CK ENTERPRISES

CK Enterprises, LLC
8467 Arbor Trace Drive
Verona, WI 53593
608-444-0123

February 18, 2016

Ms. Pam J Schense
Wisconsin Department of Natural Resources
101 S Webster Street
Madison, WI 53703

Ms. Kerrie Hauser
U.S. Army Corps of Engineers
La Crescent Regulatory Field Office
1114 South Oak Street
La Crescent, MN 55947

Dear Ms. Schense and Ms. Hauser,

On behalf of CK Enterprises, LLC, I am pleased to provide you with a Prospectus for a proposed compensatory wetland mitigation bank, "Big Hollow Wetland Bank" located in Sauk County, Wisconsin. Please contact me directly with questions or comments. We are looking forward to working with you on this project.

Sincerely,

Dale Clark

Dale Clark

Enclosure: WETLAND COMPENSATORY MITIGATION BANK PROSPECTUS
BIG HOLLOW WETLAND BANK

Cc: Jeff Kraemer

WETLAND COMPENSATORY MITIGATION BANK PROSPECTUS BIG HOLLOW WETLAND BANK

Town of Spring Green, Sauk County, Wisconsin

Prepared for:

Ms. Pam J Schense
Wisconsin Department of Natural Resources
101 S Webster Street
Madison, WI 53703

Ms. Kerrie Hauser
U.S. Army Corps of Engineers
La Crescent Regulatory Field Office
1114 South Oak Street
La Crescent, MN 55947

Prepared by:

CK Enterprises, LLC
8467 Arbor Trace Drive
Verona, WI 53593
(608) 444-0123

TABLE OF CONTENTS

1 Owner and Agent 3
2 Objectives 3
3 Operation 3
4 Service Area 4
5 Need 4
6 Technical Feasibility 4
7 Ownership and Long-term Management 4
8 Qualifications 5
9 Ecological Suitability 5
Table 1: Proposed Credits based on Anticipated Community Acreage 7
10 Hydrology 8

ATTACHMENTS

Attachment 1 – Project Maps (Figures 1- 7)
Attachment 2 - Wetland Delineation Report
Attachment 3 – Monitoring Well Boring Logs
Attachment 4 – Monitoring Well Hydrographs (Figures 8 -9)
Attachment 5 - Resumes

ED_005814A_00000025-00003

WETLAND COMPENSATORY MITIGATION BANK PROSPECTUS
BIG HOLLOW WETLAND BANK
FEBRUARY 18, 2016

CK Enterprises, LLC ("CKE") is pleased to provide information regarding a proposed wetland compensatory mitigation bank herein referred to as "Big Hollow Wetland Mitigation Bank" located in Section 2, Township 8 North, Range 3 East, in the Town of Spring Green, Sauk County, Wisconsin. Specifically, the Property is located southeast of the intersection of Big Hollow Road and CTH G (Attachment 1 - Figure 1. Project Location). The information provided below follows the template "Requirements for Submitting a Complete Mitigation Bank Prospectus to the St. Paul District, U.S. Army Corps of Engineers".

1 OWNER AND AGENT

Current landowner is Dale Clark (Clark Living Trust). The bank sponsor is CK Enterprises, LLC which will acquire the property within the project area and fulfill the terms of the Mitigation Banking Instrument (MBI). CKE will provide overall technical expertise of the wetland restoration design and mitigation banking instrument development. Additional consulting expertise will be provided from Stantec Consulting Services Inc. and Montgomery Associates Resource Solutions, LLC.

2 OBJECTIVES

The specific objective of the proposed mitigation bank is to restore approximately 125 acres of emergent wetland and up to 30 acres of upland buffer (Attachment 1 - Figure 2). Emergent wetland will consist primarily of wet meadow and sedge meadow communities with limited pockets of shallow marsh community. Upland buffers will consist of tallgrass mesic prairie. The wetland restoration will result in the enhancement of floral diversity, wildlife habitat, flood protection, and surface water and groundwater quality protection.

3 OPERATION

The wetland mitigation bank will be developed and operated in accordance with the Guidelines for Wetland Compensatory Mitigation in Wisconsin. The wetland mitigation bank will be established through wetland restoration of an existing agricultural field. The general anticipated design concept will include minor grading of the site to create microtopography. The site is positioned within the watershed that lends itself to occasional saturation and/or flooding near the surface. The design concept will include measures to retain water on-site for durations sufficient to support desired wetland plant communities. These measures may include berms, scraping, and ditch removal. In addition, a regional drainage ditch system that services other properties commences on the Site. The design concept will include measures to control the release of on-site water to the regional drainage ditch to maximize storage capacities on-site while avoiding any unintended consequences off-site, both up and down gradient. The bank site will be managed to promote wet meadow and sedge meadow. Limited establishment of shallow marsh is anticipated.

4 SERVICE AREA

The Site is located in the Lower Wisconsin River Bank Service Area and will service the Mississippi River Basin (Attachment 1 – Figure 3. Bank Service Area).

5 NEED

Currently there is only one approved wetland mitigation bank within the Lower Wisconsin River BSA with minimal to no credit availability. In general, the Mississippi River Basin mitigation bank credit availability does not fulfill the credit needs of the State. In-lieu fee has been utilized extensively throughout the basin. Approval and development of the proposed bank will help to address some of the credit shortages.

6 TECHNICAL FEASIBILITY

The site selected for this project is located within a geomorphic landscape position that is suitable for wetland restoration. The site has a history of a fluctuating high groundwater table and intermittent surface water flooding which have been studied and evaluated fairly extensively in the recent past in response to extreme flood events within the township. Ditch systems are currently maintained that minimize frequency, duration, and spatial extent of flooded or saturated conditions. The topography of the site is generally level with little topographic relief. Modifications to the existing drainage systems should result in hydroperiods sufficient to support targeted wetland plant communities. Intermittent scraping throughout the site to create microtopographic and hydrologic variations will favor development of diverse plant communities and habitat types. Selection of appropriate plant species and an aggressive adaptive management plan will promote native plant community development. A well qualified team of ecologists and water resource engineers experienced in wetland restoration will develop the detailed site design and management/monitoring plan. The selected design team has a history with the existing site and is knowledgeable of the historic and existing conditions as it relates to wetland restoration. The lead wetland ecologist for this project also lead the development of a successful wetland mitigation site in Trempealeau County using a similar approach that involved modifying and disabling the ditch system, shallow scraping to create microtopographic relief, customized seed and plant selection, and aggressive and adaptive management of the site. The water resource engineering team has supported the Township with past hydrological modeling efforts of this area in support of the flood relief evaluation and planning completed.

7 OWNERSHIP AND LONG-TERM MANAGEMENT

Ownership of the property is currently held by Dale Clark (Clark Living Trust) (Attachment 1 - Figure 4. Property Map). The bank sponsor, CKE will acquire the portions of the property incorporated into the compensatory wetland mitigation bank boundaries and will be responsible for achieving the terms of the Mitigation Banking Instrument (MBI) including short and long term management. The mitigation area will be protected in perpetuity through a conservation easement. Long-term ownership and management is currently assumed to continue with CKE. However, given the

proximity of the site to the Spring Green Preserve State Natural Area (Figure 4) currently under ownership by The Nature Conservancy, there may be opportunities for future incorporation into the state natural area or other partnerships with TNC (note: no discussions regarding this proposed project or potential partnerships have taken place to date with TNC).

8 QUALIFICATIONS

The bank sponsor is well qualified to successfully complete the mitigation project. The bank sponsor (CKE) currently consists of the landowner that presently farms the property and technical experts in wetland restoration and hydrology studies that have been involved with numerous successful wetland mitigation and restoration projects for decades.

9 ECOLOGICAL SUITABILITY

The proposed site is identified by WDNR as "potentially restorable wetlands" that align well with the proposed restoration area (Figure 4). WDNR wetland mitigation staff have completed site visits and indicated the sites suitability for wetland restoration to serve as a compensatory mitigation bank is favorable. The location of the proposed site provides a unique opportunity for development of a wetland mitigation bank site that will result in substantial ecological benefits. The entire site is currently under agriculture use, specifically row cropping and does not contain any natural habitat or vegetation outside of the existing ditch systems (Attachment 1 – Figure 5. 2013 Aerial Photograph).

A wetland delineation of the site was completed in 2014 under the WDNR wetland delineation assurance program and further field reviewed and confirmed by WDNR wetland identification program staff (Attachment 2 - Wetland Delineation Report). One small (1.1 acre), isolated farmed wetland was identified within the site, excluding the ditch system.

Soils mapped on the Property by the NRCS Soil Survey of Sauk County include Dakota loam (DaA), Gotham loamy sand (GoB), Pillot silt loam (PcA), Plainfield loamy sand (PfB, PfC), Sparta loamy sand (SpB), Sparta variant loamy sand (St), Toddville silt loam (TvA), and Watseka loamy sand (Wt). According to the NRCS List of Hydric Soils for Sauk County, the Watseka series may contain hydric inclusions. The Watseka soil series comprises the majority of the proposed wetland restoration area and is the basis of the WDNR mapped "potentially restorable wetland" (Figure 4). In general, soils within this area consist of fine sand and loamy sand associated with the Wisconsin River valley. The Watseka series specifically consists of very deep, somewhat poorly drained soils formed in sandy deposits or outwash sediments. They are situated on outwash plains and stream terraces. The attached wetland delineation report contains further details of soil profiles observed within the site.

The site has been in agricultural row crop production for decades and generally is productive. In recent years (2008 primarily) the site was subjected to extensive flooding as a result of heavy rainfall, significant surface inflows from the up gradient bluffs and valleys, and a significantly elevated groundwater table. Surface and groundwater impacts were widespread in the area during that time and portions of the Village of Spring Green, just down gradient from the site, as well as the Town of Spring Green experienced historic flooding events. As a result of these events, a regional drainage

ditch was constructed commencing in the southeast corner of the Clark Property, ultimately draining to the Wisconsin River due south of the site. Additionally, a stormwater detention basin was constructed in the northwest corner of the site to capture surface water runoff entering the site from the north and northwest. The construction and maintenance of both the regional drainage ditch and stormwater detention basin were carried out by the Town of Spring Green and Sauk County through easement agreements. More recently, through unrelated land use permit requirements obtained by Mr. Clark from Sauk County, Mr. Clark was required to construct a drainage ditch through the property to connect the detention basin to the regional drainage ditch. Mr. Clark worked with the County, WDNR, USACE, and NRCS to gain approvals for construction of the ditch.

Wetland restoration of this specific site, provides a unique opportunity to provide further flood protection and both groundwater and surface water quality protection that will be more ecologically beneficial than the existing drainage ditch system and current agricultural land use. By restoring wetland on the site, floodwater storage and groundwater infiltration will be increased, thereby slowing the release of direct agricultural surface water runoff into the regional ditch system which discharges into the lower Wisconsin River. The additional flood storage capacity provided by the restoration will further benefit and protect downstream flood prone property during heavy rainfall events while the increased residence time of surface water and groundwater stored on site during wet periods will allow for suspended solids to settle out prior to discharging downstream. Conversion of the site from agricultural row crop production to densely vegetated perennial wetland and prairie vegetation will lead to increased filtration of sediments and other pollutants and the uptake of excess nutrients prior to entering the Wisconsin River. The deeply rooted native vegetation will protect on-site soil from further wind and water erosion and lead to increased filtration and recharge of groundwater. The proposed plant communities will consist of wet meadow, sedge meadow and mesic prairie. A detailed planting plan will be developed upon approval of the prospectus. Projected wetland types and acreages as well as credits are presented in Table 1 below.

Table 1: Proposed Credits based on Anticipated Community Acreage

Anticipated Community	Anticipated Acres	Proposed Ratio	Proposed Credits
Wetland Restoration			
Wet Meadow	95	1:1	95
Sedge Meadow	25	1:1	25
Shallow Marsh	5	1:1	5
RESTORATION TOTALS	**125**		**125**
Wetland Enhancement			
Sedge Meadow	1.1	0.75:1	0.83
WETLAND ENHANCEMENT TOTALS	**1.1**		**0.83**
Upland/Wetland Buffer			
Upland Buffer (Mesic Prairie)	29	0.25:1	7.25
Stormwater Management Basin/Catchment Basin	3	0.25:1	0.75
BUFFER TOTALS	**30**		**8**
TOTAL PROJECTED ACRES/CREDITS	**158.1**		**133.83**

10 HYDROLOGY

The site receives substantial surface water runoff inflow from a drainage swale system that conveys runoff to the northwest corner of the site (Attachment 1 - Figure 6. Site Hydrologic Conditions). This drainage originates from local agricultural lands to the north and west and also includes runoff from Big Hollow, a valley that extends into the uplands north of the Wisconsin River valley terraces. The tributary watershed that discharges runoff to the northwest corner of the site has an area of approximately 12 sq.mi. Runoff enters the detention basin at the northwest corner of the site, and from there discharges through the excavated swale eastward and then south, exiting the site in the southeast corner (Figure 6). Before construction of the regional drainage relief channel, surface water runoff entering the site was trapped by the low sand dunes to the south, which created an intermittent condition of ponded surface water and extreme high groundwater conditions that occasionally produced area-wide flooding. The most significant recent flooding episode occurred during the severe storms of 2008, which inundated the site as well as extensive areas to the east and the west, including the Village of Spring Green. In response to the 2008 flooding, an excavated drainage relief channel was built that accepts runoff at the southeast corner of the property and discharges it to the Wisconsin River (Attachment 1 - Figure 7. Regional Hydrologic Conditions). Under present conditions, spring and summer storm runoff typically fills the detention basin and overflow runoff frequently crosses the site from west to east and exits via the drainage relief channel to the Wisconsin River. Areas of local surface ponding and soil moisture accumulation occur throughout the property, especially in the northern portion of the site, corresponding roughly to the extent of the Watseka loamy sand map unit.

Groundwater is present at relatively shallow depths throughout the Wisconsin River valley in the vicinity of the site. Much of the agricultural land in the area is irrigated using center-pivot irrigators served by high-capacity wells. Six groundwater monitoring wells identified as SG-1 through SG-6 were installed in the area near the site in 2008, during the investigations that led to the design and construction of the regional drainage relief channel, as shown on Figure 7. These wells were monitored from October 2008 through February 2009 as part of the drainage channel relief design project. Beginning in mid-2010 and through the present, these wells have been monitored by the Town of Spring Green.

Six soil borings and monitoring wells equipped with data loggers were installed on the Clark Property on December 15, 2015. Monitoring wells were installed to depths of 16 to 24 feet for the purpose of evaluating local and regional water table characteristics. Boring logs and monitoring well installation details are attached (Attachment 3). The soil borings indicate soil conditions that are consistent with the soil survey definitions. At the borings, the surface soils were composed of sandy loams, loamy sands, and sands, with subsurface soils generally consisting of fine to medium sands. An apparent buried soil horizon was encountered at a depth of approximately seven feet at MW-4, located at the edge of the sand dune area.

Water table elevation data from the six monitoring wells installed on-site, identified as MW-1 through MW-6 are being collected using automated data loggers, and data is available for a portion

of January 2016, with ongoing data collection. This water table data is shown on Figures 8 and 9 (Attachment 4). Note that the on-site water level elevations shown are based on available topographic data from the county. These wells will be tied to NAVD 88 elevation datum in the next several months, allowing more detailed comparison with the previously established wells. Initial review of the groundwater monitoring data indicates the following:

1. Regional groundwater flow directions are from north to south, consistent with previous analyses and investigations;
2. On-site monitoring wells 1 through 6 show elevations consistent with the regional water table wells;
3. The on-site monitoring well data for January 2016 indicates that the water table is located from 4 to 6 feet below the ground surface. However, on-site observations of soil moisture suggest that shallow perched or semi-perched water table conditions may typically exist in many portions of the site;
4. Monitoring Well-3 (MW-3), located in the northwest portion of the site adjacent to the detention basin shows the effects of detention basin water levels resulting from inflow to the basin during runoff events, indicating recharge to the local groundwater system from the detention basin;
5. The regional groundwater data shows that groundwater levels have fluctuated (up as well as down) approximately 5 feet since 2010, with the duration of high and low water levels often extending for more than one year.

Data collection and analyses are planned to further evaluate wetland hydrology conditions in the target wetland mitigation bank area. We expect that these activities will include:

- Continuing data collection at the six on-site and six regional monitoring wells;
- Installation of shallow monitoring wells in the target restoration areas to identify shallow perched and semi-perched water levels and evaluate wetland hydrology performance standards;
- Monitoring of surface water runoff through the site
- Groundwater and surface water analysis to evaluate the combination of surface water drainage
  alteration and groundwater elevations required to produce wetland hydrology in the mitigation areas;
- Analysis to confirm that the through flow of significant flood waters to the regional drainage relief channel leading to the Wisconsin River is unimpeded;
- Groundwater hydraulic analyses to confirm the mitigation design do not produce negative off-site water table impacts.

The planned wetland hydrology will be variable across the restoration site to maximize species and plant community diversity. The planned hydroperiod will generally consist of seasonally saturated soils with short durations of shallow inundation in lower lying areas after snowmelt and heavy rain

ED_005814A_00000025-00010

falls. To a lesser extent, the depressional areas and graded areas will experience longer durations of inundation and saturation. Semi -permanent inundation is not anticipated to occur within more than 5% of the restoration area. Development of hydrology performance standards for this site will require non-standard parameters. Hydrology is anticipated to be widely variable dependent on climatic conditions. The site will likely fluctuate between wet and dry cycles at various intervals and extremes, in which the hydrologic regime may not fit into the traditional hydrologic performance parameters commonly applied to emergent wetland restorations. Purposed hydrology performance standards will be developed as the hydrologic studies progress and will be developed in cooperation with the Interagency Review Team (IRT).

