Sample point P6 viewing North



Photo #24 Sample point P6 viewing South





Photo #25 Sample point P6 viewing West



Photo #27 Sample point P7 viewing South



Photo #29 Sample point P8 viewing East



Photo #26 Sample point P7 viewing North



Photo #28 Sample point P8 viewing North



Photo #30 Sample point P8 viewing South





Photo #31 Sample point P8 viewing West



Photo #32 Sample point P9 viewing South



Photo #33 Sample point P9 viewing West



Photo #35 Sample point P9 viewing East



Photo #34 Sample point P9 viewing North



Photo #36 Sample point P10 viewing North





Photo #37 Sample point P10 viewing East



Photo #38 Sample point P10 viewing South



Photo #39 Sample point P10 viewing West



Photo #41 Sample point P11 viewing East



Photo #40 Sample point P11 viewing North



Photo #42 Sample point P11 viewing South





Photo #43 Sample point P11 viewing West

ASSURED WETLAND DELINEATION REPORT



Stantec Consulting Services, Inc. 5356 Felland Road Project #: 20180033 June 25, 2018

# Appendix E | Delineator Qualifications

Solutions for people, projects, and ecological resources.



## **Jeff Kraemer**

Principal Scientist 506 Springdale Street Mount Horeb, WI 53572 jeff@heartlandecological.com (608) 433-9864

Jeff is the founder of Heartland Ecological Group, Inc. With over 16 years' experience as an environmental consultant, ecological and regulatory policy practitioner, and managing business leader, Jeff provides proven value to clients with his vast experience guiding often complex projects through environmental regulatory and technical challenges applied throughout a diversity of industry sectors. Jeff is recognized by the Wisconsin Department of Natural Resources Wetland Delineation Assurance Program and is the longest standing assured wetland delineator in the state of Wisconsin.

Jeff is a recognized expert in the field of wetland ecology and delineation; wetland restoration and mitigation banking; and regulatory policy and permitting associated with wetlands and waterways. His experience includes: Wetland Determination, Delineation & Functional Assessment; Wetland Restoration, Mitigation, Banking & Monitoring; Botanical / Biological Surveys & Natural Resource Inventories; Rare Species Surveys, Conservation Plans & Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Environmental Assessments; Local, state, federal permit applications; Expert Witness testimony; and Regulatory permit compliance.

## Education

MS, Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin – Milwaukee, WI, 2003

BS, Biological Sciences (Emphasis in Aquatic Biology) University of Wisconsin – La Crosse, WI 1999

Regional Supplement Field Practicum Wetland Training Institute (WTI) Portage, WI, 2017

Basic and Advanced Wetland Delineation Training, Continuing Education and Extension, UW-La Crosse, WI, 2001

Identification of Sedges Workshop, UW-Milwaukee, Saukville, WI 2001

Vegetation of Wisconsin Workshop, UW-Milwaukee, Saukville, WI 2000

Environmental Corridor Delineation Workshop, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004 Wetland Soils and Hydrology Workshop, Wetland Training Institute, Toledo, OH, 2003

Critical Methods in Wetland Delineation University of Wisconsin - La Crosse Continuing Education and Extension Madison, WI, 2006 - 2018

Federal Wetland Regulatory Policy Course Wetlands Training Institute (WTI) Cottage Grove, WI, 2010

## Registrations

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources (2005-Present)

Wetland Professional in Training (WPIT), Society of Wetland Scientists Certification Programs