WETLAND, WATERWAY AND HABITAT EVALUATION

GRANDE PRAIRIE WIND FARM

HOLT COUNTY
STATE OF NEBRASKA

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JULY 23, 2012

OLSSON PROJECT NO. 012-0467

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EXECUTIVE SUMMARY

This report documents the findings of a wetland, waterway, and habitat evaluation conducted at the Grande Prairie Wind Farm project site in Holt County, Nebraska. The evaluation included a review of existing resources and site visits in May and June 2012 to delineate wetlands, waters, and habitat, as well as to conduct surveys for the state threatened small white lady's-slipper (*Cypripedium candidum*) and federal and state threatened western prairie fringed orchid (*Platanthera praeclara*). Surveys for the orchids were conducted within areas of potentially suitable habitat during each species' respective blooming periods, and no orchids were observed within the study area.

As part of the wetland evaluation, a total of 465 wetland areas were identified within the approximately 54,370-acre (85-sq mi) study area totaling approximately 1,718 acres (2.7-sq mi); equating to approximately 3% of the study area that was comprised of wetlands. Olsson believes that 298 of the wetland areas are likely to be considered jurisdictional, or waters of the U.S. The remaining wetland areas are likely non-jurisdictional based on the absence of a significant nexus to waters of the U.S. Likely jurisdictional waters within the study area include the North Branch Verdigre Creek, Steel Creek, Squaw Creek, Sandy Creek, Louse Creek, Spring Creek, and Tributary of Redbird Creek.

Main habitat types within the study area included grassland (approximately 57% of habitat composition) and cultivated farmland (43%). Grasslands along the peripheries of the study area were mostly native or remnant-native mixedgrass prairie, whereas grasslands located near cultivated farmlands were mostly improved. Other much smaller habitat types included wetlands, streams, and woodlands.

The east half of the project site is located with the Verdigris-Bazile Biologically Unique Landscape which is known to contain at least 18 at-risk terrestrial communities. One community, entitled Freshwater Seep, was observed in the study area and is considered a priority for conservation. Remnants of two other at-risk communities were observed, and included the Dry-Mesic Bur Oak Forest and Woodland, and the Cottonwood-Peachleaf Willow Riparian Woodland.

I. INTRODUCTION

Olsson Associates (Olsson) was retained by Grande Prairie Wind LLC to conduct a wetland, waterway, and habitat evaluation at the proposed location of their Grande Prairie Wind Farm project (the project) in Holt County, Nebraska (Figure 1; Appendix A). Additionally, surveys were conducted for two species of orchids, the small white lady's-slipper (state threatened) and western prairie fringed orchid (federal and state threatened). The purpose of the evaluation was to document the locations, boundaries, and types of wetlands, waters, and other habitat within the study area as part of a review of potential environmental impacts associated with the proposed project. The study area included project-leased properties with the potential to support future wind energy infrastructure including turbines, roads, substations, collector lines, and transmission lines. This report documents the findings of the evaluation within the study area.

The wetlands delineation was conducted according to methodology outlined by the U.S. Army Corps of Engineers (USACE), *Corps of Engineers Wetland Delineation Manual (1987)* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0; March 2010).*

For an area to be considered a wetland, three wetland parameters are typically required. These are:

1. Hydrophytic Vegetation - the USACE defines hydrophytic vegetation as the community of

macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present.

2. Hydric Soils - the USACE defines hydric soil as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soil indicators can be physical and chemical properties of the soils that can be seen, felt, or measured.
3. Wetland Hydrology - the term "wetland hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to or near the surface during a portion of the growing season, and which have an overriding influence on the characteristics of vegetation and soils of those areas. Although numerous factors (such as precipitation, stratigraphy, topography, soil permeability, and vegetation cover) influence the wetness of an area, the characteristic common to all wetlands is the presence of an abundant supply of water.

If a wetland meets these three criteria, and falls under the jurisdiction of the USACE, it may be subject to regulation under Section 404 of the Clean Water Act. If a project impacts jurisdictional wetlands, a Section 404 Permit and compensatory mitigation may be required.

II. SITE DESCRIPTION

The project site is located in a rural part of northeast Holt County, Nebraska, and is approximately six miles northeast of the City of O'Neill and six miles south of the Niobrara River (Figure 2). The study area is located within portions of six townships including:

Township 31 North, Range 10 West
Township 31 North, Range 9 West
Township 30 North, Range 11 West
Township 30 North, Range 10 West
Township 30 North, Range 9 West
Township 29 North, Range 10 West

The general topography across the study area is flat or gentle-sloping within central and southern portions, and undulating with gentle to moderate slopes along the western, northern, and eastern portions that give way to streams and other drainages along the Niobrara River Valley. Within the central and southern part, land use is predominantly cultivated farmland for corn and soybean production, and is irrigated by center-pivots. Scattered small tracts of grasslands exist for use as pasture, but are greatly fragmented. The western, northern, and eastern portions of the study area are mostly comprised of large tracts of native or remnant-native mixedgrass prairies and riparian corridors that are tributaries of the Niobrara River.

Biologically Unique Landscape

According to the Nebraska Natural Legacy Project (Schneider et. al., 2011), the project site is located wholly within the mixedgrass prairie ecoregion of Nebraska, and the eastern half of the study area is located in the Verdigris-Bazile Biologically Unique Landscape (BUL). This BUL consists primarily of a mosaic of cropland, restored native grasslands, native tall-grass and mixed-grass prairie, and exotic cool-season grasslands. A total of 18 at-risk terrestrial communities are known to exist within the BUL.

III. REVIEW OF EXISTING RESOURCES

Several existing resources were reviewed as part of the evaluation process, including:

USGS Topographic Map

Review of the USGS topographic map (Figures 3A - 3D) for the project site indicates that the general topography across the study area is flat or gentle-sloping within central and southern portions, and undulating with gentle to moderate slopes along the western, northern, and eastern portions. Elevations surrounding the central and southern portions of the study area range between 1,930-ft above mean sea level (msl) to 1,950-ft above msl, and decrease to around 1,850-ft above msl in the western, northern, and eastern parts where valleys form intermittent and perennial drainages. The general flow direction across the study area is to the north/northeast toward the Niobrara River, located approximately six miles to the north.

Woodlands are depicted by the dark-green shaded areas on the topographic map, and are scattered throughout the study area. Most woodlands are associated with the valleys along the eastern and western peripheries of the study area, and some are scattered throughout the study area and are mostly associated with shelterbelts adjacent to fields, roadsides, and homesteads.

Several blue lines are named on the topographic maps, including: North Branch Verdigre Creek, Steel Creek, Squaw Creek, Sandy Creek, Louse Creek, Spring Creek, and Tributary of Redbird Creek. Solid blue lines, that are usually indicative of perennial waters, included the North Branch Verdigre Creek, Steel Creek, Louse Creek, and Tributary of Redbird Creek. All other blue lines throughout the study area were depicted as dashed blue lines, which are usually indicative of ephemeral or intermittent waters.