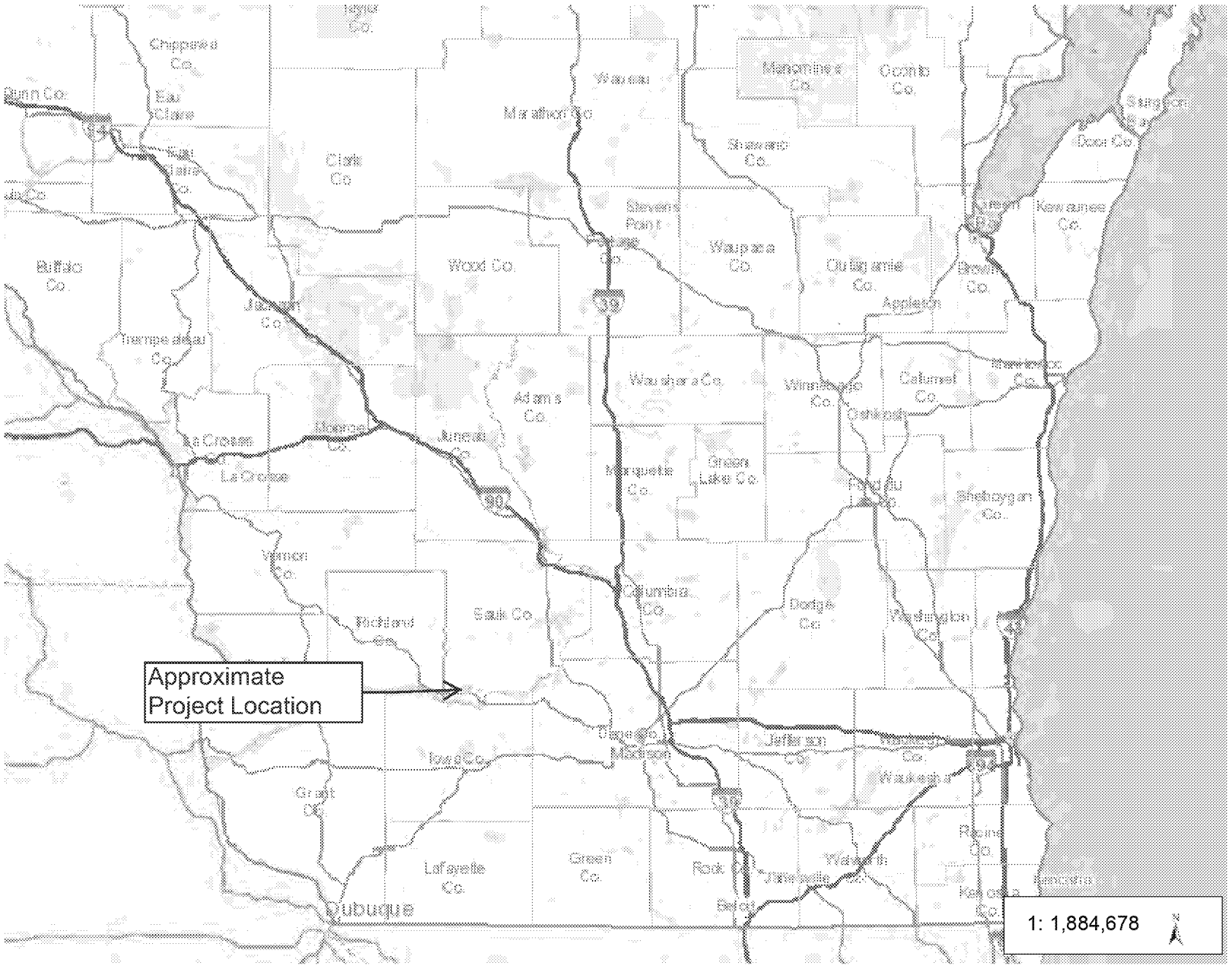
ED_005814A_00000025-00011

ATTACHMENT 1

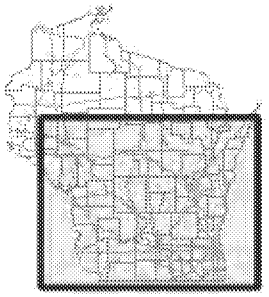
PROJECT MAPS (FIGURES 1 – 7)

CK ENTERPRISES

Figure 1. Project Location



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



Legend

- WI State Boundary
- County Boundary

Big Hollow Proposed Wetland Mitigation Bank

Section 2, Township 8N, Range 3E, Town of Spring Green, Sauk County, WI.

CK ENTERPRISES

Notes

Map derived from WDNR Surface Water Data Viewer

Figure 2. Restoration Concept Overview

Potentially expand sediment basin

On-site ditch to be removed

Regional ditch to remain with potential inlet modifications

Big Hollow Rd

1: 8,075

Legend

- Clark Property
- Project Area
- Wetland Restoration Area
- Upland Buffer
- Existing Sediment Basin
- Existing On-site Ditch
- Existing Regional Drainage Ditch

Big Hollow Proposed Wetland Mitigation Bank

Section 2, Township 8N, Range 3E, Town of Spring Green, Sauk County, WI.

CK ENTERPRISES

Notes

Map derived from WDNR Surface Water Data Viewer

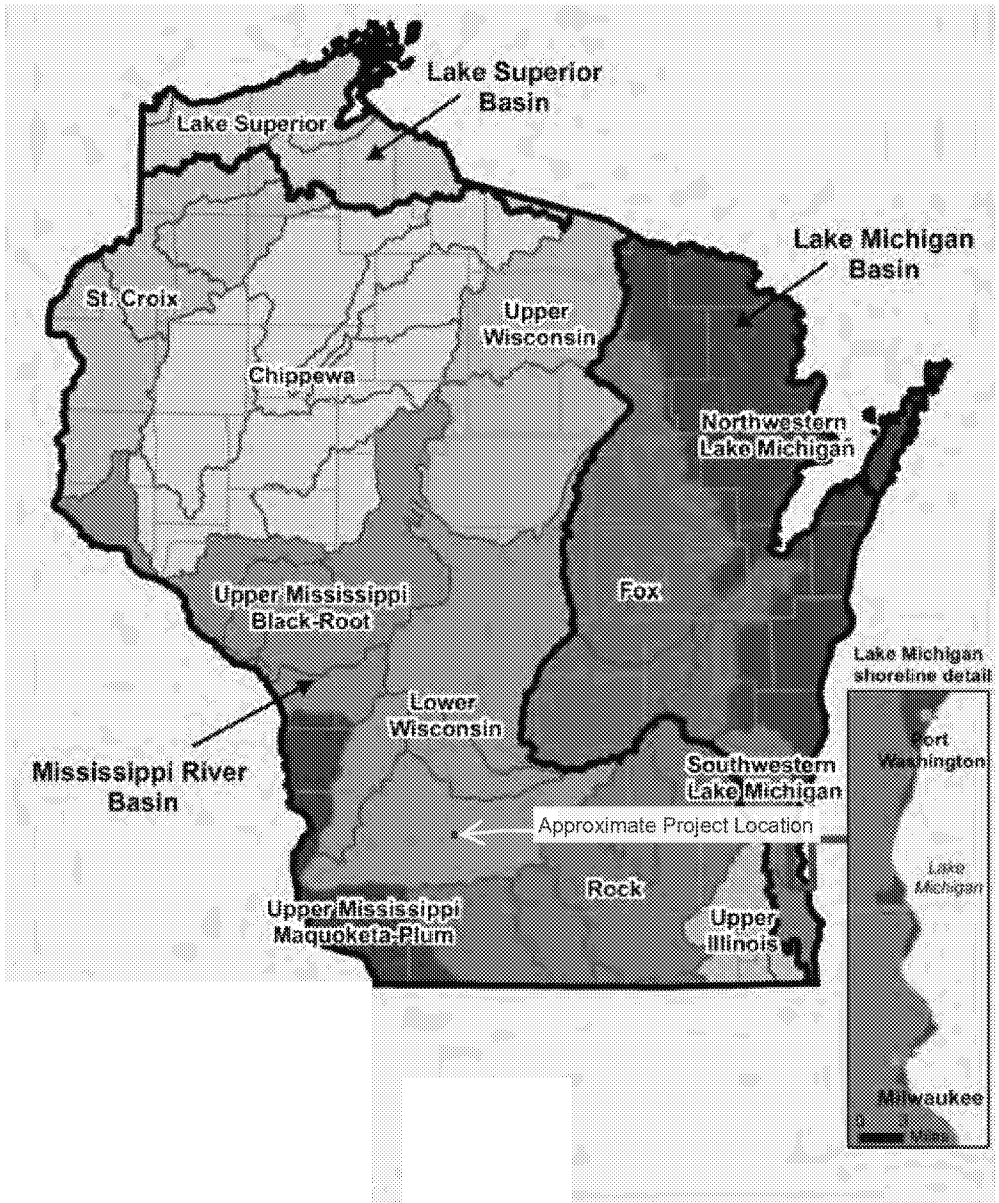
0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

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

Figure 3. Bank Service Areas (BSA) Relative to Project Location



Legend

- Major Basins
- HUC-8 Boundaries
- County Boundaries

Big Hollow Proposed Wetland Mitigation Bank

Section 2, Township 8N, Range 3E, Town of Spring Green, Sauk County, WI.

CK ENTERPRISES

Not to Scale

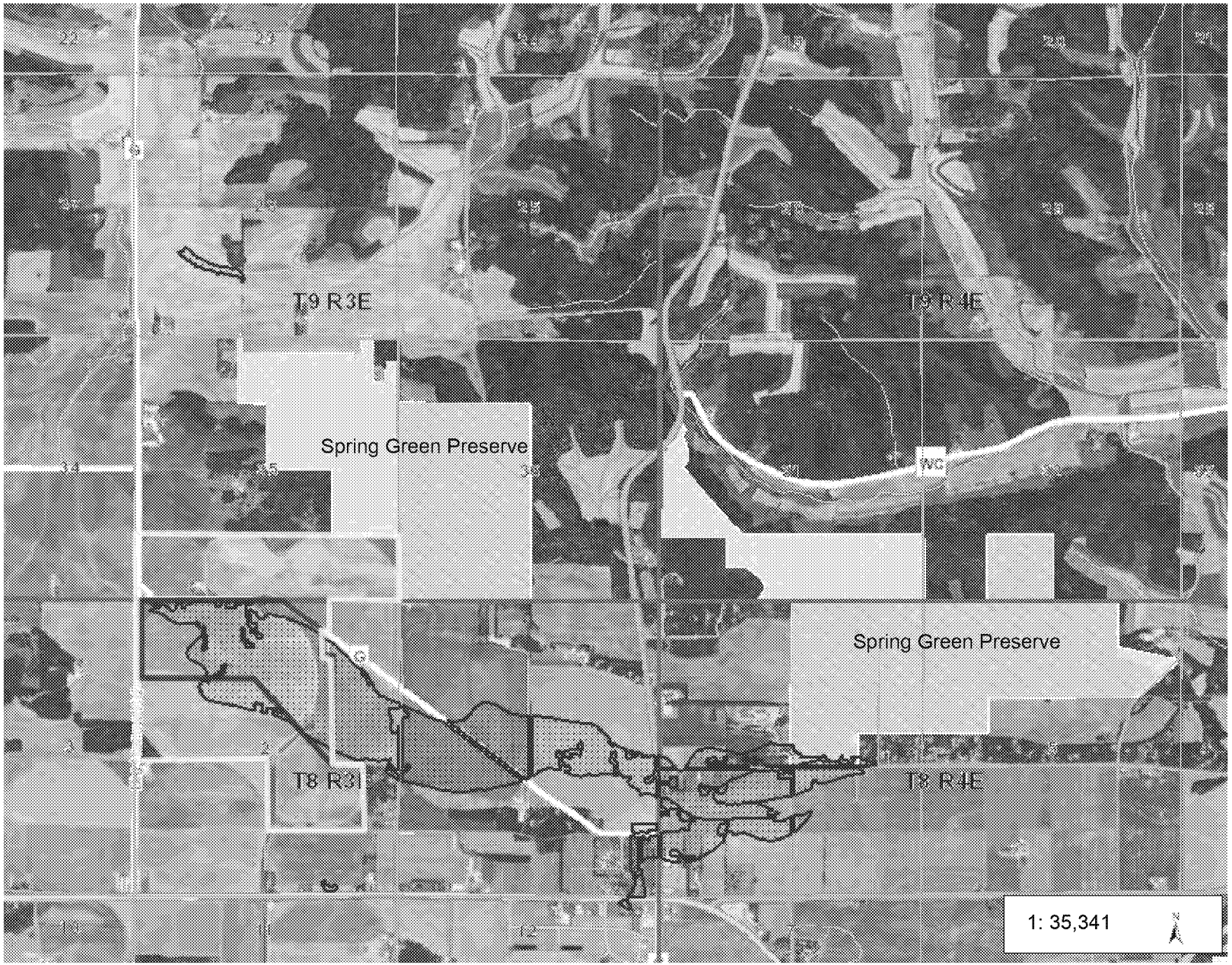
Notes

Map derived from WDNR Surface Water Data Viewer

0 25 50 100 Miles

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

Figure 4. Clark Property and Project Area Relative to WDNR Mapped Restorable Wetlands and Spring Green Preserve (TNC Lands)



Legend

- Potentially Restorable Wetland
  - Less than 0.5 Acres
  - PRW
- Township
- Section
- State Natural Area (TNC)
- Clark Property
- Project Area

Big Hollow Proposed Wetland Mitigation Bank

Section 2, Township 8N, Range 3E, Town of Spring Green, Sauk County, WI.

CK ENTERPRISES

Notes

Map derived from WDNR Surface Water Data Viewer

1.1 0 0.56 1.1 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

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

Figure 5. 2013 Aerial Photograph

Legend

Clark Property

Project Area

Big Hollow Proposed Wetland Mitigation Bank

Section 2, Township 8N, Range 3E, Town of Spring Green, Sauk County, WI.

CK ENTERPRISES

Notes

Map derived from WDNR Surface Water Data Viewer

0.3 0 0.15 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

© Latitude Geographics Group Ltd.

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

Runoff inflow from Big Hollow

Parcel boundary

MW 3
Groundwater Elevation: 720

Detention Basin

Existing center-pivot irrigation well

MW 1
Groundwater Elevation: 718

MW 6
Groundwater Elevation: 718

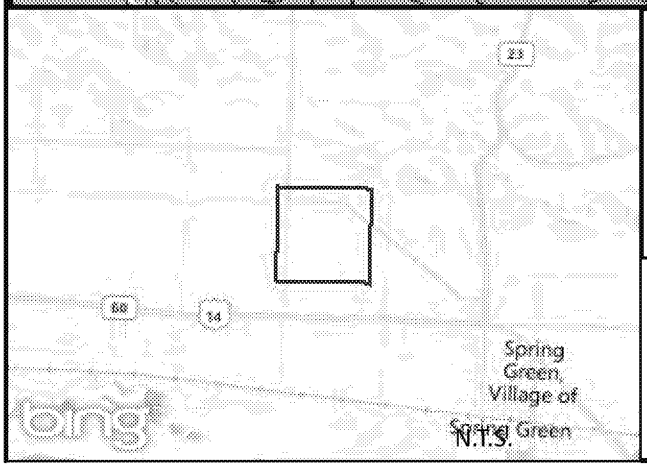
Excavated drainage relief channel

MW 4
Groundwater Elevation: 716

MW 2
Groundwater Elevation: 716

MW 5
Groundwater Elevation: 716

NOTE: Groundwater elevations were measured 1/21/2016 by Montgomery Associates, Resource Solutions, LLC



N

Legend

- Monitoring Wells
- Sauk Co. LiDAR 2' Contour
- Sauk Co. LiDAR 10' Contour

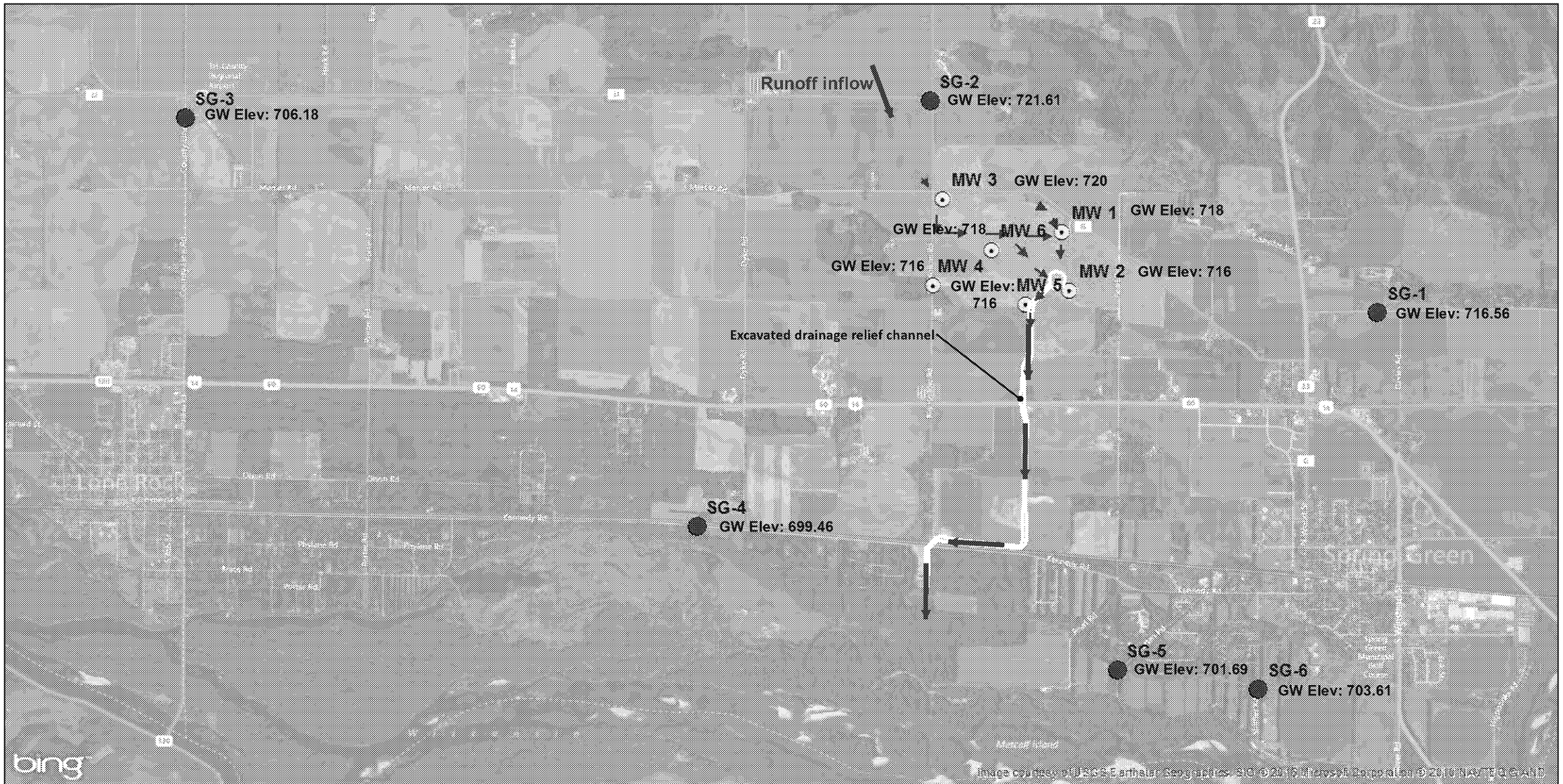
0 150 300 600 Feet

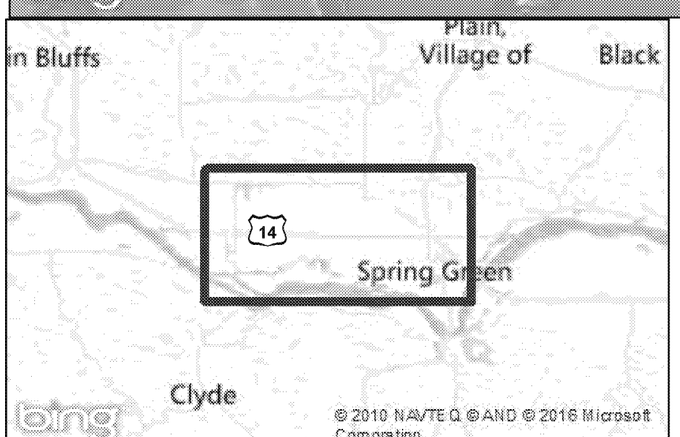
Figure 6 - Site Hydrologic Conditions Map

Clark Site Hydrologic Analysis
Town of Spring Green
Sauk County, WI

Montgomery Associates: Resource Solutions LLC
119 South Main St.
Cottage Grove, WI 53527
www.ma-rs.org
(608) 839-4422

Drawn by: DMW | 1/29/2016 | Coordinate System: Sauk County





NOTES:
1. 2008 Monitoring Wells were installed October 2008. Groundwater levels were measured by the Town of Spring Green on 12/15/2015.
2. 2015 Monitoring Wells were installed December 2015. Groundwater levels were measured by Montgomery Associates Resource Solutions, LLC on 1/21/2016.