Solid blue polygons and marsh symbols, which are indicative of wetland areas, are shown on the topographic map within the study area. These areas were scattered throughout; however, the vast majority were located along the blue lines to indicate areas of ponds and marshes.

County Soil Data

According to the NRCS SSURGO Digital Soils Data and Web Soil Survey for Holt County (Figures 4A - 4D), 88 soil types exist within the study area. The list of soils is provided as Appendix B.

The following soil types are considered hydric soils, as illustrated on Figures 4A - 4D. Several other soils types within the study area may have hydric inclusions.

Map Symbol	Map Unit Name
3951	Fillmore silt loam, occasionally ponded
4215	Blackloup loam, rarely flooded
4216	Blackloup loam, occasionally flooded
4662	Loup fine sandy loam, 0-1 % slopes
4669	Loup fine sandy loam, frequently ponded
4683	Marlake fine sandy loam, frequently ponded
6320	Barney-Boel-Calamus complex, channeled
9905	Fluvaquents, sandy-Fluvaquents, loamy complex, frequently flooded

According to the NRCS Web Soil Survey, all of the above listed soil types have depths to the water table of between 0-cm to 23-cm (0-in to 9-in). These subirrigated areas were the primary focus of the orchid surveys.

National Wetlands Inventory

The NWI depicted numerous wetland areas throughout the study area as shown on Figures 5A - 5Q. The wetland areas include the following palustrine (freshwater wetlands not within rivers or

lakes) wetland types: aquatic bed, emergent, forested, scrub shrub, unconsolidated bottom, and unconsolidated shore.

Please note that the NWI wetlands depicted on Figures 5A-5Q have been adjusted to provide more accurate wetland boundaries. In some instances, NWI wetland polygons were shown within the study area however field verification determined that no wetlands were present. Those NWI polygons are not shown on Figures 5A-5Q.

Nebraska Department of Natural Resources (DNR) Waters

As shown on Figures 5A-5Q, seven blue-colored polylines (stream boundaries as obtained from the DNR's Hydrologic Units Streams GIS data) were identified in the study area. These polylines included the same named waterways as discussed above in the USGS topographic map section. As discussed below in Section V, Summary of Findings, these waters are likely to be considered jurisdictional (waters of the U.S.).

Orchid Literature Review

The small white lady's-slipper is a state-listed threatened species, and the western prairie fringed orchid is a federal and state-listed threatened species (NGPC, 2011). The estimated range for each species is located approximately 1-mi southwest of the study area boundaries (NNHP, 2011). Given the proximity of each species' estimated range to the project site, the Nebraska Game and Parks Commission (NGPC) requested that orchid surveys be conducted.

In Nebraska, suitable habitat for both orchid species is fairly similar and includes wet meadows (i.e., sedge meadows) or wet-mesic prairies. According to NGPC botanist Mr. Gerry Steinauer (2009), the primary habitat for small white lady's-slipper is mid- to high-quality native wet hay meadows or roadside ditches adjacent to these areas, and that this species is rarely associated with areas that are grazed annually. The western prairie fringed orchid occurs most often in sedge meadows and remnant tallgrass native prairies that are often associated with big bluestem (*Andropogon gerardii)*, little bluestem (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), indiangrass (*Sorghastrum nutans*), and northern reedgrass (*Calamagrostis stricta*) (USFWS, 2011). A constant source of reliable hydrology is required for both species. Reliable hydrology is considered a constant source such as the subirrigated sedge meadows which rely on near-surface groundwater adjacent to the Platte River (USFWS, 1996). Subirrigated soils were identified within the study area and are mapped as hydric soils on Figures 4A-4D.

IV. FIELD INVESTIGATION

Site visits were conducted during the appropriate time periods to evaluate the study area for wetlands, other waters, and orchids. During these site visits, habitat types were also documented throughout the study area.

Orchids

Two site visits were required to survey for the small white lady's-slipper and the western prairie fringed orchid, with the time periods dictated by each species' blooming period. Blooming periods for each species were determined through coordination with the Nebraska Game and Parks Commission. The first site visit was conducted on May 15-18, 2012 to evaluate the study area for areas of potentially suitable orchid habitat, and to conduct surveys in those areas to determine the presence or absence of the small white lady's slipper. While the small white lady's-slipper typically does not bloom until the period of late-May to early-June, the blooming period was early due to an unseasonably mild Spring that resulted in an early growing season. The survey for the western prairie fringed orchid was conducted on June 4-8, 2012, at the same time as the wetland delineation. The blooming period for the western prairie fringed orchid was also earlier than usual,

as this species typically blooms between late-June to mid-July most years.

In areas determined as potentially suitable habitat (see Figure 6), Olsson biologists conducted surveys to determine the presence or absence of both species, by traversing the areas on transects spaced 15-ft apart. The transects were conducted on foot and using an ATV.

Wetlands and Waters

The site visit on June 4-8, 2012 was used evaluate the various project-leased properties within the study area for potential wetlands and other waters. The evaluation was conducted by traversing the study area via motorized vehicles and/or walking areas to closely inspect potential wetland areas. Wetland areas that were depicted on the NWI map were observed to confirm their presence and for ground-truthing of the wetland boundaries. The vast majority of the NWI wetlands observed had boundaries that were slightly different than those depicted by the NWI; thus, these wetland areas required revised boundary delineations.

For new wetland areas that were identified (not on the NWI), their boundaries were delineated using handheld GPS with sub-meter accuracy and/or using aerial imagery to digitize the boundaries. Data was either recorded in a logbook or on Wetland Determination Data Forms (Great Plains Region) to document the presence or absence of hydrophytic vegetation, hydric soils, and wetland hydrology according to guidelines established by the USACE. The data collected was documented in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0; March 2010)*. Data forms are included as Appendix C which provide detailed information on several of the wetland areas. Data that was recorded in a field logbook is not being provided with this report. A brief narrative and representative photographs of the wetlands and other waters within the study area are provided below in Section V.

Photographs documenting on-site conditions are included in Appendix D. The Wetland Delineation Maps (Figures 5A-5Q) depict the locations of wetlands, waters, and photographs.

V. SUMMARY OF FINDINGS

The following is a summary of the evaluations within the study area.

Habitat

Main habitat types within the study area included grassland (approximately 57% of habitat composition) and cultivated farmland (43%). Within the central and southern part, land use was predominantly cultivated farmland for corn and soybean production, and was irrigated by center-pivots (Figure 6). Scattered small tracts of grasslands exist for use as pasture, but are greatly fragmented and have been improved by the introduction of forage species dominated by smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*). Isolated wetlands and waterways are scattered throughout these farmlands, but are well-drained and disturbed by cultivation.

The western, northern, and eastern portions of the study area were mostly comprised of native or remnant-native mixedgrass prairies and riparian corridors that are tributaries of the Niobrara River. In these areas, minor habitats included improved grasslands, cultivated farmland, and wooded ravines. Pasture for livestock grazing and hay production are the major land uses in the grasslands and riparian corridors. The riparian corridors include large wetland complexes that are dominated by flooded and subirrigated sedge meadows with minor inclusions of ponds (impoundments), scrub shrub, and forested wetlands. In the native and remnant-native mixedgrass prairies, needleandthread (*Hesperostipa comata*), indiangrass, and little bluestem are the dominant species.