Legend

- 2008 Monitoring Wells
- 2015 Monitoring Wells

DRAWN BY	CHECKED BY
DMW	RJM

MONTGOMERY ASSOCIATES:
RESOURCE SOLUTIONS, LLC
119 South Main Street | Cottage Grove, WI 53527
(608) 839-4422 | www.ma-rs.org

REGIONAL HYDROLOGIC CONDITIONS MAP

Dale Clark Site Wetland Mitigation Bank
Town of Spring Green, Sauk County WI

N
W E
S

0 1,500 3,000 Feet

SCALE
1 inch = 3,000 feet

PROJECT NO.	DATE
1711	1/29/2016

SHEET NO.
Figure 7

ATTACHMENT 2

WETLAND DELINEATION REPORT

CK ENTERPRISES

From: Molstad, Neil E - DNR
To: Kraemer, Jeff
Cc: Nedland, Thomas S - DNR; Schure, Jeff J - DNR; kerrie.j.hauser@usace.army.mil
Subject: Site Visit Summary Memorandum - Clark Property Town of Spring Green Sauk County
Date: Thursday, May 14, 2015 11:02:09 AM
Attachments: Clark_WtldRpt_DRAFT_121514 17.pdf

Good morning,

This email is intended to briefly summarize the results of a field meeting at property owned by Mr. Dale Clark. A wetland delineation on the approximately 280 acre property was conducted by Jeff Kraemer of Stantec on November 7, 2014, the results of which are shown on the attached figure. However, much of this property has been subject to occasional, long term flooding and ponded conditions (1993 and 2008). Additionally, the landowner, town, and county have constructed various stormwater retention and conveyance features in and around Mr. Clark's property in an attempt to mitigate this long term ponding and flooding, which has caused significant damage to land and other property throughout the area. In light of these circumstances, Mr. Kraemer contacted the Wisconsin Department of Natural Resources (DNR) for clarification as to if any portions of Mr. Clark's property beyond the wetland areas he delineated were subject to DNR wetland regulatory authority.

The site visit was conducted on Wednesday, May 13, 2015, with the following people present:

Jeff Kraemer, Stantec
Mr. Dale Clark
Tom Nedland , DNR
Neil Molstad, DNR
Jeff Shure, DNR
Town of Spring Green representative

As a result of the site visit, the DNR confirms Mr. Kraemer's wetland boundaries as depicted on the attached map. Furthermore, it does not appear that any of the recently built stormwater retention and conveyance features on Mr. Clark's property were constructed within regulated wetlands, provided that documentation is produced from the U.S. Army Corps of Engineers stating no wetland was present within the area referred to in the attached exhibit as "Regional Drainage Ditch".

Please feel to call or email me with any questions or comments.

Regards,

Neil Molstad

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Neil Molstad
Wetland Identification Specialist
Wisconsin Department of Natural Resources
141 NW Barstow Room 180-Waukesha, WI 53188
Phone: (262) 574-2115
Work Cell: (414) 322-4978
Neil.Molstad@wisconsin.gov

dnr.wi.gov

Wetland Delineation Report

Clark Property Wetland Delineation
Town of Spring Green, Sauk County, WI
Stantec Project #: 193703359

Stantec

Prepared for:
Dale Clark
8467 Arbor Trace Drive, Verona, WI 53593

Prepared by:
Stantec Consulting Services Inc.
209 Commerce Parkway,
PO Box 128
Cottage Grove, Wisconsin 53527
Phone: (608) 839-1998
Fax: (608) 839-1995

December 15, 2014

Sign-off Sheet

This document entitled Wetland Delineation Report was prepared by Stantec Consulting Services Inc. (Stantec) for Dale Clark. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Prepared by _ _____
(signature)

Kate Remus

Reviewed by _____
(signature)

Jeff Kraemer, Principal

Stantec

Table of Contents

1.0 INTRODUCTION 1.2

2.0 METHODS 2.3
2.1 WETLANDS 2.3

3.0 RESULTS 3.5
3.1 SITE DESCRIPTION 3.5
3.2 SITE HISTORY 3.5
3.3 WETLANDS 3.5
3.3.1 Wetland 1 ..... 3.6
3.4 UPLAND 3.7
3.5 OTHER ENVIRONMENTAL CONSIDERATIONS 3.7

4.0 CONCLUSION 4.8

5.0 REFERENCES 5.9

LIST OF TABLES

Table 1. Summary of Wetlands Identified within the Property 3.6

LIST OF APPENDICES

APPENDIX A – FIGURES A.1

APPENDIX B – WETLAND DETERMINATION DATA FORMS B.2

APPENDIX C – SITE PHOTOGRAPHS C.3

APPENDIX D – WETS ANALYSIS D.4

APPENDIX E – FSA AERIAL SLIDE ANALYSIS E.5

RESUME E.6

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) performed a wetland determination and delineation of the Clark property (the "Property") on behalf of Dale Clark. The Property is approximately 280 acres in size and located in Section 2, Township 8 North, Range 3 East, in the Town of Spring Green, Sauk County, Wisconsin. Specifically, the Property is located southeast of the intersection of Big Hollow Road and CTH G (Figure 1).

The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Property. The initial intent of the wetland determination was to present a professional opinion as to whether a recently excavated agricultural ditch was developed within wetlands, however the entire Property as depicted in Figures 1-4 was evaluated for wetland conditions. The recently excavated ditch was created in coordination with Sauk County Land Conservation and Natural Resource Conservation Service (NRCS). The ditch itself was not evaluated for wetland conditions as it was recently created, however based on field observations the ditch does express wetland characteristics (wetland hydrology and wetland vegetation).

The wetland delineation was completed by Jeff Kraemer of Stantec, a wetland professional whose wetland delineation work is assured by the Wisconsin Department of Natural Resources (WDNR), on November 7, 2014. One wetland area was identified on the Property. Although the wetland delineation fieldwork was completed approximately one week outside of the growing season, limitations of the wetland determination were minimal. The investigation area is entirely cropped for commercial production and weed control is aggressive, therefore it is unlikely that additional vegetation characteristics would be substantially different if completed during the growing season. Additionally, since the area is cropped, emphasis was placed on recent and historic conditions based on desktop review of aerial photographs. Furthermore, conditions during the time of the investigation were wetter than normal for the time period such that hydrologic conditions were relevant, although not investigated during the wet portion of the growing season. There was no frost or snow cover present at the time of the field investigation.

Wetlands and waterways that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers (USACE). Additionally, the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350 and 353. Finally counties, townships and municipalities may have local zoning authority over certain types of wetlands and waterways. Stantec recommends this report be submitted to local authorities, the WDNR and USACE for final jurisdictional review and concurrence.

2.0 METHODS

2.1 WETLANDS

Wetland determinations were based on the criteria and methods outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (1987) and subsequent guidance documents (USACE 1991, 1992), and applicable Regional Supplements to the *Corps of Engineers Wetland Delineation Manual.*

The wetland determination involved the use of available resources to assist in the assessment such as U.S. Geological Survey (USGS) topographic maps, U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey, WDNR Wisconsin Wetland Inventory (WWI) mapping, and aerial photography.

On-site wetland determinations were made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the USACE 1987 Manual and applicable Regional Supplement. According to procedures described in the 1987 Manual and applicable Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

Additionally, as climate plays an important role in the formation and identification of wetlands, the antecedent precipitation in the months leading up to the field investigations was reviewed. The current year's precipitation data was compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using a WETS analysis as developed by the NRCS.

A review of U.S. Department of Agriculture Farm Service Agency (FSA) annual aerial slides and photographs was conducted for the Property to assist in the wetland determination because farmed areas with mapped poorly drained or somewhat poorly drained soils are present on the Property. The aerial photographs were reviewed for the appearance of wetland signatures. A wetland signature is field evidence, recorded by a photograph, of ponding, flooding, or impacts of saturation for sufficient duration, which meets wetland hydrology and possibly wetland vegetation criteria. Wetland signatures in cropland for Wisconsin are as follows (NRCS 1998):

1. Hydrophytic vegetation (seen as a different color of green)
2. Surface water (usually black or white)
3. Drowned-out crops (bare soil or mud flats)
4. Differences in color due to different planting dates or isolated areas not farmed with the rest of the field
5. Inclusions of wet areas in set-aside program
6. Patches of greener color in "dry" years
7. Crop stress (yellow) or sparse canopy (light green)
8. Saturated soil visible on infrared (IR) slides or photos

The antecedent precipitation in the months leading up to each annual crop slide was reviewed and compared to long-term (30-year) precipitation averages and standard deviation to determine if each year was normal, wet, or dry using a WETS analysis (Appendix D).

Mapped poorly and somewhat poorly drained soils were identified on the Property and the annual crop slides were analyzed for signatures of wetness consistency in these areas (FSA Aerial Slide Analysis in Appendix E). Areas within agricultural fields are typically identified as wetland if they contain hydric soils and 50% or more of the aerial photographs taken in the five (or more) most recent normal precipitation years show any of the wetland signatures listed above. However, while the focus of the analysis is on wetland signatures visible in normal precipitation years, years considered wet or dry for received precipitation were also analyzed. Wetland determinations and wetland boundaries are identified based on the photograph having the largest wetland boundary during a "normal" rainfall year if signatures were apparent in at least 50% of the years (NRCS 1998).

The uppermost wetland boundary and sampling points were identified and surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information System (GIS) software.

3.0 RESULTS

3.1 SITE DESCRIPTION

The Property is comprised of a large agricultural field served by a central-pivot irrigation system with small agricultural fields to east of the extent of the irrigation system. The Property is flat, sloping to the southeast averaging approximately 725 feet mean sea level (msl) across the site. The Property is bordered by Big Hollow Road to the west, CTH G to the north, and agricultural fields to the south and east.

Soils mapped on the Property by the NRCS *Soil Survey of Sauk County* include Dakota loam (DaA), Gotham loamy sand (GoB), Pillot silt loam (PcA), Plainfield loamy sand (PfB, PfC), Sparta loamy sand (SpB), Sparta variant loamy sand (St), Toddville silt loam (TvA), and Watseka loamy sand (Wt)(Appendix A, Figure 2). According to the NRCS List of Hydric Soils for Sauk County, the Watseka series may contain hydric inclusions. Wetlands identified during the field investigation are located primarily within areas mapped as having the potential to contain hydric inclusions.

The Wisconsin Wetland Inventory (WWI) map does not identify any wetlands within the Property or adjacent properties (Appendix A, Figure 3). The field delineated wetland (W-1) is not identified on the WWI map (Appendix A, Figure 4).

Average precipitation for the investigation area was obtained from the Lone Rock Tri-County Airport weather station (NWS station #WI921), located in Lone Rock, WI and used for the WETS analysis. Based on the WETS analysis, conditions were wetter than normal (Appendix D).

3.2 SITE HISTORY

The Property has been in agricultural row crop production for decades and generally is productive. The Property is currently utilized for commercial production of soy beans and corn. In recent years (2008 primarily) the Property was subjected to extensive flooding as a result of heavy rainfall, significant surface inflows from the up gradient bluffs and valleys, and a significantly elevated groundwater table. Surface and groundwater impacts were widespread in the area during that time and a substantial portion of the Village of Spring Green, just down gradient from the site, as well as the Township of Spring Green experienced historic flooding events. As a result of these events, a regional drainage ditch was constructed commencing in the southeast corner of the subject Property, ultimately draining to the Wisconsin River due south of the Property. Additionally, a stormwater detention basin was constructed in the northwest corner of the Property. Both the regional drainage ditch and stormwater detention basin were carried out by Sauk County through easement agreements. More recently, through unrelated land use permit requirements obtained by Mr. Clark from Sauk County, Mr. Clark was required to construct a drainage ditch through the subject Property to connect the detention basin to the regional drainage ditch. Mr. Clark worked with the County and NRCS to gain approvals for construction of the ditch. WDNR (Jeff Schure) contacted Mr. Clark regarding construction of the ditch, after-the-fact, requesting completion of a wetland determination within the vicinity of the constructed ditch in order to document whether construction was completed in jurisdictional wetlands.

3.3 WETLANDS

One wetland was identified and delineated within the Property. Wetland determination data forms were completed for six sample points along transects through the wetlands and adjacent uplands and are contained in Appendix B. Photographs of the wetlands and adjacent lands are contained in Appendix C.

The wetland boundary and sample point locations are shown on Figure 4 (Appendix A). The wetland is summarized in Table 1 and described in detail in the following section.

Table 1. Summary of Wetlands Identified within the Property

Wetland	Wetland Type	Adjacent Surface Waters	Acreage (on-site)
Wetland 1 (W-1)	Farmed Wetland	No inlets/outlets observed	1.11 acres

3.3.1 Wetland 1

Wetland 1 (W-1) is a farmed wetland located within a depression dominated by annual weed species within an active agricultural field. The wetland appeared to be contained on-site with no direct inlets or outlets to surface water bodies observed.

Vegetation

Dominant plant species identified at sample point P-5 completed within W-1 consist of barnyard grass (*Echinochloa crus-galli*, FACW) and bald spike-rush (*Eleocharis erythropoda*). While located within an active agricultural field planted to soybeans (*Glycine* max) in 2014, the dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated/saturated hydroperiod. The wetland was identified as a problem area due to the seasonal nature of the hydroperiod and lack of primary hydrology indicators observed during the evaluation. However, secondary indicators of wetland hydrology included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Watseka loamy sand (Appendix A, Figure 2). The Watseka series consists of very deep, somewhat poorly drained soils formed in sandy outwash. The soils observed at the sample points were generally inconsistent with the Watseka series characteristics. However, the Property has been subject to large-scale flooding which likely has deposited new soil materials during flood events and disturbances from agricultural activities also effects the soil characteristics. Regardless, field indicators of hydric soil were observed and consisted of NRCS field Indicators A11 – Depleted Below Dark Surface and F3-Depleted Matrix. Therefore, the hydric soil criterion was satisfied.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a farmed wetland community dominated by barnyard grass and bald spike-rush to a farmed upland community not exhibiting crop stress or the presence of hydrophytic weed species; 2) Transition from an area exhibiting hydrology indicators to areas lacking wetland hydrology indicators within the adjacent upland; and 3) Transition from poorly drained hydric soils to somewhat poorly drained non-hydric soils. The transition from wetland to upland characteristics generally correlated with a subtle topographic break.

3.4 UPLAND

Upland within the Property consisted of farmed upland planted to soybeans in 2014. The soybean crop had been harvested by the time the field investigation was conducted; however, where annual weed species were observed, overall cover was limited and species were mostly non-hydrophytes. As the Property is in agricultural production, an FSA slide review was completed prior to the field investigation. Based on review of several FSA slides dating back to 1985, the Property has been subject to numerous flooding events which have resulted in inundated conditions at various times. As a result, evidence of wetland signatures within the central portion of the site were observed in most years in review of the FSA slides. While much of the site appears to be subject to flooding, wetland characteristics that would indicate that conditions within the Property are wet enough for a long enough period of time to support wetland development were lacking. Field investigations confirmed a lack of wetland hydrology and hydric soil indicators and hydrophytic weedy species within the majority of the area identified as potential wetland in the FSA slide review. Therefore, farmed uplands within the Property were determined to be non-wetland regardless of observed wetness signatures in the FSA slide review due to the lack of wetland hydrology indicators observed in the field, the lack hydric soil indicators, and the lack of dominance by weedy annual hydrophytes.

3.5 OTHER ENVIRONMENTAL CONSIDERATIONS

This report is limited to the identification of state and/or federally regulated wetlands within the Property. However, there may be other regulated environmental features within the Property, including, but not limited to, historical or archeological features, endangered or threatened species, navigable waters and/or floodplains, etc. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or in close proximity to these features. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

Specifically, in the state of Wisconsin, Wis. Adm. Code NR 151.12 requires that a "protective area" or buffer be determined from the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands. In accordance with NR 151.12, the width of the "protective buffer" for less susceptible wetlands are determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. Lakes, perennial and intermittent streams, and highly susceptible wetlands and wetlands in areas of special natural resource interest may require buffers of 50 and 75 feet, respectively. The wetland identified on the Property is dominated by invasive plant species, specifically barnyard grass. Therefore, based on the "protective buffer" standards provided by NR 151.12, it is Stantec's professional opinion that the wetland meets the criteria for less susceptible wetlands and the buffer from the wetland boundary would be 10 to 30 feet. However, the jurisdictional authority on wetland buffers rests with the WDNR. The local unit of government and/or regional planning organization may have more restrictive buffers from wetlands than that imposed under NR 151.

4.0 CONCLUSION

Stantec performed a wetland determination and delineation of the Clark property on behalf of Dale Clark. The approximately 280-acre Property is located in Section 2, Township 8 North, Range 3 East, in the Town of Spring Green, Sauk County, Wisconsin. The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Property.

One wetland was identified and delineated within the Property in accordance with state and federal guidelines and was subsequently surveyed with a GPS and mapped using GIS software. There were a combined total of 1.11 acres of wetlands on the Property. Wetlands were mostly composed of farmed wetland. Adjacent uplands were composed of agricultural lands.

The USACE has regulatory authority over Waters of the U.S. including adjacent wetlands, and the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350 and 353. Finally counties, townships and municipalities may have local zoning authority over certain types of wetlands and waterways.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work to comply with applicable regulations. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present on the site at the time of the fieldwork. The delineation was performed by experienced and qualified professionals using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the site can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands on the site.

5.0 REFERENCES

Environmental Laboratory. (1987). *Corps of Engineers wetlands delineation manual.* (TR Y-87-1). Vicksburg, MS: U.S. Army Engineers Waterways Experiment Station.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W. N. Kirchner. 2014. *The National Wetland Plant List:* 2014 Update of Wetland Ratings. Phytoneuron 2013-41: 1-4. http://rsgisias.crrel.usace.army.mil/NWPL/.

Munsell® color. 2009. Munsell Soil-Color Charts. Grand Rapids, MI.

Soil Survey Staff, Natural Resource Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Sauk County, Wisconsin. Available online at http://datagateway.nrcs.usda.gov/ or http://websoilsurvey.nrcs.usda.gov/.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed [12/15/14].

U.S. Army Corps of Engineers (USACE). *"Clarification and Interpretation of the 1987 Manual,"* memorandum from Major General Arthur E. Williams dated 6 March 1992.

USACE. *"Clarification of the Phrase "Normal Circumstances" as it pertains to Cropped Wetlands,"* Regulatory Guidance Letter (RGL) 90-7 dated 26 September 1990.

USACE. "*Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers*", Public Notice from Ben Wopat dated 22 May 1996.

USACE. *"Implementation of the 1987 Corps Wetland Delineation Manual,"* memorandum from John P. Elmore dated 27 August 1991.

USACE. 2014. National Wetland Plant List, version 3.2. USACE Engineer Research and Development Center, Cold Water Regions Research and Engineering Lacoratory, Hanover, N.H. Retrieved from http://wetland_plants.usace.army.mil/.

USACE *"Questions & Answers on the 1987 Manual,"* memorandum from John F. Studt dated 7 October 1991.

USACE. 2010. "*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0),*" ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture, Farm Service Agency (USDA, FSA). (1985-1994, 1996-2002, 2004-2008, 2010, 2013) [Sauk County, Wisconsin aerial photographs]. National Agriculture Imagery Program (NAIP). Salt Lake City, UT: Aerial Photography Field Office.

U.S. Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS). 2010. *Field Indicators of Hydric Soils in the United States*, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

USDA, NRCS. 1998. *Wisconsin Wetland Mapping Conventions – WI513.30(c) Off-site wetland identification tools*. (WI-180-V-NFSAM). (3rd ed.) (Amendment WI21).

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

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

Wisconsin Department of Natural Resources (WDNR), Bureau of Watershed Management. (2010). [Digital inventory of Wisconsin wetlands]. *Wisconsin Wetland Inventory*.

WDNR, Division of Water. (2010). [24k hydrography geospatial data layer]. Available online: ftp://dnrftp01.wi.gov/geodata/hydro_24k/.

Appendix A – Figures

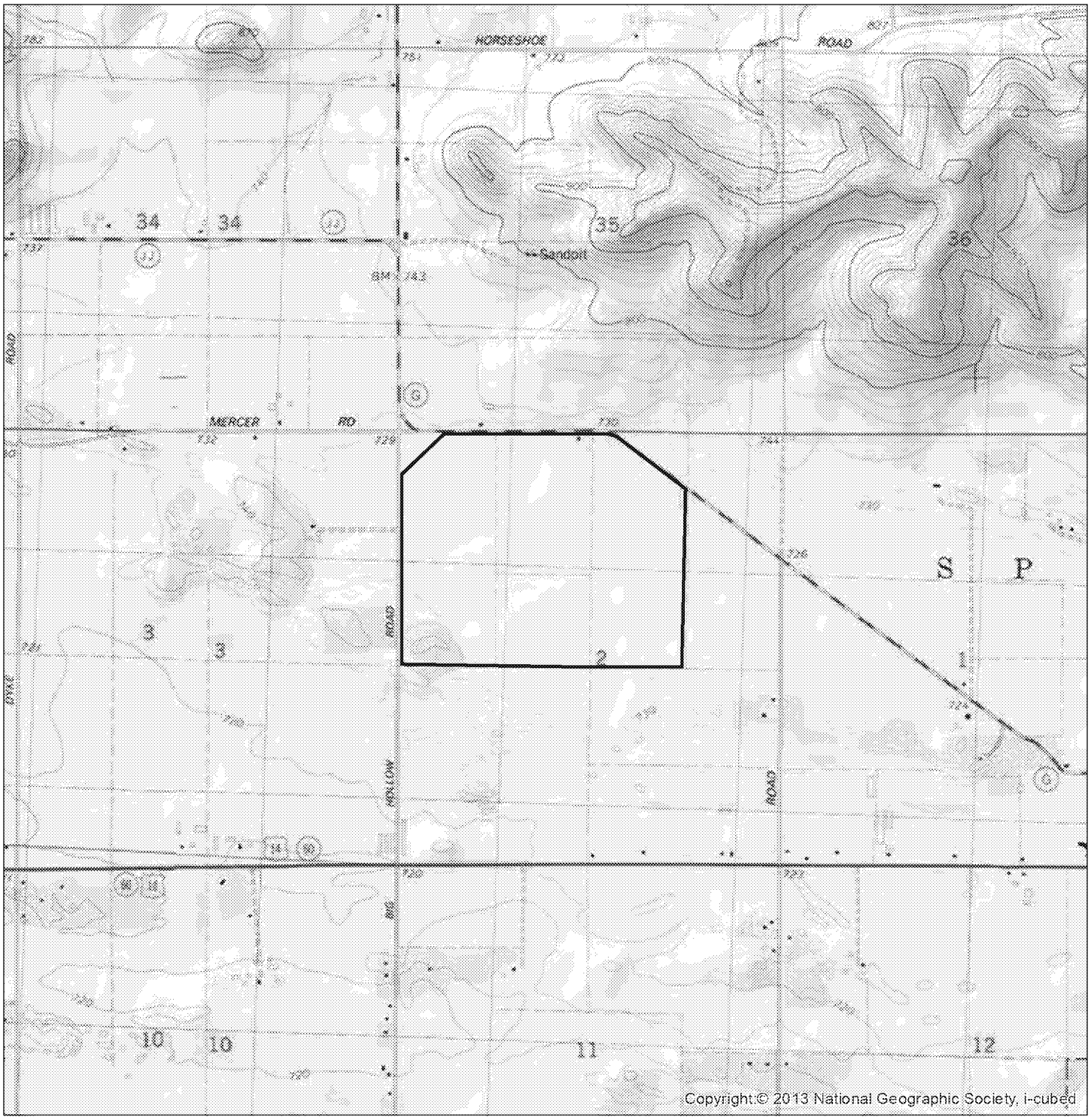
Figure 1. Project Location and Topography

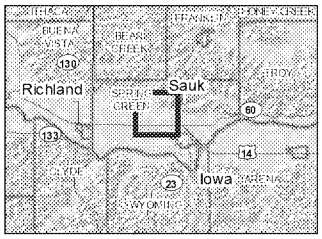
Figure 2. NRCS Soil Survey Data

Figure 3. Wisconsin Wetland Inventory

Figure 4. Field Collected Data

V:\1937\active\193703359\07_gis\mxd\Fig1_Topo_ClarkProperty.mxd Revised: 2015-01-05 By: idelprete





Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, ESRI
3. Background: USGS 7.5' Topographic Quadrangles

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
1

Title
Project Location and Topography

Client/Project
Clark Property
Wetland Survey

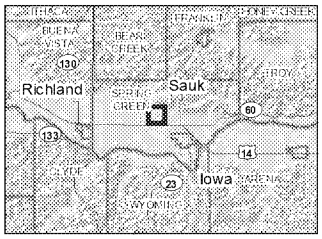
Project Location 193703359
T8N, R3E, S2 Prepared by JD on 2014-10-23
T. of Spring Green Technical Review by MP on 2014-10-23
Sauk Co., WI Independent Review by XXX on 2014-XX-XX

0 1,000 2,000 Feet
1:24,000 (at original document size of 8.5x11)

N

Stantec

Y:\1937\active\193703359\07_gis\mxds\Fig2_NRCS_ClarkProperty.mxd Revised: 2015-01-05 By: idelprete



Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR, NRCS
3. Orthophotography: 2013 NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Legend

- Approximate Project Boundary

NRCS Soil Survey Data

- Predominantly Hydric Soils
- Partially Hydric Soils
- Non-Hydric Soils

DNR 24k Hydrography*

- Perennial Stream
- Intermittent Stream
- Waterbody

*Not Visible in Data Frame

Figure No.
2

Title
NRCS Soil Survey Data

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

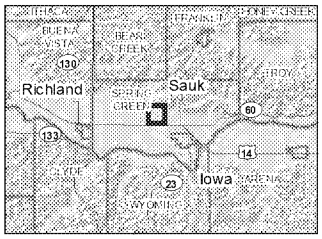
193703359
Prepared by JD on 2014-10-23
Technical Review by MP on 2014-10-23
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\1937\active\193703359\07_gis\mxds\fig3_WWI_ClarkProperty.mxd Revised: 2015-01-05 By: jdelprete



Legend

- Approximate Project Boundary
- WWI Wetland Class Areas*
  - Wetland
- DNR 24k Hydrography*
  - Perennial Stream
  - Intermittent Stream
  - Waterbody

*Not Visible in Data Frame

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR
3. Orthophotography: 2013 NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
3

Title
Wisconsin Wetland Inventory

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

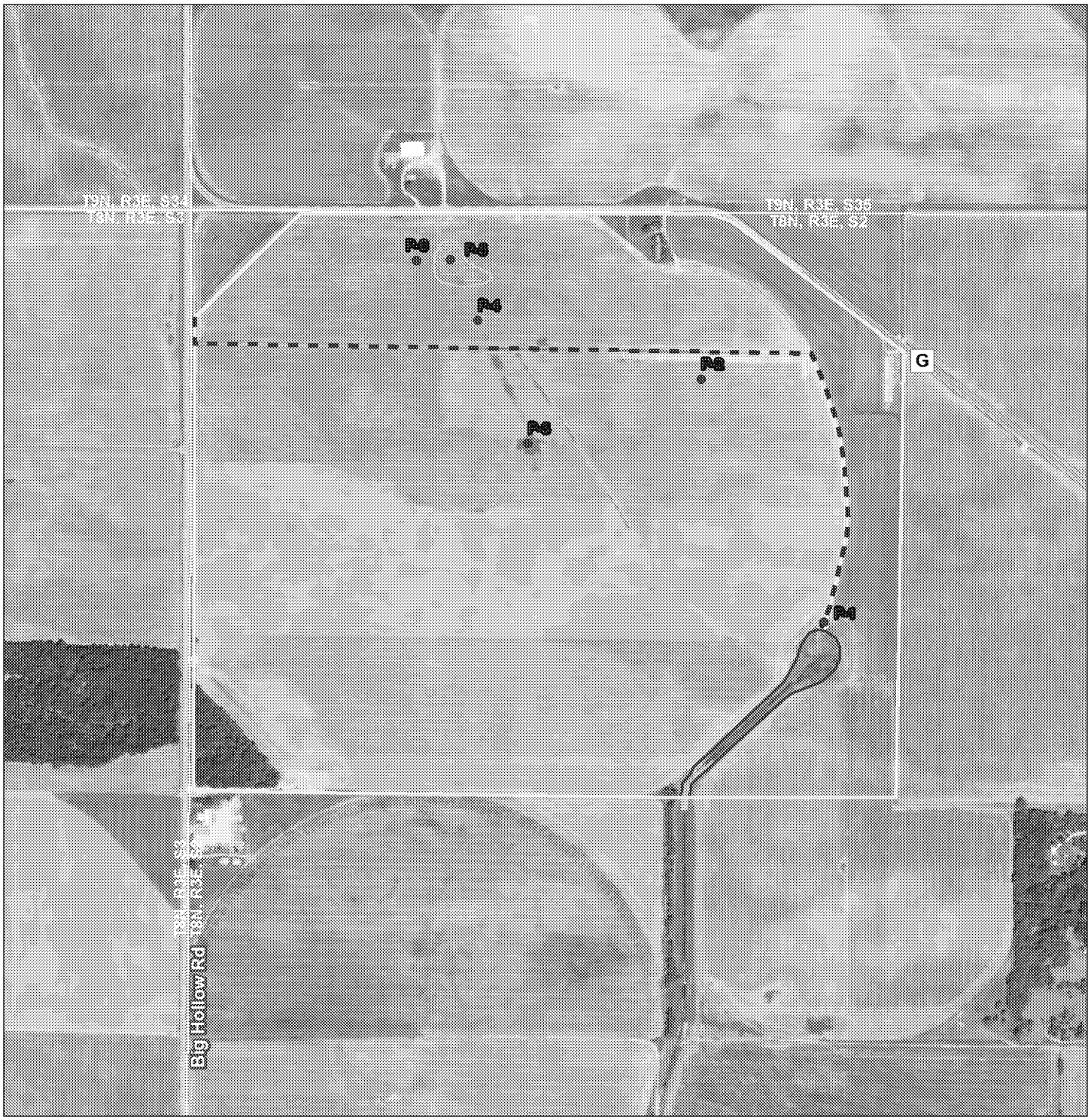
193703359
Prepared by JD on 2014-10-23
Technical Review by MP on 2014-10-23
Independent Review by XXX on 2014-XX-XX

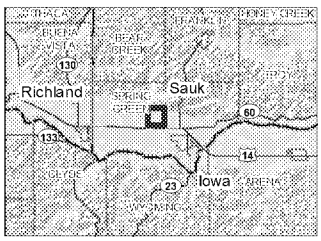
0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

Y:\1937\active\193703359\07_drawings\Fig4_FCD_ClarkProperty.mxd Revised: 2015-01-14 By: jdelorete





Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR
3. Orthophotography: 2013 NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Legend

- Approximate Project Boundary
- Sample Points
- Recently Excavated Ditch
- Regional Drainage Ditch
- Field Delineated Wetland

DNR 24k Hydrography*

- Perennial Stream
- Intermittent Stream
- Waterbody

*Not Visible in Data Frame

Figure No.
4

Title
Field Collected Data

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

193703359
Prepared by JD on 2014-12-11
Technical Review by SF on 2014-12-11
Independent Review by JK on 2015-01-08

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

Appendix B – Wetland Determination Data Forms

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Talf	Local Relief:	Linear
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑ , Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	---
Sample Point:	P-1
Community ID:	Ag Field
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ Yes ☑ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks:

SOILS

Map Unit Name: Watseka loamy sand Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	7	1	10YR	3/2	100	--	--	--	--	--	loamy sand
7	14	2	2.5Y	4/4	100	--	--	--	--	--	loamy sand
14	24	3	2.5Y	4/3	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: Clark Property | Wetland ID: --- | Sample Point **P-1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	0 (A)		0 (B)

Prevalence Index = B/A = *NA*

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Sample point located in active agricultural field planted to soybeans in 2014; crop had been harvested at time of field investigation. No hydrophytic weedy species observed.

Additional Remarks:

Sample point located in active agricultural field, harvested at the time of field investigations. Evidence of wetland hydrology, hydric soil indicators, and hydrophytic vegetation were not observed.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Talf	Local Relief:	Linear
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑ , Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	---
Sample Point:	P-2
Community ID:	Ag Field
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ Yes ☑ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Sample point within area subject to flooding during wet years based on FSA slide review.

SOILS

Map Unit Name: Watseka loamy sand Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	6	1	2.5Y	3/3	100	--	--	--	--	--	loamy sand
6	14	2	2.5Y	2/1	100	--	--	--	--	--	loamy sand
14	24	3	2.5Y	4/4	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Wetland ID:	---	Sample Point	P-2

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	0 (A)		0 (B)

Prevalence Index = B/A = *NA*

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Sample point located in active agricultural field planted to soybeans in 2014; crop had been harvested prior to time of field investigation, however field not plowed. Evidence of successful soybean crop observed by stubble remains. No hydrophytic weedy species observed.

Additional Remarks:

Sample point located in active agricultural field, harvested prior to the time of field investigations. Sample point within area subject to flooding during wet years. However, evidence of wetland hydrology, hydric soil indicators, and hydrophytic vegetation were not observed.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Depression	Local Relief:	Concave
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑ , Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	---
Sample Point:	P-3
Community ID:	Ag Field
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ Yes ☑ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Sample point within area subject to flooding during wet years based on FSA slide review.