Woodlands were small tracts (<100 acres) and widely scattered throughout the study area. In the

uplands, woodlands were typically dominated by eastern red cedar (*Juniperus virginiania*) and elm (*Ulmus* species), and were typically planted as shelterbelts near farmsteads and pasture. In the riparian corridors throughout, dominant species included peachleaf willow (*Salix amygdaloides*) and cottonwood (*Populus deltoides*).

Of the 18 at-risk terrestrial communities known to occur in the Verdigris-Bazile BUL, one community known as Freshwater Seep was observed in the study area, and is considered a priority for conservation in the BUL (Schneider et. al., 2011). Remnants of two other at-risk communities were observed, and included the Dry-Mesic Bur Oak Forest and Woodland and the Cottonwood-Peachleaf Willow Riparian Woodland. These areas were too small in size (<100 acres) to be considered intact at-risk communities within the study area. A summary these three at-risk communities follows.

Freshwater Seep - one seep was observed and several more suspected along the south-facing slopes of North Branch Verdigre Creek as part of Wetland W12, particularly in the vicinity of sample point SP-4 (Figure 5L). No groundwater discharge was observed along the northern edge of the wetland area; however, the location near SP-4 was on a hill slope that was approximately 20-ft to 30-ft higher in elevation that the lower sedge meadows abutting North Branch Verdigre Creek. On the hill slope approximately 300-ft southeast of SP-4, a seep was observed where a ravine had formed and 8-ft wide sheet flow was observed flowing into a sedge-dominated swale.

Dry-Mesic Bur Oak Forest and Woodland - small patches of bur oak (*Quercus macrocarpa*) dominated woodlands were observed in the northeast periphery of the study area along the east-facing slopes near Steel Creek.

Cottonwood-Peachleaf Willow Riparian Woodland - no large tracts (>100 acres) were observed in any one location within the study area. Several small tracts were observed along the riparian corridors throughout, but each tract was less than 10 acres in size.

Wetlands and Waters

The NWI identified numerous wetland areas within the study area (Figures 5A-5Q). In addition, Olsson observed numerous wetland areas that were not depicted on the NWI which included farm ponds and impoundments, wetlands adjacent to cattle tanks, small depressional areas, riparian and hay meadow, and wetlands in roadside ditches. Provided in Table 1 (Appendix E) is a list of all the wetlands observed on project-leased properties within the study area. New wetland areas that were not depicted by the NWI are labeled with a "W" prefix, and wetlands that were depicted by the NWI were given a "N" prefix. Table 1 also lists the Cowardin classification for each wetland, the name of the figure where the wetland is depicted, and comments regarding the wetland characteristics and Olsson's opinion of jurisdictional status. Table 2 defines the acronyms used by the Cowardin classification system.

A total of 465 wetland areas were identified within the approximately 54,370-acre (85-sq mi) study area totaling approximately 1,718 acres (2.7-sq mi); therefore, approximately 3% of the study area was comprised of wetlands. Of the 465 wetland areas, 150 of them were not depicted on the NWI and therefore, the boundaries were delineated. The total number of wetlands was based on the number of wetland polygons delineated in the field or using the NWI; however, please note that large continuous wetland complexes along riparian corridors were often comprised of several NWI polygons as well as isolated pockets of uplands; thus, the total acreage of wetlands is actually slightly less. It is Olsson's opinion that 298 of the wetland areas within the study area are likely to be jurisdictional under Section 404 of the Clean Water Act. These wetlands appear to be either

abutting, adjacent to, or have significant nexus to Traditional Navigable Waters (TNW) via Relatively Permanent Waters (RPW) or non-RPW; for example, a drainage located downgradient of a wetland area that had defined bed and bank. The vast majority of these likely jurisdictional wetland areas are located adjacent to the riparian corridors and tributaries of the various streams within the study area (discussed below). All of these streams are tributaries of the Niobrara River located approximately six miles north of the study area, a major tributary of the Missouri River (a TNW).

The remainder of the wetland areas within the study area are likely non-jurisdictional. These wetland areas appear to be isolated, with no significant nexus to a TNW via other waters of the U.S. Most of these wetland areas consisted of shallow depressions located in cropland or pasture, or as agricultural impoundments located in pasture that are connected to swales with upland vegetation and no defined bed and bank located downgradient of the impoundments. Per the guidance *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States, June 5, 2007*, the Corps will generally not assert jurisdiction over swales or erosional features characterized by low volume, infrequent or short duration flow.

Named Waters:
A review of the USGS topographic maps and the DNR's Hydrologic Units Streams (GIS data) identified seven tributaries of the Niobrara River within the study area, including: North Branch Verdigre Creek, Steel Creek, Squaw Creek, Sandy Creek, Louse Creek, Spring Creek, and Tributary of Redbird Creek. All seven streams and many of their unnamed tributaries are likely to be considered jurisdictional (waters of the U.S.) based on the characteristics required to be jurisdictional (i.e., defined bed and bank). Figures 5A-5Q depict the locations of the unnamed tributaries where Olsson either observed bed and bank during the field investigation, or using aerial imagery. While several of the unnamed tributaries to these waters are located in cultivated farmland or pasture and the channels are severely degraded due to land practices, the USACE may assert jurisdiction on them based on the assumption that defined channel characteristics would be present if land cultivation ceased.

North Branch Verdigre Creek – This stream traverses the southeast portion of the study area from southwest to northeast. The upper reaches of the stream has a broad valley comprised of subirrigated meadows and impoundments along its tributaries. Near where the stream exited the study area, the channel width was approximately 25-ft, was inundated approximately 1-2 ft, had a sand bottom, and was flowing.

Steel Creek – This stream traverses the northeast portion of the study area from southwest to northeast. The upper reaches of the stream have a series of impoundments that create marshes, ponds, forested wetlands, and meadows. Where the stream exited the study area, the channel width was approximately 10-ft, was 1-ft deep, had a sand bottom, and was flowing.

Squaw Creek, Sandy Creek, and Louse Creek – These three streams are located in the north-central part of the study area, traversing from southwest to northeast. The upper reaches of each stream were dry with only slight evidence of bed and bank. The downgradient parts of each stream were observed and consisted of wide riparian corridors with meadows and marshes. All are direct tributaries of the Niobrara River.

Spring Creek – This stream is located in the west portion of the study area and traverses to the north/northwest toward Redbird Creek. Water was observed flowing throughout the majority of the stream alignment, which included a narrow riparian corridor dominated by sedge meadows.

Tributary of Redbird Creek – This stream originates in the southwest portion of the study area and

traverses toward the northwest to Redbird Creek. This stream also had a wide riparian corridor that was dominated by sedge meadows.

Unnamed Waters:
In addition to the named streams identified above, the topographic map also depicts numerous unnamed drainages within the study area as dashed blue lines, which is often indicative of intermittent or ephemeral tributaries. These dashed blue lines were evaluated in the field and using aerial imagery to determine the presence or absence of channel characteristics. Several of the dashed blue lines had defined bed and bank; therefore, were determined to be jurisdictional (waters of the U.S.). Figures 5A-5Q depict the areas with bed and bank as orange polylines.