SOILS

Map Unit Name: Watseka loamy sand Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	16	1	2.5Y	3/2	80	--	--	--	--	--	loam
--	--	--	2.5Y	4/3	20	--	--	--	--	--	sand
16	24	2	2.5Y	2/1	100	--	--	--	--	--	loam
24	30	3	2.5Y	3/1	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: Clark Property | Wetland ID: --- | Sample Point **P-3**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	*THLASPI ARVENSE*	20	Y	FACU
2.	*ECHINOCHLOA CRUS-GALLI*	10	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	30		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***50.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	10	x 2 =	20
FAC spp.	0	x 3 =	0
FACU spp.	20	x 4 =	80
UPL spp.	0	x 5 =	0
Total	30 (A)		100 (B)

Prevalence Index = B/A = ***3.333***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Sample point located in depression within active agricultural field planted to soybeans in 2014; crop had been harvested at time of field investigation, but weedy species present were identifiable.

Additional Remarks:

Sample point located in active agricultural field, harvested at the time of field investigations. Sample point within area subject to flooding during wet years. However, evidence of wetland hydrology, hydric soil indicators were not observed, and hydrophytic vegetation criteria were not met.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Depression	Local Relief:	Concave
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑ , Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	---
Sample Point:	P-4
Community ID:	Ag Field
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ Yes ☑ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Sample point within area subject to flooding during wet years based on FSA slide review.

SOILS

Map Unit Name: Watseka loamy sand Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	11	1	2.5Y	2/1	100	--	--	--	--	--	silt loam
11	24	2	10YR	4/2	100	--	--	--	--	--	loam
24	30	3	2.5Y	5/1	100	--	--	--	--	--	sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No redoximorphic features identified.

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: Clark Property | Wetland ID: --- | Sample Point **P-4**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	*ECHINOCHLOA CRUS-GALLI*	40	Y	FACW
2.	*THLASPI ARVENSE*	20	Y	FACU
3.	*Eleocharis erythropoda*	5	N	OBL
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	65		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***50.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	5	x 1 =	5
FACW spp.	40	x 2 =	80
FAC spp.	0	x 3 =	0
FACU spp.	20	x 4 =	80
UPL spp.	0	x 5 =	0
Total	65 (A)		165 (B)

Prevalence Index = B/A = ***2.538***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks: Sample point located in subtle depression within active agricultural field planted to soybeans in 2014; crop had been harvested at time of field investigation, but weedy species present were identifiable. Vegetation meets the Prevalence Index, but the lack of wetland hydrology and hydric soils indicators supports the upland determination.

Additional Remarks:

Sample point located in active agricultural field, harvested at the time of field investigations. Sample point within area subject to flooding during wet years. However, evidence of wetland hydrology, hydric soil indicators were not observed, and hydrophytic vegetation criteria marginally met.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Depression	Local Relief:	Concave
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☑ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	W-1
Sample Point:	P-5
Community ID:	Farmed Wetland
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ Yes ☐ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: Sample point within area subject to flooding during wet years based on FSA slide review.

SOILS

Map Unit Name: Watseka loamy sand — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	10	1	2.5Y	2/1	100	--	--	--	--	--	silt loam
10	16	2	10YR	4/1	95	2.5Y	4/6	5	C	M	sandy clay loam
16	28	3	2.5Y	5/2	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☑ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: Clark Property | Wetland ID: W-1 | Sample Point **P-5**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	*ECHINOCHLOA CRUS-GALLI*	80	Y	FACW
2.	*Eleocharis erythropoda*	5	N	OBL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	85		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	5	x 1 =	5
FACW spp.	80	x 2 =	160
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	85 (A)		165 (B)

Prevalence Index = B/A = ***1.941***

Hydrophytic Vegetation Indicators:

- ☑ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks: Sample point located in depression within active agricultural field planted to soybeans in 2014; crop had been harvested at time of field investigation, but weedy species present were identifiable.

Additional Remarks:

Sample point located in active agricultural field, harvested at the time of field investigations, but weedy hydrophytic species were present and identifiable. Sample point within area subject to flooding during wet years.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site:	Clark Property	Stantec Project #:	193703359
Applicant:	Dale Clark		
Investigator #1:	J. Kraemer	Investigator #2:	---
Soil Unit:	Watseka loamy sand	NWI/WWI Classification:	---
Landform:	Talf	Local Relief:	Linear
Slope (%):	0-2	Latitude: N/A	Longitude: N/A Datum: N/A

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

Are Vegetation ☑ , Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐No

Date:	11/07/14
County:	Sauk
State:	Wisconsin
Wetland ID:	W-1
Sample Point:	P-6
Community ID:	Ag Field
Section:	2
Township:	8N
Range:	3 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ Yes ☑ No

Remarks: Based on a WETS analysis, conditions were wetter than normal. Sample point located in active agricultural field.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Sample point within area subject to flooding during wet years based on FSA slide review.

SOILS

Map Unit Name: Watseka loamy sand Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquic Hapludolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox %	Type	Location	Texture (e.g. clay, sand, loam)
0	16	1	10YR	2/1	100	--	--	--	--	--	loam
16	18	2	10YR	2/1	99	10YR	4/4	1	C	M	silt loam
18	24	3	10YR	4/1	100	--	--	--	--	--	silty clay loam
24	28	4	10YR	4/1	99	10YR	4/4	1	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: Marginal hydric indicators present, however lack of redoximorphic features and depleted matrix directly below dark surface precludes meeting criteria of A12 - Thick Dark Surface.

Stantec

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: Clark Property | Wetland ID: W-1 | Sample Point **P-6**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 5 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	0 (A)		0 (B)

Prevalence Index = B/A = *NA*

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Sample point located in depression within active agricultural field planted to soybeans in 2014; crop had been harvested at time of field investigation. No weedy species were observed.

Additional Remarks:

Sample point located in active agricultural field, harvested at the time of field investigations. Sample point within area subject to flooding during wet years; however, the lack of wetland hydrology and hydric soil indicators observed and the lack of hydrophytic vegetation support the upland determination.

Appendix C – Site Photographs

Photo 1. View from sample point P-1, view facing north

Photo 2. View from sample point P-2, view facing west

Photo 3. View from sample point P-2; view facing northwest

Photo 4. View from sample point P-3; view facing northwest

Photo 5. View from sample point P-4; view facing southeast

Photo 6. View towards sample point P-5 within wetland W-1; view facing southeast

Photo 7. View from sample point P-6; view facing west

Appendix D – WETS Analysis

WETS Analysis Worksheet

Project Name: Clark Wetland Delineation
Project Number: 193703359
Period of interest: August-October, 2014
Station: Lone Rock Tri-County Airport (WI921)
County: Sauk County, WI

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	October	1.37	2.08	2.49
2nd month prior:	September	1.83	3.15	3.83
3rd month prior:	August	2.80	4.01	4.77
		Sum =	**9.24**	

Site determination

	Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
	2.51	Wet	3	3	9
	2.37	Normal	2	2	4
	3.09	Normal	2	1	2
Sum =	**7.97**			Sum*** =	**15**

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

Determination: **X** Wet
_____ Dry
_____ Normal

**Condition value:

Dry =	1
Normal =	2
Wet =	3

***If sum is:

6 to 9	then period has been drier than normal
10 to 14	then period has been normal
15 to 18	then period has been wetter than normal

Precipitation data source: NRCS Field Office Technical Guides - Agricultural Appilied Climate Information System WETS table

Reference: 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.

Appendix E - FSA Aerial Slide Analysis

Farm Service Agency Aerial Color Slide Review[1]

Clark Property Wetland Delination - Spring Green, WI

Project Location: Section 02, Township 08N, Range 03E, Sauk County

Year	Monthly Rainfall in Inches [2]			Relative Wetness	Cropped[3]?	Wetness Signature[4,5]?	Interpretation
	April	May	June				
1985	2.08	3.34	1.63	Dry	CR	Y-; 6d, 8	Soils appear darker in northern half of field extending to the southeast, with darker areas that indicate saturated soils
1986	2.18	2.60	1.47	Dry	CR	Y-; 6d, 8	Soils appear darker in northern half of field extending to the southeast, with darker areas that indicate saturated soils
1987	0.00	5.47	2.09	Normal	CR	N	No wetness signatures observed
1988	2.42	0.93	0.63	Dry	CR	Y-; 6b, 6d, 8	Soils appear darker in northern half of field extending southeast with more crop growth evidenced by darker green coloration
1989	1.51	2.51	2.56	Dry	CR	N	No wetness signatures observed
1990	2.98	0.00	7.70	Normal	CR	Y-; 6d, 8	Soils appear darker in northern half of field extending to the southeast, with darker areas that indicate saturated soils
1992	3.78	2.06	1.25	Normal	CR	Y-; 6d, 8	Soils appear darker in northern half of field extending to the southeast, with darker areas that indicate saturated soils
1993	6.05	5.27	8.04	Wet	CR	Y+; 1, 3, 4, 6b, 6c, 6d, 6e, 8	Large area of ponded water extending into adjacent field; stressed/drowned crop along periphery of ponded area
1994	3.16	1.92	5.87	Wet	NC	Y-; 6d, 8	Soils appear darker/saturated in northern half of field with similar signature extending east into adjacent field - not cropped due to wetness; southwestern portion of field cropped - irrigation line and row crop visible
1996	2.61	3.23	6.80	Wet	CR	Y-; 6d, 8	Soils appear darker in northern half of field with smaller darker areas indicating saturated soils
1997	0.95	3.30	3.88	Normal	CR	N	No wetness signatures observed
1998	4.10	4.63	10.85	Wet	CR	Y+; 3, 4, 6b, 6c, 6d, 6e, 8	Areas of bare soil/drowned crop, saturated soils, stressed crop predominantly in northern half of field and extending southeast
1999	11.82	4.18	5.14	Wet	CR	Y+; 3, 4, 6b, 6c, 6d, 6e, 8	Areas of bare soil/drowned crop, saturated soils/ponded water, stressed crop predominantly in northern half of field and extending southeast
2000	1.97	7.96	10.61	Wet	NC	Y+; 3, 4, 6a, 6d, 6e, 8	Soils appear darker/saturated in northern half of field, extending to southeast - not cropped due to wetness, with similar signature extending east into adjacent field; southwestern portion of field cropped normally
2001	3.28	5.10	3.73	Normal	CR	Y-; 6d, 8	Soils appear darker in northern half of field extending to the southeast, with darker areas that indicate saturated soils
2002	3.68	5.69	5.48	Wet	CR	Y+, 3, 4, 6b, 6d, 8	Area of bare soil/drowned crop with crop stress along periphery within northern half of field, extends to the southeast to adjacent field
2004	1.67	10.34	5.34	Wet	CR	Y+; 3, 4, 6d, 8	Areas of bare soil/drowned crop, saturated soils, stressed crop predominantly in northern half of field and extending southeast
2005	0.70	2.56	4.05	Normal	CR	Y-; 6d, 8	Area of mottled darker soils in northern half of field extending southeast
2006	5.94	4.18	4.09	Wet	CR	N	No wetness signatures observed
2008	2.95	3.14	8.53	Wet	CR	Y+; 1, 3, 4, 6d, 6e, 8	Large area of ponded water in northern half of field extending southeast into adjacent field; stressed/drowned crop along periphery of ponded area
2010	5.80	3.34	10.09	Wet	CR	Y+; 4, 6b, 6c, 6d, 8	Soils appear darker/saturated in northern half of field, extending to southeast - not cropped due to wetness; southwestern portion of field cropped normally
2013	4.58	5.42	9.60	Wet	CR	Y-; 5, 6b, 6d, 7b, 8	New ditch apparent running across site from W-E and diagonally to SE corner; difference is crop color in northern v. southern field portions, area of dark, saturated soils to the west of diagonal ditch
30% chance less than	2.31	1.89	2.63				
30 Year Average	3.08	2.80	3.80				
30% chance more than	3.60	3.35	4.52				

Does slide/aerial photo analysis indicate the site is a wetland? Yes

3 out of 4 of the most recent "normal" precipitation years had wetland signatures present.

DRY
NORMAL
WET

[1] Assumption is made that FSA slides are taken in July; as a result, precipitation analysis focuses on three months prior to July.

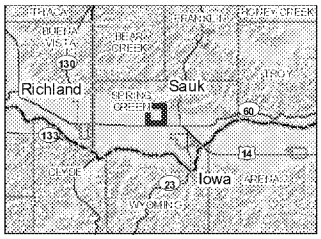
[2] Yrs 1985-2000 precipitation data from NWS weather station #WI7158 - Richland Center, WI; Yrs 2001-2013 precipitation data from NWS weather station #WI921 - Lone Rock Tri-County Airport, WI

[3] CR = cropped (row crop or tilled), NC = not cropped (hay, pasture, fallow, etc.)

[4] Y = wetness signature present (+ = strong, - = weak); N = No wetness signature

[5] Interpretation Codes - Feature: 1=water, 2=mud flat, 3=bare spot, 4=drowned crop, 5=planted late; Color: 6a=dark green, 6b=light green, 6c=yellow, 6d=brown, 6e=black; Manipulation: 7a=ditched, 7b=tiled, 7c=filled, 7d=tree/brush removal, 8=plowed/tilled; Other: write explanation as needed

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1985 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

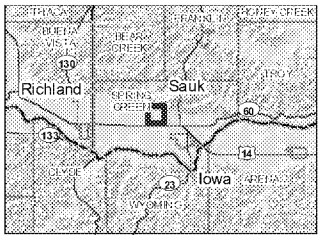
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1986 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

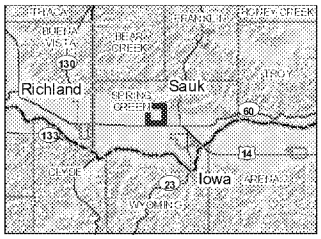
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1987 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

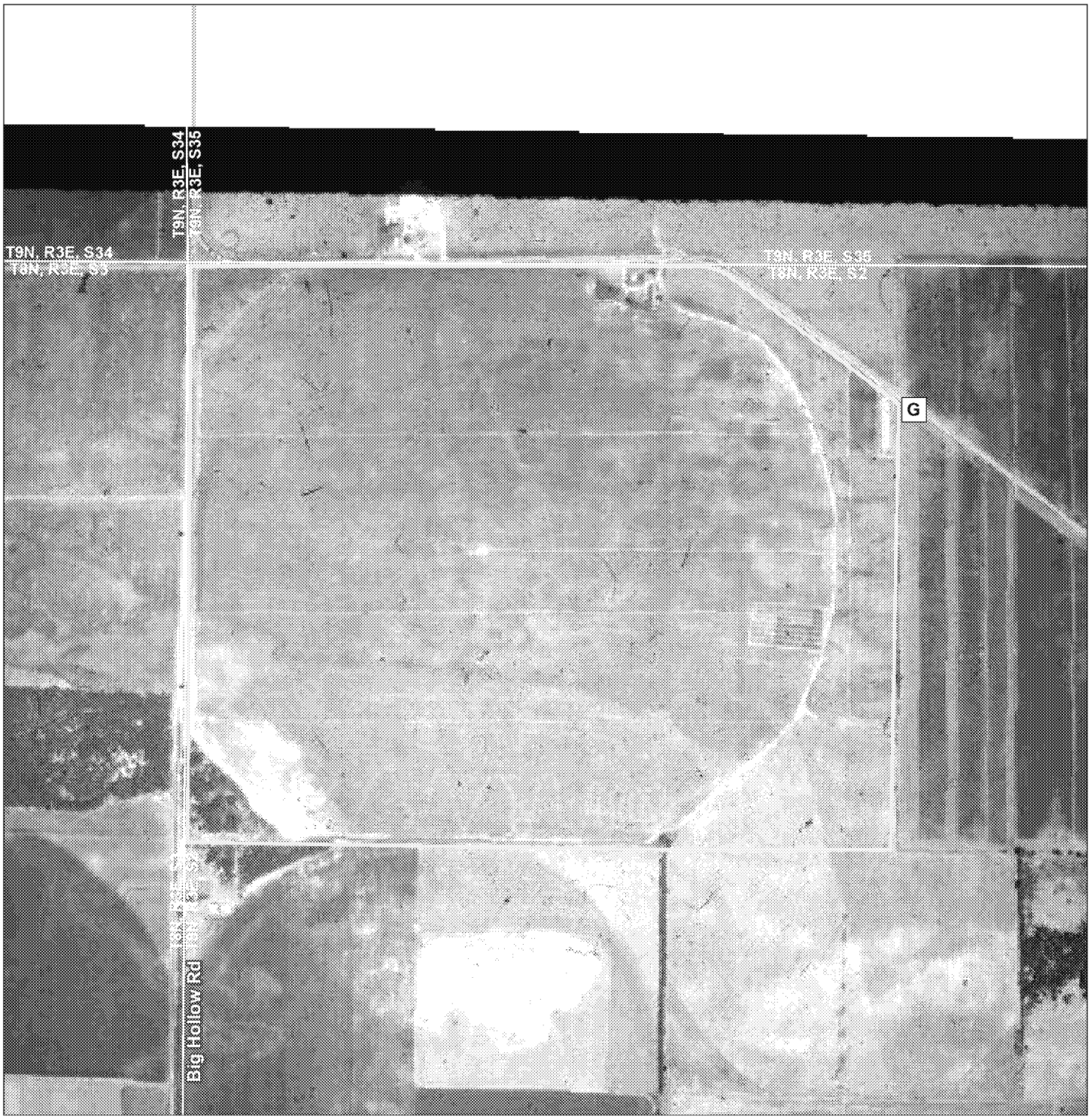
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

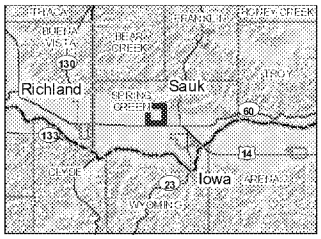
0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau





Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1988 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T9N, R3E, S2
T. of Spring Green
Sauk Co., WI

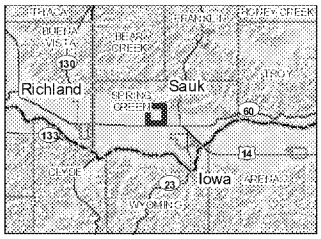
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1989 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T9N, R3E, S2
T. of Spring Green
Sauk Co., WI