The evaluation determined that several of the dashed blue lines consisted of upland swales characterized by low volume, infrequent, short duration flows, irrespective of land practices and disturbance; therefore, not likely to be considered jurisdictional based on the *Rapanos* guidance.

Orchid Surveys
Sedge meadows were scattered throughout the study area and were the focus of the surveys for small white lady's-slipper and western prairie fringed orchid. Figure 6 illustrates the primary orchid survey areas; however, several smaller tracts of potentially suitable habitat were also investigated throughout. The areas designated as "primary" survey areas typically had subirrigated hydrology that were dominated by native species in riparian corridors, whereas all other areas had less reliable sources of hydrology such as temporarily-flooded or seasonally flooded flow-through hydrology. Land practices within the majority of the primary survey areas consisted of pasture for livestock grazing, although some also consisted of hay meadow.

The best example of potentially suitable orchid habitat within the study area was the riparian corridor adjacent to North Branch Verdigre Creek (Wetland W12; Figure 5L). Soils within this area were subirrigated (Loup fine sandy loam) near the upgradient portion, which resulted in a large continuous wetland complex that was dominated by sedge meadow and adjacent mesic prairie. Evidence of haying and livestock grazing were observed in this area. Species observed in this area are listed below in Table 3; however, no small white lady's-slipper or western prairie fringed orchid were observed.

Table 3. List of plant species observed in Wetland W12, a Primary Orchid Survey Area.

Common Name	Scientific Name	Common Name	Scientific Name
prairie cordgrass	*Spartina pectinata*	switchgrass	*Panicum virgatum*
blunt spikerush	*Eleocharis obtusa*	Kentucky bluegrass	*Poa pratensis*
white clover	*Trifolium repens*	woolyfruit sedge	*Carex lasiocarpa*
shortbeak sedge	*Carex brevior*	fox sedge	*Carex vulpinoidea*
bottlebrush sedge	*Carex hystericina*	broom sedge	*Carex scoparia*
inland sedge	*Carex interior*	Nebraska sedge	*Carex nebrascensis*
blunt broom sedge	*Carex tribuloides*	common rush	*Juncus effusus*
smartweed	*Persicaria hydropiper*	three-square bulrush	*Schoenoplectus pungens*
water plantain	*Alisma subcordatum*	indiangrass	*Sorghastrum nutans*
Foxtail barley	*Hordeum jubatum*	Big bluestem	*Andropogon gerardii*
river bulrush	*Schoenoplectus fluviatilis*	common goldstar	*Hypoxis hirsuta*
reed canarygrass	*Phalaris arundinacea*	marsh fern	*Thelypteris palustris*
watercress	*Nasturtium officinale*	cattail	*Typha latifolia*

All other primary orchid survey areas were considered sedge meadows and typically had some of the same species as listed in Table 1, but often had much less floristic quality due to a dominance by only a few species. No orchids were observed within the study area.

VI. CONCLUSION

Based on the review of existing resources and the field investigation, Olsson determined that 298 likely jurisdictional wetlands and numerous jurisdictional waters exist within the study area. All other wetlands and waterways are likely non-jurisdictional based on the absence of a significant nexus to waters of the U.S. Numerous drainages depicted as dashed blue lines on the topographic map were determined not to be waters of the U.S. based on the absence of channel characteristics observed in the field and/or using aerial imagery. These dashed blue lines appeared to be upland swales characterized by low volume, infrequent, and short duration flows. Although it is the opinion of Olsson that these features would be non-jurisdictional under Section 404 of the Clean Water Act in accordance with the *Rapanos* guidance, these features may be waters of the State. If these features are determined to be waters of the State in accordance with Section 401 of the Clean Water Act (33 U.S.C. par. 1251 et seq.), the Nebraska Department of Environmental Quality will require compliance with State water quality standards (Title 117, Nebraska Administrative Code).

Wetlands should be avoided during construction to the maximum extent possible to avoid having to obtain a Section 404 permit, and to avoid adverse impacts to wetlands and their associated wildlife. In particular, the area designated as Freshwater Seep in Wetland W12 is considered an at-risk terrestrial community that is a priority for conservation in the Verdigris-Bazile BUL; thus, avoidance of this area will be necessary. Following completion of the project design, a determination of impacts to waters of the U.S. should be conducted and a Section 404 permit application should be provided to the USACE. The application should include this report as part of a request for a jurisdictional determination.

Areas of potentially suitable orchid habitat exists within the study area, primarily along the riparian corridors of the major streams. While no orchids were observed during the surveys, not all orchids bloom annually due to various biotic and abiotic factors. Should construction design encroach upon these areas of potentially suitable habitat, the NGPC may request that another survey be performed prior to construction.

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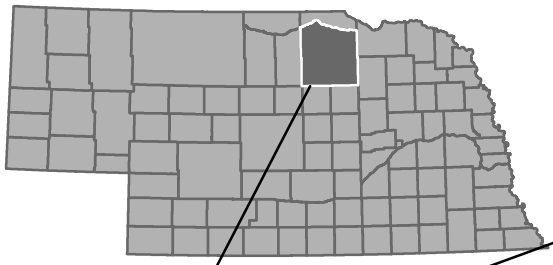
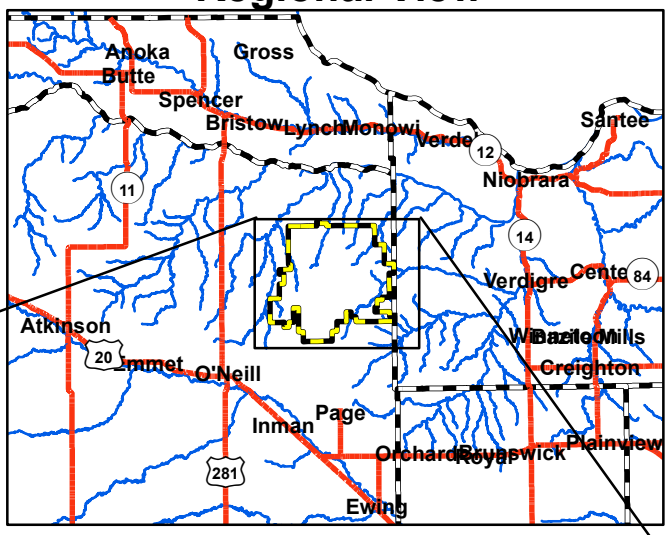
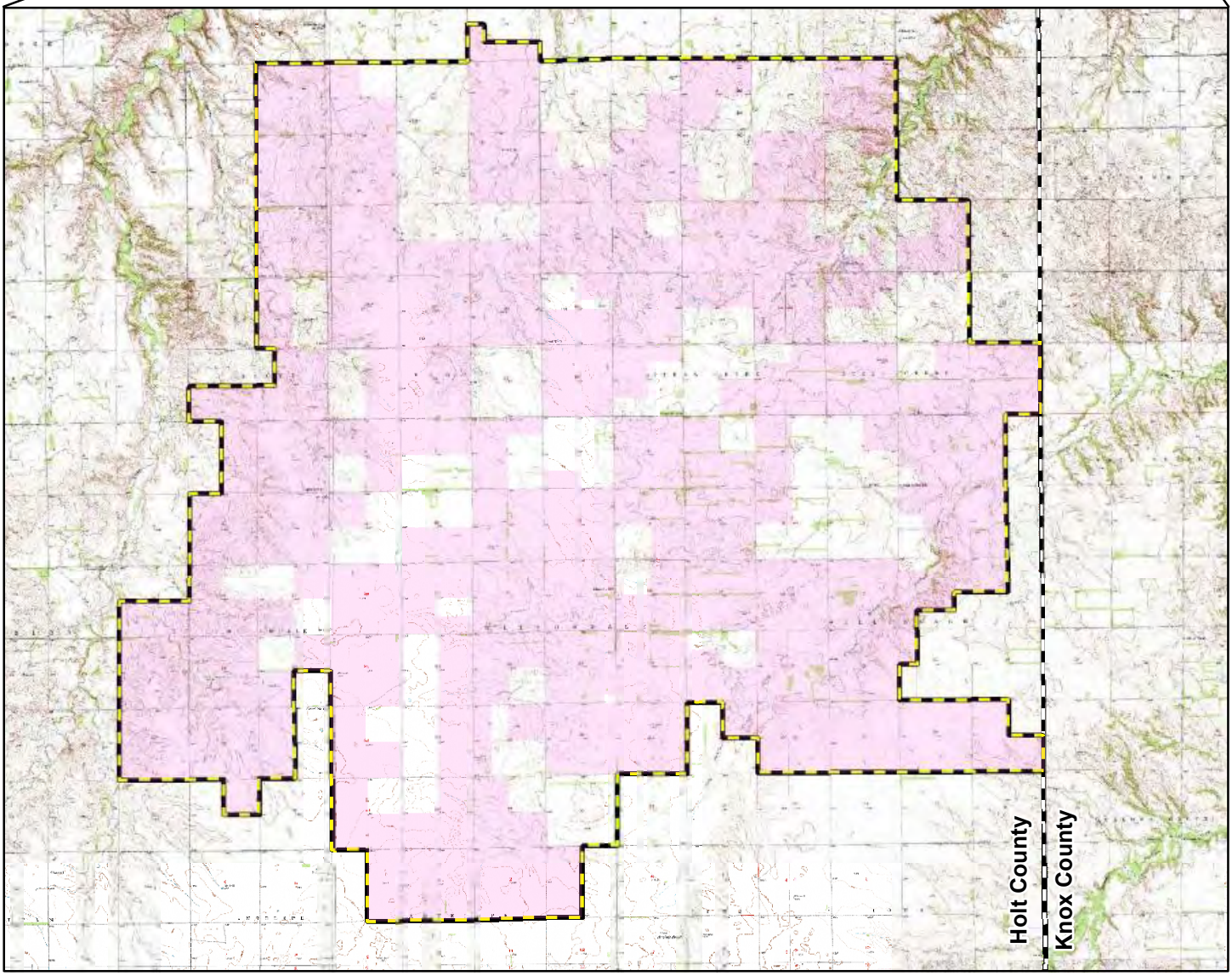
Appendix A

Figures





Approximate Scale 1" = 30 miles



Data Source: USGS Holt County Digital Raster Graphic

Project Footprint
Grande Prairie Parcels
County

N

0 1 2 Miles

1:145,000

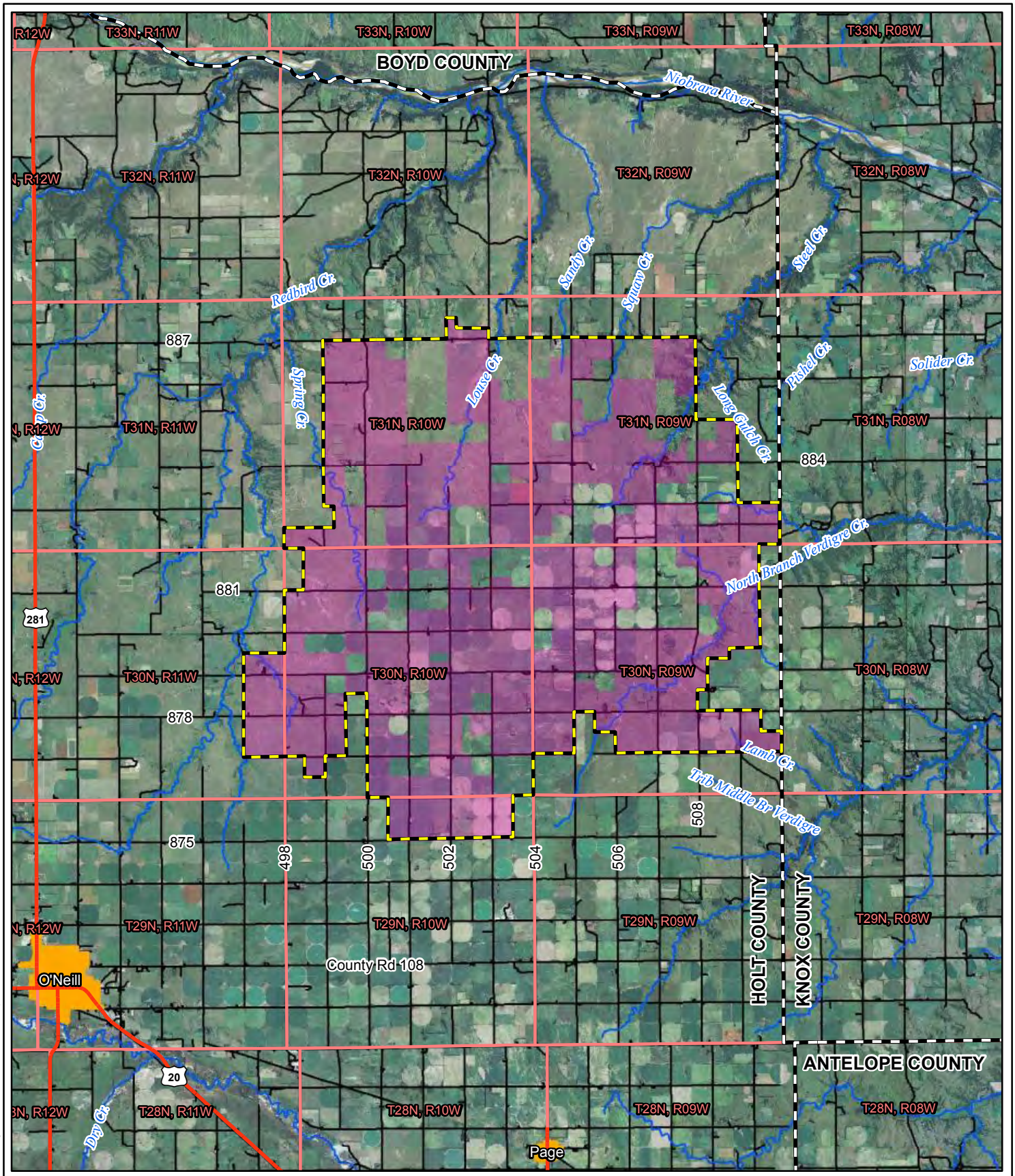
GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Site Location Map