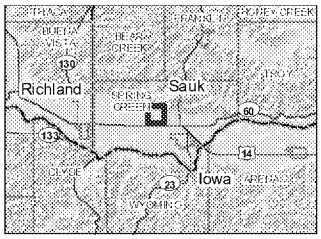
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1990 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

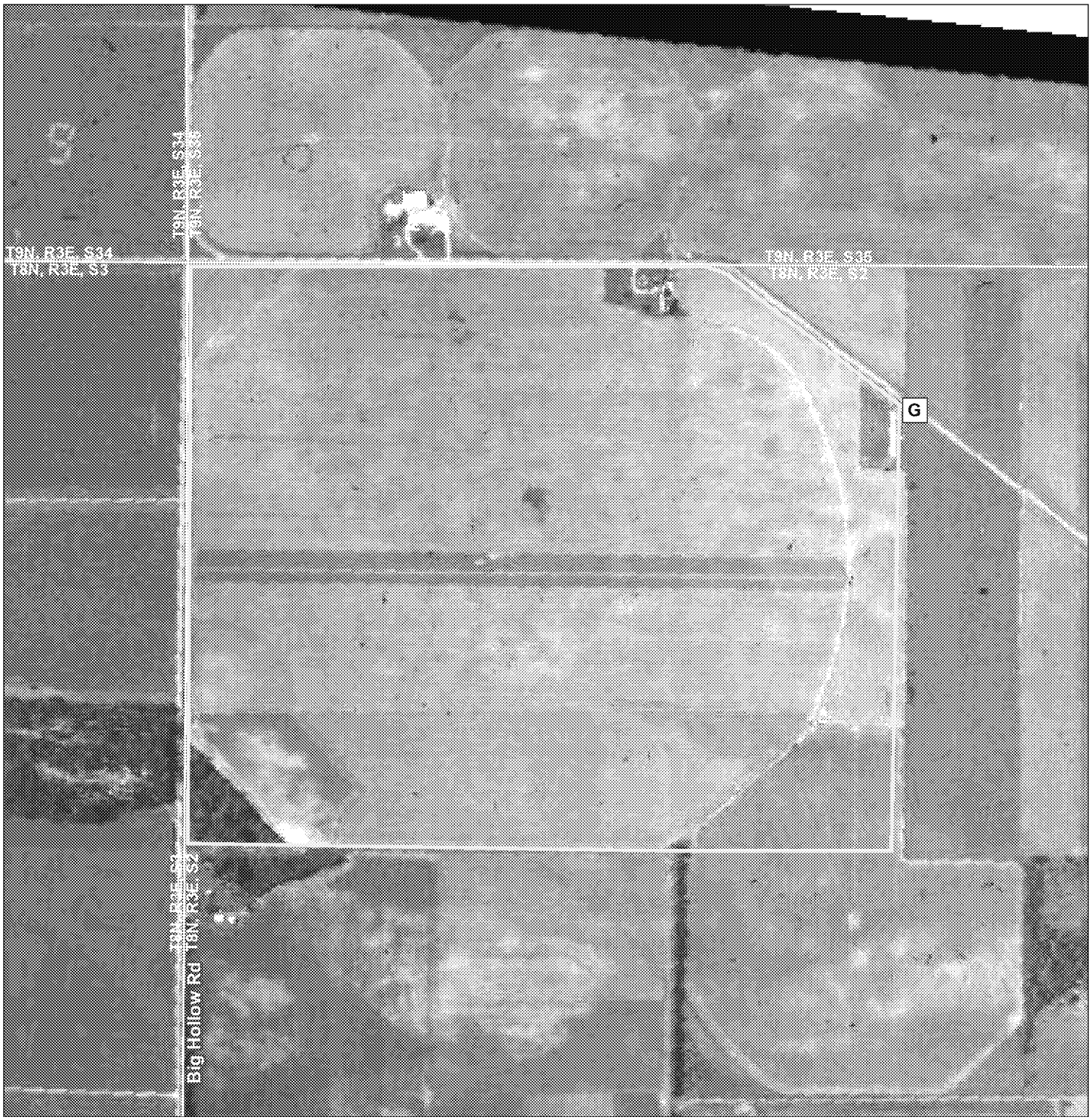
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

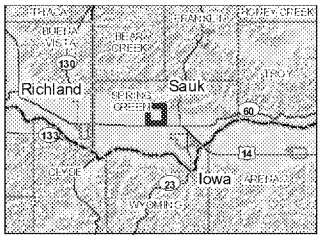
0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau





Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1991 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

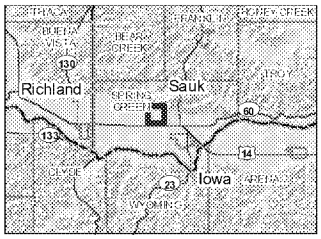
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1992 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T9N, R3E, S2
T. of Spring Green
Sauk Co., WI

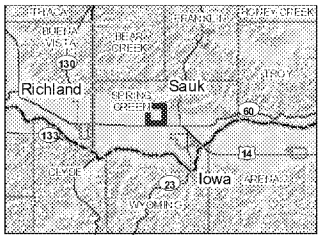
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1993 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

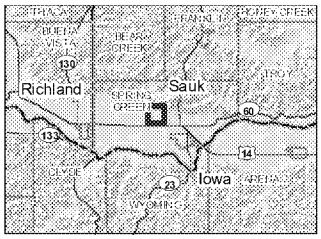
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1996 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

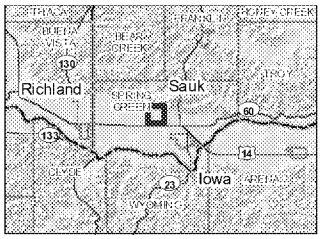
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\First_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1997 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

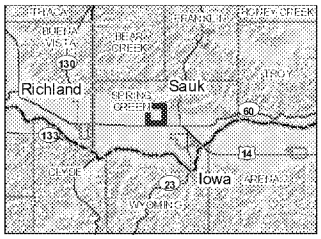
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1998 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

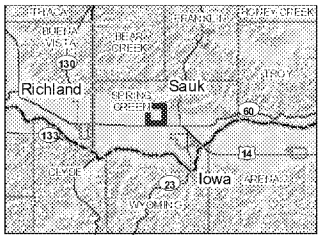
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
1999 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

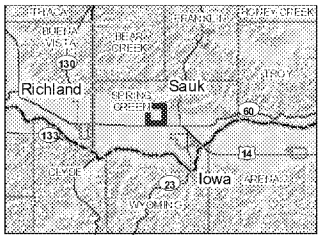
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography 2000 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T3N, R3E, S2
T. of Spring Green
Sauk Co., WI

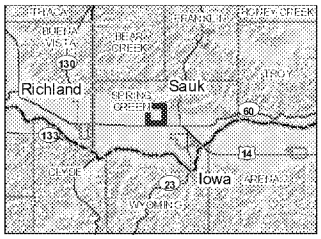
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Fig_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography 2001 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

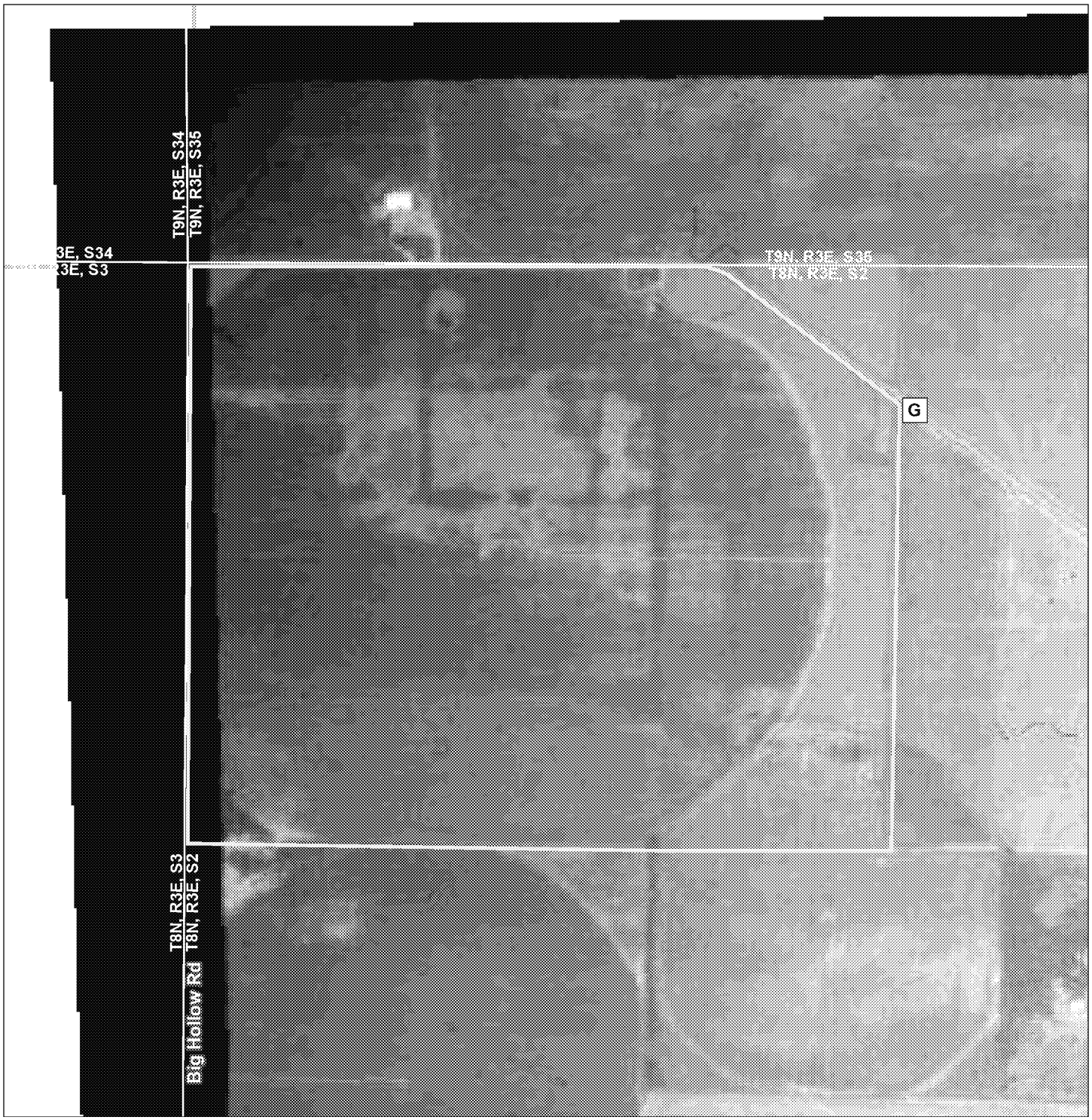
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

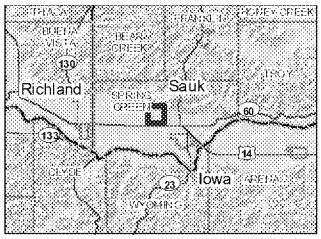
0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau





Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: FSA

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography 2002 FSA

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

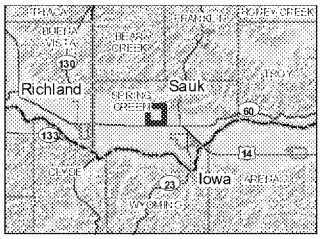
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_EIA_ClaitProperty.mxd Revised: 2014-11-04 By: kadlau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
2004 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

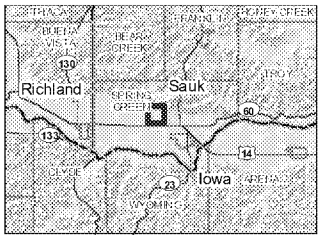
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\1937\active\193703359\07_gis\mxds\FigX_FSA_ClarkProperty.mxd Revised: 2014-11-04 By: ksoltau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography 2005 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

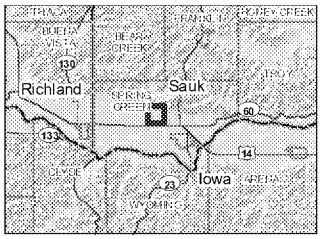
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FEA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
2006 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T9N, R3E, S2
T. of Spring Green
Sauk Co., WI

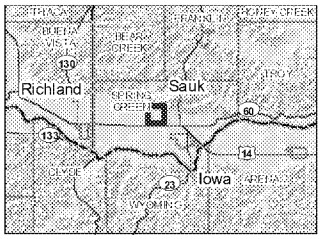
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FEA_ClaitProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
2008 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

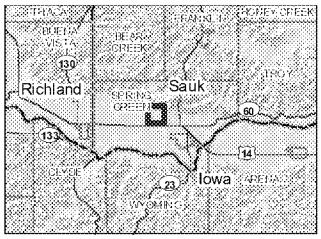
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\First_FEA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
2010 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

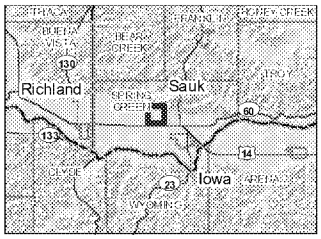
193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

V:\193\active\193703359\07_gis\mxds\Final_FEA_ClarkProperty.mxd Revised: 2014-11-04 By: ksellau



Legend

Approximate Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, and USDA
3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
Historic Orthophotography
2013 NAIP

Client/Project
Clark Property
Wetland Survey

Project Location
T8N, R3E, S2
T. of Spring Green
Sauk Co., WI

193703359
Prepared by KAS on 2014-11-03
Technical Review by XXX on 2014-XX-XX
Independent Review by XXX on 2014-XX-XX

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)

N

Stantec

Resume

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Stantec

Mr. Kraemer specializes in environmental regulatory support and policy. He has substantial experience working with the local, state, and federal regulatory agencies on complex, often controversial projects. Mr. Kraemer has substantial experience assisting clients at the project planning level to identify and plan for environmental regulatory implications and risk across many industry sectors with particular expertise in the utility and private development industries. Mr. Kraemer has a thorough understanding of the technical and regulatory aspects of environmental projects. His experience includes: Project critical issues analysis/permitting feasibly assessments; Wetland and other natural resource investigations, mitigation planning, and permitting; Clean Water Act and Endangered Species Act studies and consultation; and National Environmental Policy Act documentation (EA/EIS).

In addition to environmental regulatory expertise, Mr. Kraemer has a strong technical background in wetland ecology and botany and manages Stantec's Midwest ecological restoration implementation group. This group is responsible for building, managing, and monitoring natural area restoration projects such as wetland mitigation. Mr. Kraemer is an assured wetland professional through the Wisconsin Department of Natural Resources Wetland Delineation Professional Assurance Initiative and has extensive environmental consulting experience as both a field ecologist and project manager.

EDUCATION

Wetland Training Institute, Training, Wetland Soils and Hydrology, 2003

Vegetation of Wisconsin Workshop, Training, UW-Milwaukee, 2000

Wetland Delineation Training Workshop, Continuing Education and Extension, UW-La Crosse, 2001

Identification of Sedges Workshop, Training, UW-Milwaukee, 2001

Environmental Corridor Delineation Workshop, Training, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004

M.S. – Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin, Milwaukee, Wisconsin, 2003

B.S. – Biological Sciences (Emphasis in Aquatic Biology), University of Wisconsin, La Crosse, Wisconsin, 1999

Assured Wetland Delineator, Milwaukee, Wisconsin, 2008

REGISTRATIONS

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources

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

MEMBERSHIPS

Member, Society of Wetland Scientists

Member, Wisconsin Wetlands Association

PROJECT EXPERIENCE

Commercial / Retail Development

Commercial Development, Windsor, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the commercial development project.

Fitchburg Technology Campus, Fitchburg, Wisconsin

Completed woodland assessment, tree survey, and woodland restoration and management plan in support of retail and commercial development project.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.L.T.

Senior Scientist / Project Manager

Conventional Power

Edgewater Generation Facility, Sheboygan, Wisconsin

Managed and coordinated environmental regulatory process for expansion of existing fly-ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Waukegan Power Station, Lake County, Illinois

Provided threatened and endangered species consultation and wetland surveying along Lake Michigan shorelines for permitting a dredging activity and expansion of the facility.

Nelson Dewey Power Generation Facility Expansion Project, Caseville, Wisconsin

Completed comprehensive field evaluations of wetlands in preparation of NEPA documentation for expansion of the facility.

Waukegan Power Generation Facility Expansion Project, Lake County, Illinois

Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the facility.

Invasive Species Survey, Prairie Du Sac, Wisconsin

Conducted a purple loosestrife survey on Lake Wisconsin shorelines and wetlands in order to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Ecosystem Restoration

Campus Facility Native Landscape Management, Milwaukee County, Wisconsin

Managed and coordinated development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Following completion and approval of the plan, continued to manage and coordinate the implementation of native landscape installation and long-term management.

Threatened Plant Species Consultation, Port Wing, Wisconsin

Completed comprehensive study of a threatened plant species population (Petasites sagittatus) in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring. This project resulted in one of the first documented, successful relocation of this species after five years of monitoring.

Neptune Wetland Mitigation Site, Richland County, Wisconsin

Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation bank site.

Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, Wisconsin

Developed and conducted wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands.

Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre mitigation site.

Jug Creek Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 10-acre mitigation site.

Wetland Mitigation Bank Monitoring and Remediation, Oakdale, Wisconsin

Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Samuelson Fen Restoration, Portage, Indiana

Developed restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.D.T.

Senior Scientist / Project Manager

Healthcare

Badger Prairie Health Care Center Expansion Project, Verona, Wisconsin

Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

Oil and Gas Pipelines

New Gas Pipeline Project, Wausau, Wisconsin

Completed environmental surveys along proposed gas pipeline corridor including environmental assessments, threatened and endangered plant species survey, and identification of wetland and upland community types.

Southern Access Expansion Project, Wisconsin

Crude Petroleum Pipeline Project. Completed wetland delineations and habitat assessments along a 343 mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

Power Transmission & Distribution

ComEd Prairie Programs, Various Locations, Illinois

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbicidding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Prairie Program

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbicidding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Electric Transmission Line Projects

Managed support for environmental and GIS services to gain regulatory approvals for new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.
LaSalle-Ottawa, LaSalle County, IL;
Wood River Refinery, Madison County, IL;
Rockwood-Big River, Jefferson County, MO;
Saddle Creek 73, Franklin County, MO.
Havana Rebuild, Mason County, IL

345 kV Transmission Line Project, Wisconsin

Arrowhead to Weston. Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208 mile proposed new transmission line.