Figure 1

F:/Projects/012-0467/GIS/Maps.mxd



F:/Projects/012-0467/GIS/Maps.mxd

Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties
DNR Hydrologic Unit Streams

Project Footprint
County
Township/Range
Grande Prairie Parcels
Municipal
DNR Streams
Highways
Roads

N

0 1 2
Miles
1:200,000

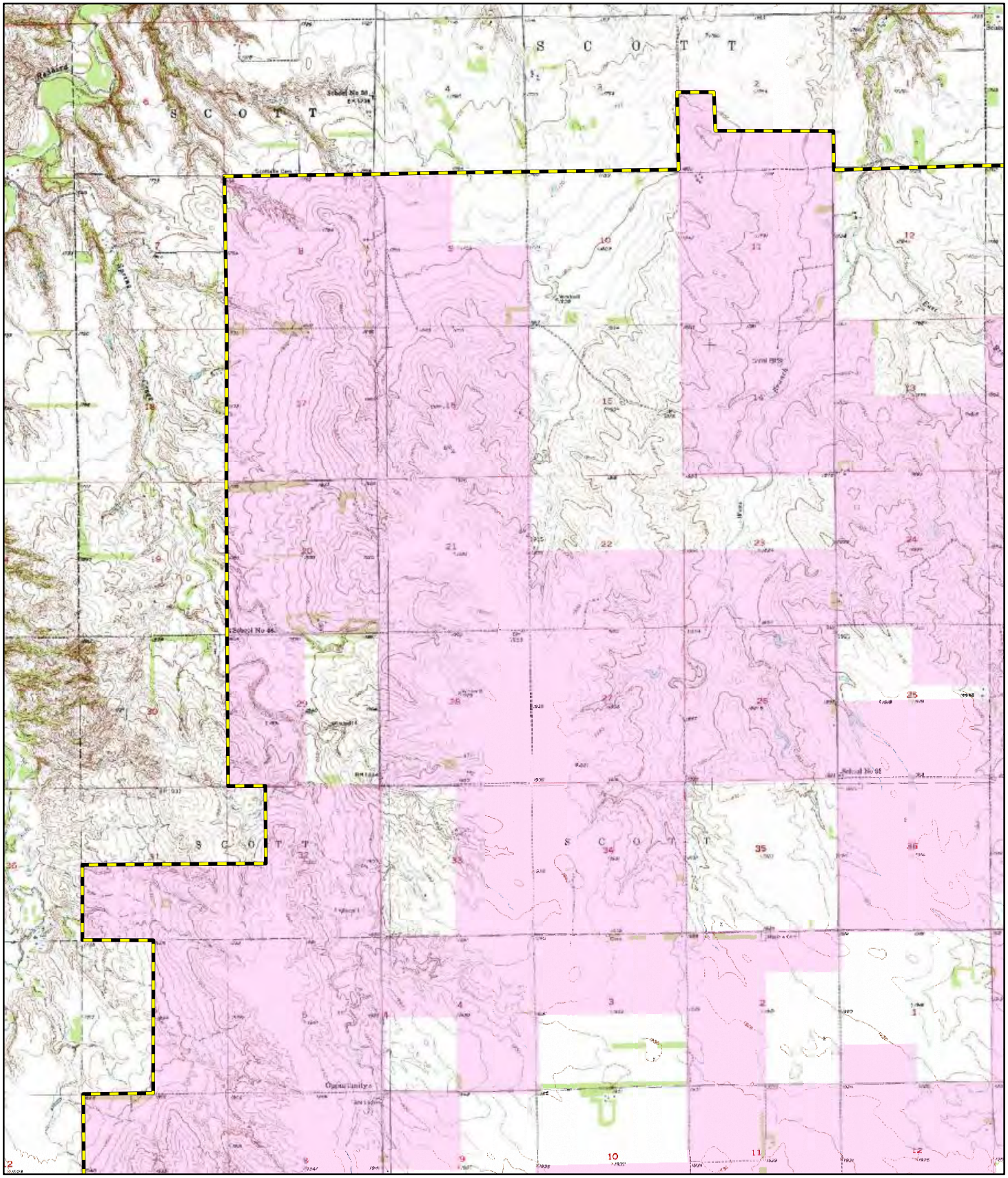
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Site Map

Figure 2



Data Source: USGS Holt County Digital Raster Graphic

F:/Projects/012-0467/GIS/Maps.mxd

Project Footprint
County
Grande Prairie Parcels

N

0 0.5 1 Miles

1:55,000

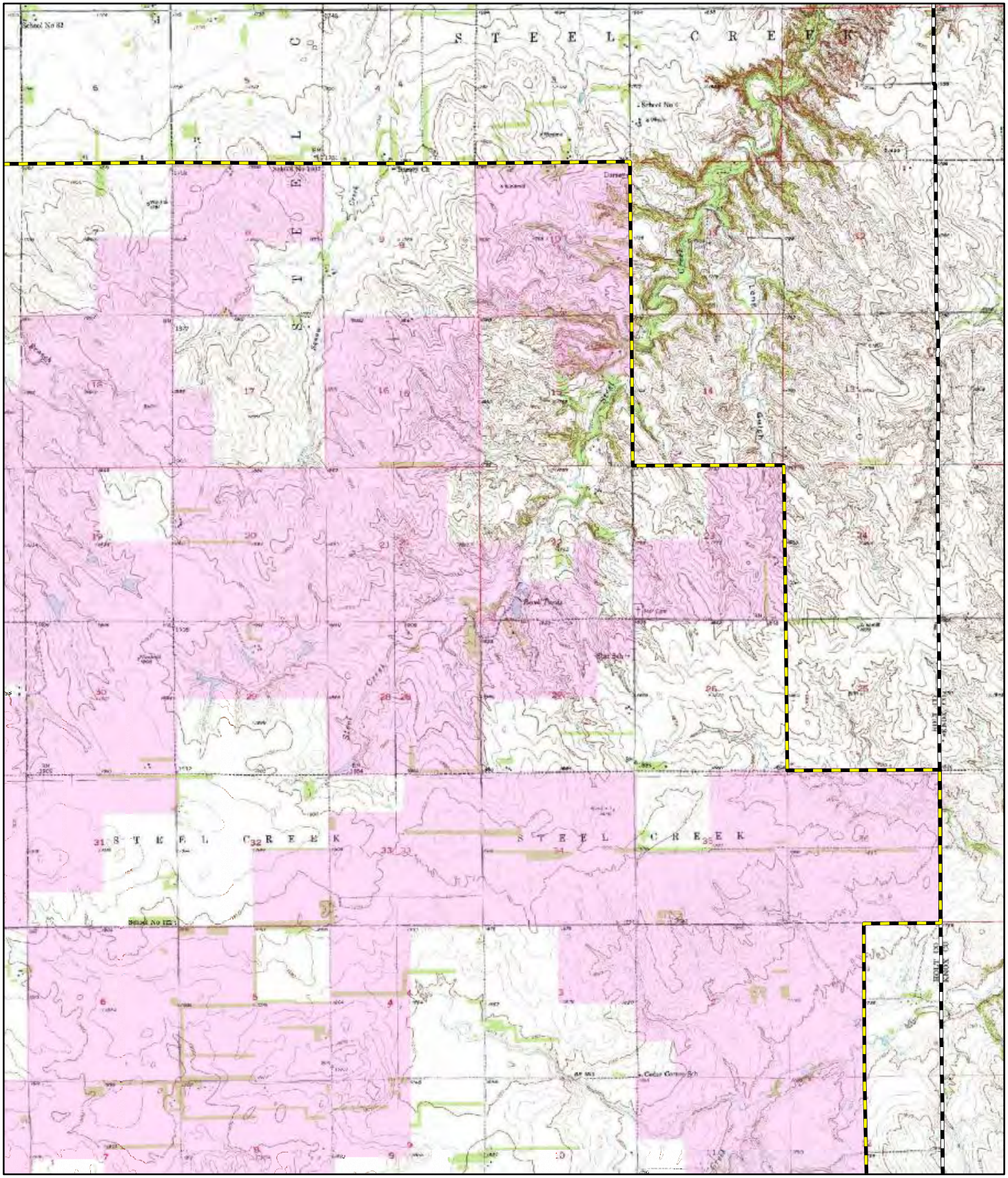
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Topographic Map