Endangered Species Support, Wisconsin

Conducted Karner Blue butterfly surveys (federally endangered) along transmission line right-of-ways.

Residential Development

Country View Estates, DeForest, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

** denotes projects completed with other firms*

Northeast Neighborhood Plan, Fitchburg, Wisconsin
Developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Wesenberg Development, New Glarus, Wisconsin
Conducted threatened and endangered plant species surveys, wetland delineations, and floristic quality assessment in support of the residential development.

Westwynde Development, Sun Prairie, Wisconsin
Completed wetland delineation/evaluations, wetland permitting, wetland mitigation planning, and upland prairie restoration planning in support of the residential development.

Westshore Development Restoration Design, Oconomowoc, Wisconsin
Designed a 30-acre upland habitat enhancement and wetland restoration plan in support of gaining regulatory approvals for residential development.

Warehouse / Light Industrial

Manufacturing Facility Expansion Project, Arcadia, Wisconsin
Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; continue to monitor and coordinate implementation of mitigation plan.

Industrial Facility Expansion Project, Hustisford, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Trucking Facility Expansion, Franklin, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.L.T.

Senior Scientist / Project Manager

PUBLICATIONS

Presentation. Lake Koshkonong Wetlands: Diversity, Floristic Quality, and Community Mapping. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Management of the Eastern Prairie Fringed Orchid in the Lake Koshkonong Wetlands. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Lake Koshkonong Water Level Controversy: A Balance between Recreation and Wetland Protection. *WWA Annual Science Forum*, 2005.

Presentation. Lake Koshkonong Water Levels and Growth Rate of Trees in Bordering Floodplain Forests.. *Lake Koshkonong Wetland Association*, 2005.

Presentation. Floodplain forest hydrology and management implications: Lake Koshkonong as a case study. *Wisconsin Wetlands Association Annual Science Forum*, 2004.

Kraemer, J. Using wetland plants as indicators of fine scale variation in hydrology: the plant community-environment relationship in sedge meadows. *Master's Thesis defense*, 2003.

Presentation. Effects of invasive plant species on natural communities. *UW-Milwaukee, Biology Department*, 2001.

ATTACHMENT 3

MONITORING WELL BORING LOGS

CK ENTERPRISES

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-1

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
1	-1.0	Loamy sand						
2	-2.0		1					
3	-3.0	Trending from loamy sand to fine/medium sand						
4	-4.0							
5	-5.0	Fine sand						
6	-6.0	V	2					
7	-7.0	Saturated with iron staining at 6.5'						
8	-8.0							
9	-9.0							
10	-10.0	Wet fine to medium sand. No staining observed.	3					
11	-11.0							
12	-12.0	Wet fine to medium sand. No staining observed.						
13	-13.0							
14	-14.0		4					
15	-15.0							
16	-16.0							

End of Boring: 16'

Notes:
Set 1" PVC well screen 6-16 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level $_{\text{During Drilling}}$:	6.5 ± ft (El. -6.5±)	V
Water Level $_{\text{Upon Completion}}$:	± ft (El. 0±)	V
Caved at $_{\text{Upon Completion}}$:	± ft (El. 0±)	
Delay Time:	hr(s)	
Water Level $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	V
Caved at $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	

Additional Comments:

Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B- 2

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
1	-1.0	Dark sandy loam						
2	-2.0		1					
		Fine to medium silt loam						
3	-3.0							
		Fine to medium sand						
4	-4.0							
5	**-5.0**	Light brown fine to medium sand						
6	-6.0 V		2					
7	-7.0	Saturated light brown fine to medium sand						
8	-8.0							
9	-9.0							
10	**-10.0**	Medium light brown fine to medium sand	3					
11	-11.0							
12	-12.0							
13	-13.0							
14	-14.0	Medium light brown fine to medium sand	4					
15	**-15.0**							
16	-16.0							

End of Boring: 16'

Notes:
Set 1" PVC well screen 6-16 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level $_{\text{During Drilling}}$:	6 ± ft (El. -6±)	V
Water Level $_{\text{Upon Completion}}$:	± ft (El. 0±)	V
Caved at $_{\text{Upon Completion}}$:	7 ± ft (El. -7±)	
Delay Time:	hr(s)	
Water Level $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	V
Caved at $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	

Additional Comments:

Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-3

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
1	-1.0	Black soft silty loam to 2'						
2	-2.0		1					
3	-3.0	Tan sand						
	V	Saturated tan sand						
4	-4.0							
5	-5.0							
6	-6.0	Wet tan medium sand	2					
7	-7.0							
8	-8.0							
9	-9.0							
10	-10.0	Wet tan medium sand	3					
11	-11.0							
12	-12.0							
13	-13.0							
14	-14.0	Wet tan medium sand	4					
15	-15.0							
16	-16.0							

End of Boring: 16'

Notes:
Set 1" PVC well screen 6-16 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level During Drilling:	3.5 ± ft (El. -3.5±)	V
Water Level Upon Completion:	± ft (El. 0±)	V
Caved at Upon Completion:	± ft (El. 0±)	
Delay Time:	hr(s)	
Water Level delayed:	± ft (El. 0±) after hr(s)	V
Caved at delayed:	± ft (El. 0±) after hr(s)	

Additional Comments:

Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-4

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
1	-1.0							
2	-2.0	Tan fine to medium sand	1					
3	-3.0							
4	-4.0							
5	-5.0	Tan fine to medium sand						
6	-6.0		2					
7	-7.0	Buried A-horizon						
8	-8.0							
9	-9.0	Silty clayey sand, B-horizon						
10	-10.0		3					
11	-11.0	Dry, light tan sand						
12	-12.0							
13	-13.0							
14	-14.0	Dry, light tan sand	4					
15	-15.0							
16	-16.0							
17	-17.0							
18	-18.0	Saturated light tan sand	5					
19	-19.0							
20	-20.0							

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-4

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
20	-20.0							
21	-21.0							
22	-22.0	Saturated light tan sand						
23	-23.0							
24	-24.0							

End of Boring: 24'

Notes:
Set 1" PVC well screen 14-24 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level $_{\text{During Drilling}}$:	3.5 ± ft (El. -3.5±)	V
Water Level $_{\text{Upon Completion}}$:	± ft (El. 0±)	V
Caved at $_{\text{Upon Completion}}$:	± ft (El. 0±)	
Delay Time:	hr(s)	
Water Level $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	V
Caved at $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	

Additional Comments:
Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-5

Project: Dale Clark Site Wetland Mitigation bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
		Sandy loam topsoil						
1	-1.0							
2	-2.0	Light brown fine to medium sand	1					
3	-3.0							
4	-4.0							
5	-5.0	Fine sand						
6	-6.0		2					
7	-7.0	Light brown to yellowish brownmedium sand						
8	-8.0							
9	-9.0							
10	-10.0	Light brown to yellowish brown medium sand	3					
11	-11.0	V						
12	-12.0	Saturated light brown to yellowish brown medium sand						
13	-13.0							
14	-14.0	Light brown medium to coarse sand	4					
15	-15.0							
16	-16.0							
17	-17.0							
18	-18.0	Light brown medium to coarse sand	5					
19	-19.0							
20	-20.0							

End of Boring: 20'

Notes:
Set 1" PVC well screen 14-24 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level $_{\text{During Drilling}}$:	3.5 ± ft (El. -3.5±)	V
Water Level $_{\text{Upon Completion}}$:	± ft (El. 0±)	V
Caved at $_{\text{Upon Completion}}$:	± ft (El. 0±)	
Delay Time:	hr(s)	
Water Level $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	V
Caved at $_{\text{delayed}}$:	± ft (El. 0±) after hr(s)	

Additional Comments:

Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

Montgomery Associates
Resource Solutions, LLC

SOIL BORING LOG: B-6

Project: Dale Clark Site Wetland Mitigation Bank
Project No.: 1711
Location: County Road G
Spring Green, WI

Drill Date: December 21, 2015
Drilled by: Badger State Drilling
Logged by: RJM
Sampling Method: Geoprobe 1" cores

Depth Below Surface (ft)		VISUAL SOIL CLASSIFICATION Ground Surface Elevation: 0.0	Sample No.	Feet Driven	Feet Recovered	Sample Top	Sample Bottom	Remarks
		Tilled topsoil w/ organic inclusions						
1	-1.0	sandy loam						
2	-2.0	Grey to brown fine to medium sand	1					
3	-3.0							
4	-4.0							
5	-5.0	Tan to light brown fine to medium sand						
6	-6.0		2					
7	-7.0	Saturated tan to light brown fine to medium sand						
8	-8.0							
9	-9.0	Light brown fine to medium sand						
10	-10.0		3					
11	-11.0	Silt Brown medium sand w/more coarse dark-grained mineral constituents than upper layers						
12	-12.0							
13	-13.0	Brown medium sand w/more coarse dark-grained mineral constituents than upper layers	4					
14	-14.0							
15	-15.0							
16	-16.0							

End of Boring: 16'

Notes:
Set 1" PVC well screen 6-16 ft, granular bentonite seal at surface, 3" steel casing w/ locking top

Water Level / Caving Observations:

Water Level During Drilling:	-6.5 ± ft (El. 6.5±)	V
Water Level Upon Completion:	± ft (El. 0±)	V
Caved at Upon Completion:	± ft (El. 0±)	
Delay Time:	hr(s)	
Water Level delayed:	± ft (El. 0±) after hr(s)	V
Caved at delayed:	± ft (El. 0±) after hr(s)	

Additional Comments:

Boring Location Offset:
Reason for Offset:

*Lines of demarcation represent **approximate** boundaries between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual.*

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

ATTACHMENT 4

MONITORING WELL HYDROGRAPHS

(FIGURES 8 – 9)

CK ENTERPRISES

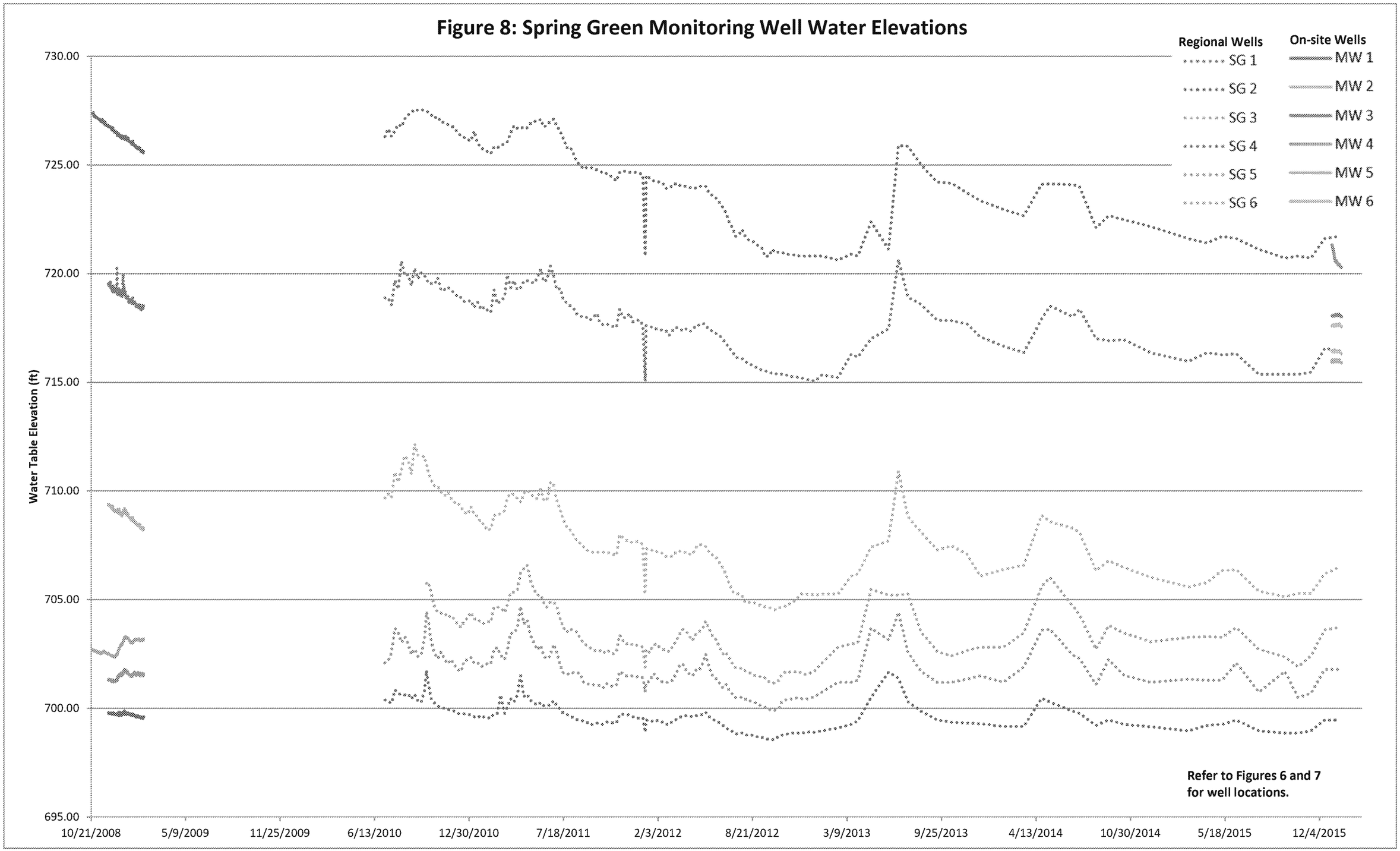
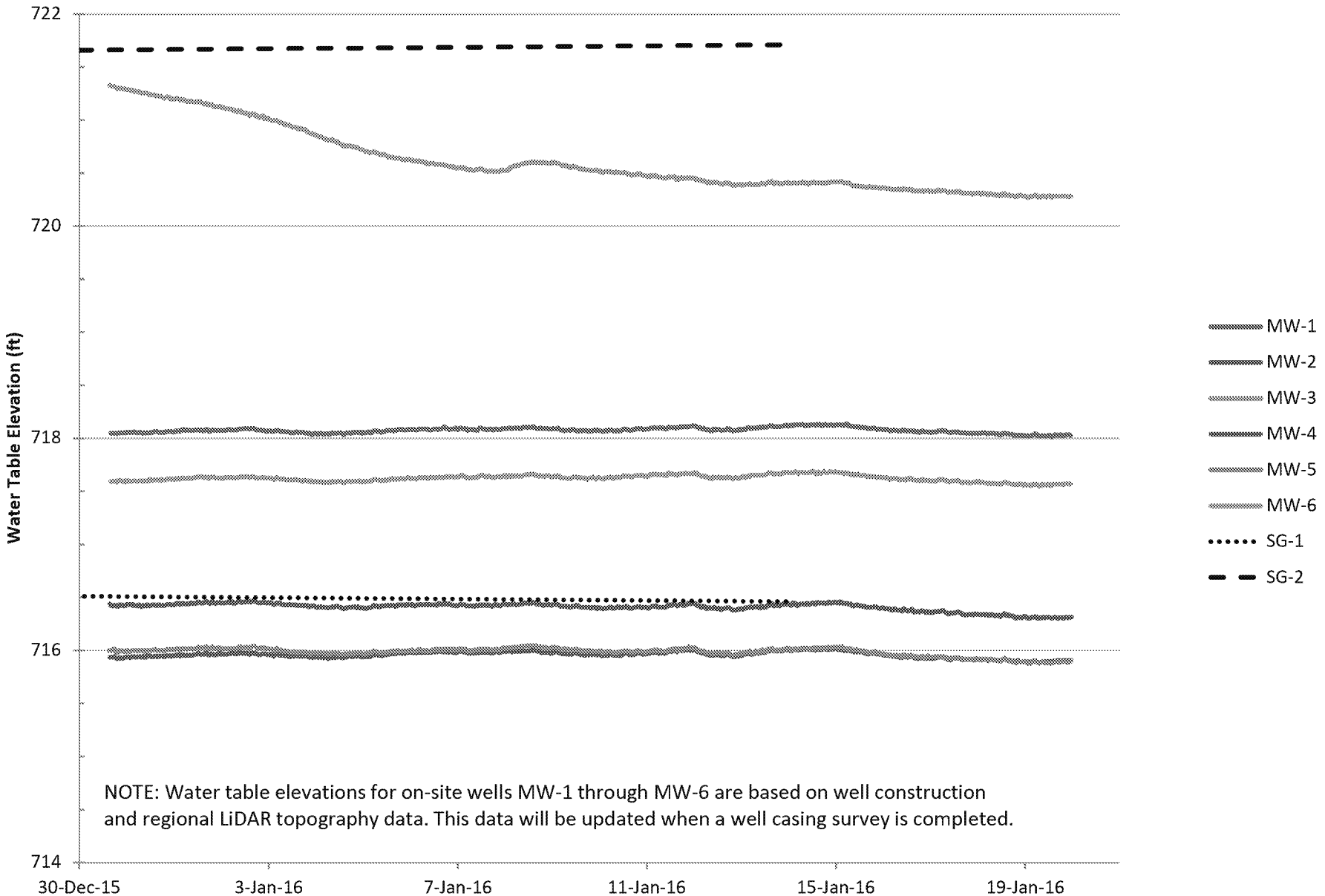


Figure 8: Spring Green Monitoring Well Water Elevations
Regional Wells
SG 1
SG 2
SG 3
SG 4
SG 5
SG 6
On-site Wells
MW 1
MW 2
MW 3
MW 4
MW 5
MW 6
Water Table Elevation (ft)
730.00
725.00
720.00
715.00
710.00
705.00
700.00
695.00
10/21/2008
5/9/2009
11/25/2009
6/13/2010
12/30/2010
7/18/2011
2/3/2012
8/21/2012
3/9/2013
9/25/2013
4/13/2014
10/30/2014
5/18/2015
12/4/2015
Refer to Figures 6 and 7
for well locations.