Figure 3A



Data Source: USGS Holt County Digital Raster Graphic

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Project Footprint
County
Grande Prairie Parcels

N

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1:55,000

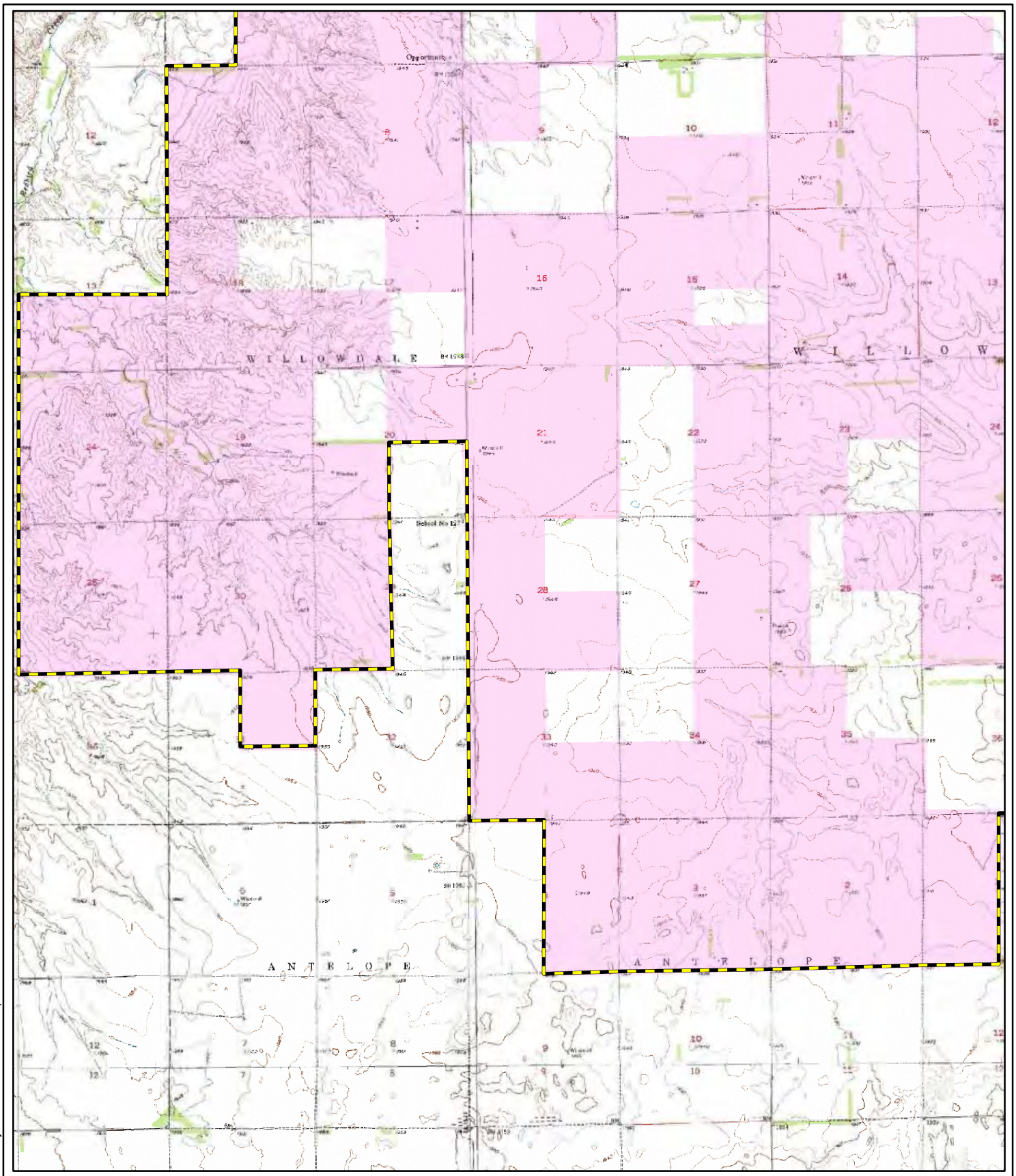
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Topographic Map