Figure 9 - Dale Clark Site Groundwater Elevations



NOTE: Water table elevations for on-site wells MW-1 through MW-6 are based on well construction and regional LiDAR topography data. This data will be updated when a well casing survey is completed.

ATTACHMENT 5

RESUMES

CK
ENTERPRISES

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Stantec

Mr. Kraemer specializes in environmental regulatory support and policy. He has substantial experience working with the local, state, and federal regulatory agencies on complex, often controversial projects. Mr. Kraemer has substantial experience assisting clients at the project planning level to identify and plan for environmental regulatory implications and risk across many industry sectors with particular expertise in the utility and private development industries. Mr. Kraemer has a thorough understanding of the technical and regulatory aspects of environmental projects. His experience includes: Project critical issues analysis/permitting feasibly assessments; Wetland and other natural resource investigations, mitigation planning, and permitting; Clean Water Act and Endangered Species Act studies and consultation; and National Environmental Policy Act documentation (EA/EIS).

In addition to environmental regulatory expertise, Mr. Kraemer has a strong technical background in wetland ecology and botany and manages Stantec's Midwest ecological restoration implementation group. This group is responsible for building, managing, and monitoring natural area restoration projects such as wetland mitigation. Mr. Kraemer is an assured wetland professional through the Wisconsin Department of Natural Resources Wetland Delineation Professional Assurance Initiative and has extensive environmental consulting experience as both a field ecologist and project manager.

EDUCATION

Wetland Training Institute, Training, Wetland Soils and Hydrology, 2003

Vegetation of Wisconsin Workshop, Training, UW-Milwaukee, 2000

Wetland Delineation Training Workshop, Continuing Education and Extension, UW-La Crosse, 2001

Identification of Sedges Workshop, Training, UW-Milwaukee, 2001

Environmental Corridor Delineation Workshop, Training, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004

M.S. – Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin, Milwaukee, Wisconsin, 2003

B.S. – Biological Sciences (Emphasis in Aquatic Biology), University of Wisconsin, La Crosse, Wisconsin, 1999

Assured Wetland Delineator, Milwaukee, Wisconsin, 2008

REGISTRATIONS

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources

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

MEMBERSHIPS

Member, Society of Wetland Scientists

Member, Wisconsin Wetlands Association

PROJECT EXPERIENCE

Commercial / Retail Development

Commercial Development, Windsor, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the commercial development project.

Fitchburg Technology Campus, Fitchburg, Wisconsin

Completed woodland assessment, tree survey, and woodland restoration and management plan in support of retail and commercial development project.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.L.T.

Senior Scientist / Project Manager

Conventional Power

Edgewater Generation Facility, Sheboygan, Wisconsin

Managed and coordinated environmental regulatory process for expansion of existing fly-ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Waukegan Power Station, Lake County, Illinois

Provided threatened and endangered species consultation and wetland surveying along Lake Michigan shorelines for permitting a dredging activity and expansion of the facility.

Nelson Dewey Power Generation Facility Expansion Project, Caseville, Wisconsin

Completed comprehensive field evaluations of wetlands in preparation of NEPA documentation for expansion of the facility.

Waukegan Power Generation Facility Expansion Project, Lake County, Illinois

Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the facility.

Invasive Species Survey, Prairie Du Sac, Wisconsin

Conducted a purple loosestrife survey on Lake Wisconsin shorelines and wetlands in order to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Ecosystem Restoration

Campus Facility Native Landscape Management, Milwaukee County, Wisconsin

Managed and coordinated development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Following completion and approval of the plan, continued to manage and coordinate the implementation of native landscape installation and long-term management.

Threatened Plant Species Consultation, Port Wing, Wisconsin

Completed comprehensive study of a threatened plant species population (Petasites sagittatus) in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring. This project resulted in one of the first documented, successful relocation of this species after five years of monitoring.

Neptune Wetland Mitigation Site, Richland County, Wisconsin

Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation bank site.

Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, Wisconsin

Developed and conducted wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands.

Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre mitigation site.

Jug Creek Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 10-acre mitigation site.

Wetland Mitigation Bank Monitoring and Remediation, Oakdale, Wisconsin

Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Samuelson Fen Restoration, Portage, Indiana

Developed restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.D.T.

Senior Scientist / Project Manager

Healthcare

Badger Prairie Health Care Center Expansion Project, Verona, Wisconsin

Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

Oil and Gas Pipelines

New Gas Pipeline Project, Wausau, Wisconsin

Completed environmental surveys along proposed gas pipeline corridor including environmental assessments, threatened and endangered plant species survey, and identification of wetland and upland community types.

Southern Access Expansion Project, Wisconsin

Crude Petroleum Pipeline Project. Completed wetland delineations and habitat assessments along a 343 mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

Power Transmission & Distribution

ComEd Prairie Programs, Various Locations, Illinois

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbicidding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Prairie Program

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbicidding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Electric Transmission Line Projects

Managed support for environmental and GIS services to gain regulatory approvals for new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.
LaSalle-Ottawa, LaSalle County, IL;
Wood River Refinery, Madison County, IL;
Rockwood-Big River, Jefferson County, MO;
Saddle Creek 73, Franklin County, MO.
Havana Rebuild, Mason County, IL

345 kV Transmission Line Project, Wisconsin

Arrowhead to Weston. Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208 mile proposed new transmission line.

Endangered Species Support, Wisconsin

Conducted Karner Blue butterfly surveys (federally endangered) along transmission line right-of-ways.

Residential Development

Country View Estates, DeForest, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

** denotes projects completed with other firms*

Northeast Neighborhood Plan, Fitchburg, Wisconsin
Developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Wesenberg Development, New Glarus, Wisconsin
Conducted threatened and endangered plant species surveys, wetland delineations, and floristic quality assessment in support of the residential development.

Westwynde Development, Sun Prairie, Wisconsin
Completed wetland delineation/evaluations, wetland permitting, wetland mitigation planning, and upland prairie restoration planning in support of the residential development.

Westshore Development Restoration Design, Oconomowoc, Wisconsin
Designed a 30-acre upland habitat enhancement and wetland restoration plan in support of gaining regulatory approvals for residential development.

Warehouse / Light Industrial

Manufacturing Facility Expansion Project, Arcadia, Wisconsin
Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; continue to monitor and coordinate implementation of mitigation plan.

Industrial Facility Expansion Project, Hustisford, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Trucking Facility Expansion, Franklin, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.L.T.

Senior Scientist / Project Manager

PUBLICATIONS

Presentation. Lake Koshkonong Wetlands: Diversity, Floristic Quality, and Community Mapping. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Management of the Eastern Prairie Fringed Orchid in the Lake Koshkonong Wetlands. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Lake Koshkonong Water Level Controversy: A Balance between Recreation and Wetland Protection. *WWA Annual Science Forum*, 2005.

Presentation. Lake Koshkonong Water Levels and Growth Rate of Trees in Bordering Floodplain Forests.. *Lake Koshkonong Wetland Association*, 2005.

Presentation. Floodplain forest hydrology and management implications: Lake Koshkonong as a case study. *Wisconsin Wetlands Association Annual Science Forum*, 2004.

Kraemer, J. Using wetland plants as indicators of fine scale variation in hydrology: the plant community-environment relationship in sedge meadows. *Master's Thesis defense*, 2003.

Presentation. Effects of invasive plant species on natural communities. *UW-Milwaukee, Biology Department*, 2001.

ROBERT J. MONTGOMERY, P.E.

PRINCIPAL

Montgomery Associates
Resource Solutions, LLC

EXPERIENCE SUMMARY

Rob Montgomery has 35 years of consulting engineering experience, applying hydrology and hydraulics to a wide variety of water resources, environmental and civil engineering projects. After completing his bachelor's and master's degrees in civil engineering and working for several years in the United Kingdom, Rob moved to the Madison, Wisconsin area where he worked for a dozen years at Warzyn Engineering, building expertise and management ability in both civil and environmental engineering. In 1992, Rob opened the Madison office for Johnson Johnson & Roy. After three years with Woodward Clyde, Rob began his own practice in water resource engineering in 1998. Montgomery Associates: Resource Solutions, LLC is a water resources practice with expertise in surface water, groundwater, and water quality management.

EXPERTISE

Surface water analysis and design
Groundwater analysis and design
River and Reservoir Analysis
Shoreline Stabilization
Low Impact Development

REGISTRATION

Professional Engineer in Wisconsin 21276

Diplomate in Water Resource Engineering, American Academy of Water Resource Engineers

EDUCATION

BS – Civil Engineering, 1976
U. of Illinois – Champaign-Urbana

MS – Civil Engineering, 1980
Colorado State University

PROFESSIONAL HISTORY

Montgomery Associates: Resource Solutions, LLC: Principal, 1998 - Present

Woodward-Clyde Consultants, Middleton, WI: Consultant, 1995 - 1998

Johnson Johnson & Roy, Madison, WI: Principal, 1992 - 1995

Warzyn Engineering, Madison, WI: Project and Tech. Manager, 1980 - 1992

W H Radford & Son, Nottingham, UK: Staff Engineer, 1976 to 1978

SELECTED PROJECT EXPERIENCE

Lake Belle View Restoration Project, Belleville, WI

- Oversaw coordination of six subcontractors to restore a degraded millpond on the Sugar River with a separation berm, dredging of 140,000 cubic yards, and re-use of dredged soil for wetland habitat creation.
- Oversaw development of conceptual plans, permitting and preliminary engineering, final design, and preparation of construction documents, bid assistance, and construction observation.
- Presented at numerous public meetings, including informational meetings conveying project goals, status, and design and permitting information.

MMSD Climate Change Vulnerability Analysis, Milwaukee WI

- Provided Principal-in-Charge input to planning-level risk analysis of climate change effects on MMSD facilities and operations a subconsultant to Brown & Caldwell.
- The project resulted in a matrix of likely physical responses to climate change and the impacts of each on District collection, storage, treatment and watercourse systems, both to system-wide function and on individual component types.
- The resulting ranking of potential threats due to climate change, included a list of potential adaptation actions and a recommendation of further District planning steps.

Lake Koshkonong Experimental Project, Rock County, WI

- Managed design and construction of wetland restoration/ shoreline protection, including 4,000 yd^3 of dredging, a rip-rap faced shoreline protection berm & creation of habitat with dredged soils placed along wetlands.
- Managed environmental permitting, preparation of construction documents & public bidding process.

119 South Main Street, Suite A • Cottage Grove, WI 53527 ph 608.223.9585 fx 608.223.9586

TECHNICAL ACTIVITIES

Occasional Presenter at UW-Madison Engineering Professional Development and Department of Civil and Environmental Engineering.

Member, ASCE Urban Water Resources Research Council, Task Committee participant

Member, Capital Area Regional Planning Commission Technical Advisory Committee

Participant, Wisconsin Initiative for Climate Change Impacts (WICCI), urban storm water and water resource committees

SERVICE ACTIVITIES

Chair, ASCE Wisconsin Section Report Card on Infrastructure - Rivers & Dams

Chair, Town of Pleasant Springs Planning Commission

Member of Dane County Advisory Committee on Revised Stormwater Infiltration Ordinance

Hydraulic controls and operating strategies for Indianford Dam and Lake Koshkonong, WI

- Served as hydrologist to the District since 2001.
- Oversaw development & calibration of hydrodynamic (HEC-RAS) model of the Rock River and Lake Koshkonong.
- Developed strategy for dam operation and lake water level management, integrated with ecological objectives.
- Presented details at numerous meetings with agency staff and stakeholders, and testified at contested case hearing.
- Led District's technical partnership with the US Army Corps of Engineers and the Wisconsin DNR on developing a Comprehensive Plan for Lake Koshkonong.

San Diego Creek Channel Repair Design, Irvine, CA

- Led investigation of failure mechanisms and preparation of repair design alternatives for ~1 mile of channel lined with articulated concrete block.
- Managed geotechnical investigation, hydraulic modeling, block stability analysis & hydraulic flume testing.
- Presented to technical and legal representatives.

Robinson/Herrling Dam Restoration, Greenbush, WI

- Prepared hydrologic, structural and environmental impact analysis, permitting & design for permitting of restoration of award-winning 1850s dam, millpond, and sawmill.
- Developed alternatives to avoid impact to Mullet River, including two state-threatened mussel species.

Shore Protection and Environmental Management, Park Shore Development, St. Francis, WI

- Conducted site investigation of groundwater and soil contamination and the physical remains of the structures along and in Lake Michigan
- Designed 600-ft rock revetment & oversaw maintenance plan for 400-ft sheet pile wall on Lake Michigan.

Whistling Straits Golf Course, Sheboygan, WI

- Developed a comprehensive analysis of vegetation, surface and groundwater hydrology and civil engineering issues to analyze options for wetland impact minimization.
- Developed a detailed impact mitigation plan, including compensatory wetland construction, which resulted in approval by Wisconsin DNR and the Corps of Engineers.
- Implemented a wetland impact and mitigation monitoring program for the project.

DANE M. WUDEL, E.I.T.

STAFF ENGINEER

Montgomery Associates
Resource Solutions, LLC

EXPERIENCE SUMMARY

Dane is a 2013 graduate of University Wisconsin—Madison with a Bachelor of Science in Civil and Environmental Engineering. Since graduation, Dane has worked in the engineering consulting field conducting analyses and preparing reports and documents associated with stormwater and erosion control permitting for utility and site improvement/development projects, water quality monitoring data collection and analysis, and low impact design. Dane is well versed in topographical analysis, hydrologic and hydraulic modeling, stormwater management, and erosion control, among others. Dane is proficient user of AutoCAD Civil3D, Microstation, RECARGA, WinSLAMM, HEC-RAS, P8, ArcGIS, and HydroCAD modeling and drafting applications.

EXPERTISE

Erosion Control
Water Quality Analysis
Hydrologic and Hydraulic Modeling
Stormwater Management Analysis and Design
Site Survey and Topographic Analysis
Construction Drawings and Details
Low Impact Development Design

REGISTRATION

Engineer in Training (E.I.T.)
Wisconsin # 1512531

EDUCATION

B.S. Civil and Environmental Engineering, 2013
University of Wisconsin-Madison

PROFESSIONAL HISTORY

Montgomery Associates: Resource Solutions, LLC
Cottage Grove, WI
Staff Engineer
2014-Present

University of Wisconsin—Madison
College of Engineering
Undergraduate Learning Center
SI Facilitator
2011-2014

AFFILIATIONS

Engineers Without Borders (EWB)
Madison, WI

Friends of Starkweather Creek (FSC)
Madison WI

SELECTED PROJECT EXPERIENCE

Leopold Memorial Reserve Enhanced Wetland, Fairfield, Wisconsin (MARS Staff Engineer)

- Collected surface water and groundwater samples for water quality testing and performed flow measurements within wetland and adjoining stream.
- Analyzed water quality data to determine on-site nutrient loading trends
- Incorporated local precipitation data and site flow data to quantify nutrient loading trends and nutrient loading mitigation performance of the wetlands

Grand Legacy at Lake Wisconsin, Dekorra, WI (MARS, Staff Engineer)

- Developed construction plans for a 340 acre rural residential development
- Used Civil 3D, HydroCAD, WinSLAMM, and ArcGIS to conduct hydraulic and hydrological analysis and design
- Prepared erosion control and stormwater management plan to meet local and state requirements
- Coordinated with local regulatory agencies, survey crew, developer, and owner to develop grading and construction plans

Alliant Energy/ATC Electric Substations, Multiple Locations, WI (MARS Staff Engineer)

- Performed hydrologic and hydraulic analysis of pre- and post-development conditions to satisfy local and state regulations
- Evaluated local environmental and drainage features to develop grading and construction plans
- Developed stormwater management, erosion control plans for permitting and construction of various utility substation projects

ATC Substation Stormwater Facility Inspections, Multiple Locations, WI (MARS Staff Engineer)

- Conducted field investigations to evaluate performance of stormwater management plans
- Confirmed repair work done to alleviate previously observed stormwater management problems
- Identified on-site vulnerabilities and potential erosion control and stormwater management concerns
- Prepared reports to recommend further actions to rectify potential obstacles to stormwater management goals

Bluegill Bay County Park Fishing Pond Restoration, Wausau, WI (MARS, Staff Engineer)

- Performed dissolved oxygen measurements, inflow and outflow flow rate measurements, and depth measurements to characterize site conditions
- Performed historical analysis of the site and contributing waters to identify potential water quality concerns
- Designed low impact development features to treat stormwater discharges contributing to the site
- Coordinated with local and state regulatory agencies to obtain dredging, zoning, and erosion control permits

Cason and Associates, Various Projects, Multiple Locations, WI (MARS Staff Engineer)

- Used HydroCAD, P8, and WinSLAMM to analyze pre- and post-development conditions
- Designed stormwater management devices to meet applicable regulatory performance standards
- Developed erosion control and stormwater management plans obtain applicable permits
- Coordinated with project team members to identify endangered species concerns and design construction methods to minimize habitat impacts

Alliant Energy Distribution Service Projects, Multiple Locations, WI (MARS Staff Engineer)

- Used ArcGIS applications to prepare Public Service Commission – Certificate of Authority submittals to install new utility distribution services
- Conducted analyses to identify regulated environmental features to design a low-impact construction plan
- Used ArcGIS and Civil3D to prepare erosion control plans, wetland impacts reports, and other documents to secure local, state, and federal permits
- Coordinated with various project team members to incorporate natural and cultural resource preservation practices into construction plans

Madison Gas and Electric Company, Various Submittals (MARS, Staff Engineer)

- Prepared various erosion control plans and other planning documents related to the installation of underground gas distribution services
- Used ArcGIS to evaluate spatial data to determine site characteristics and identify potential concerns
- Evaluated project routes and environmental features to develop final erosion control and construction plans
- Coordinated with various state and local agencies to complete submittals and obtain permits

NAMI Building Drainage Improvements, DeForest, WI (MARS, Staff Engineer)

- Prepared construction plans and cost estimates to improve drainage at a 101,000 sq. ft. industrial facility
- Used AutoCAD Civil 3D to analyze survey information to determine drainage characteristics
- Created hydrologic and hydraulic model of the site to evaluate and design drainage improvement options
- Coordinated with surveyor to determine potential utility conflicts and incorporated these into the design