Figure 3B



Data Source: USGS Holt County Digital Raster Graphic

Project Footprint
County
Grande Prairie Parcels

N

0 0.5 1 Miles

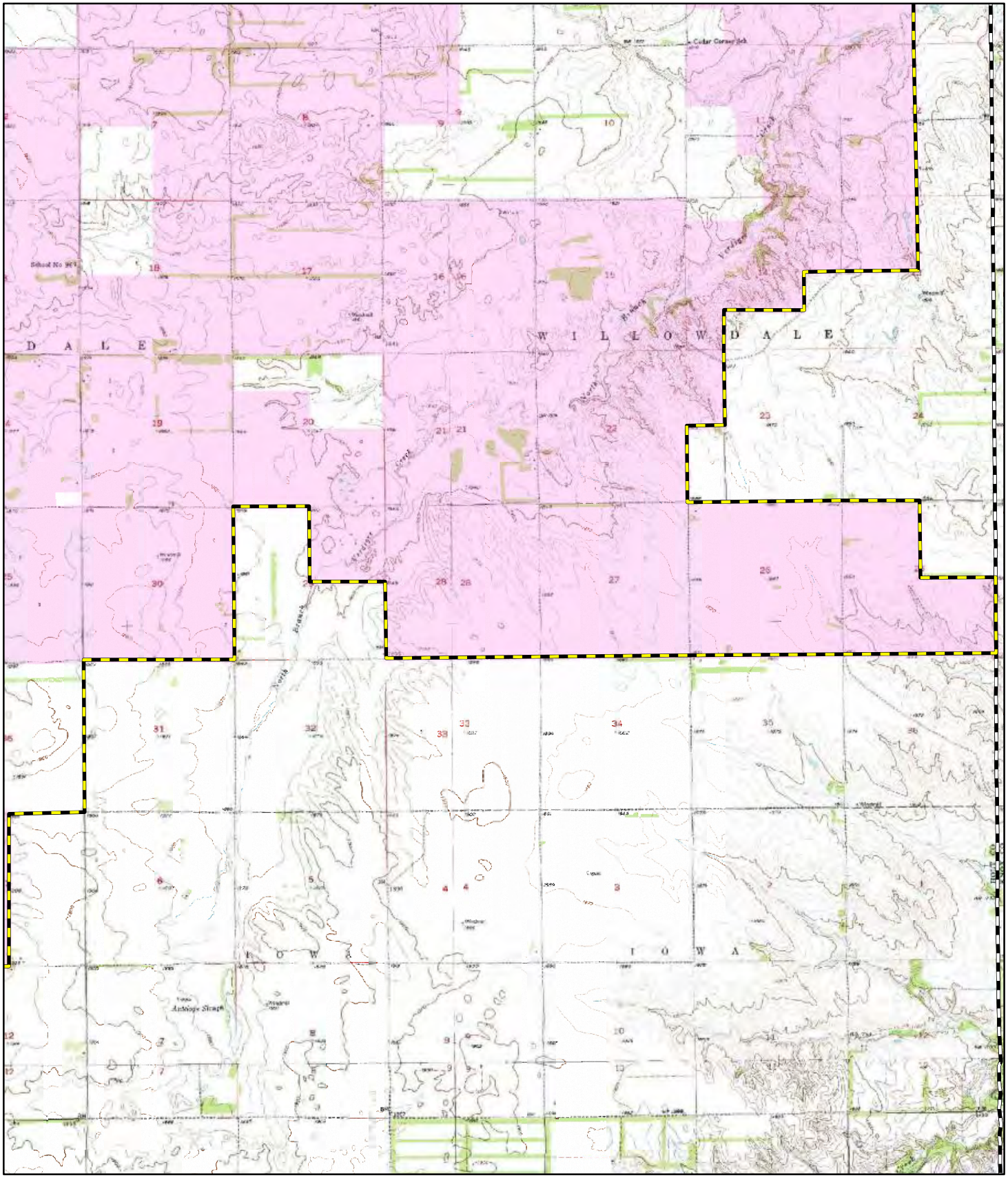
1:55,000

GRANDE PRAIRIE WIND FARM
Grande Prairie Wind LLC
Holt County, NE

Topographic Map
Figure 3C

OLSSON ASSOCIATES

F:/Projects/012-0467/GIS/Maps.mxd



Data Source: USGS Holt County Digital Raster Graphic

F:/Projects/012-0467/GIS/Maps.mxd

Project Footprint
County
Grande Prairie Parcels

N

0 0.5 1 Miles

1:55,000

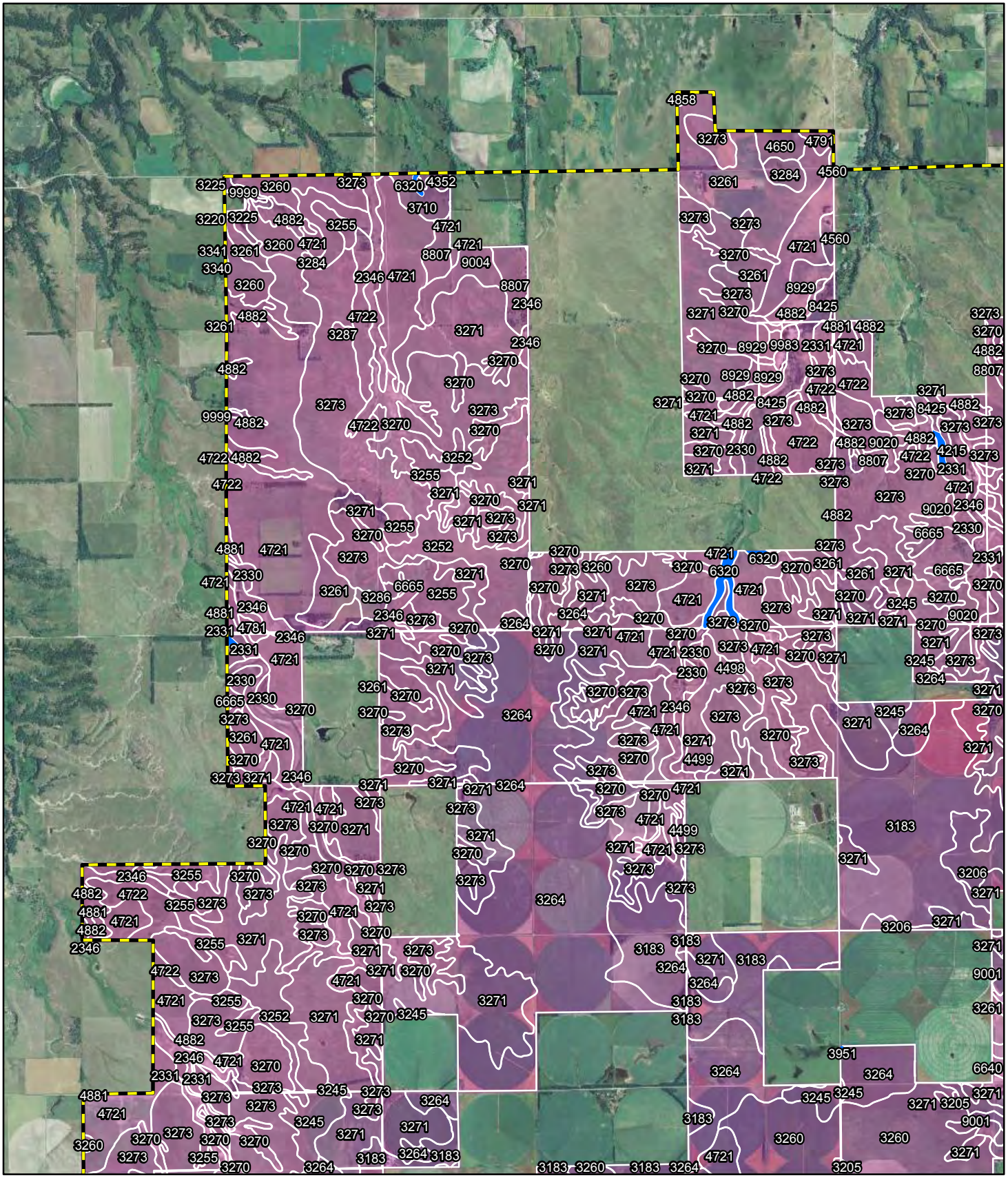
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Topographic Map

Figure 3D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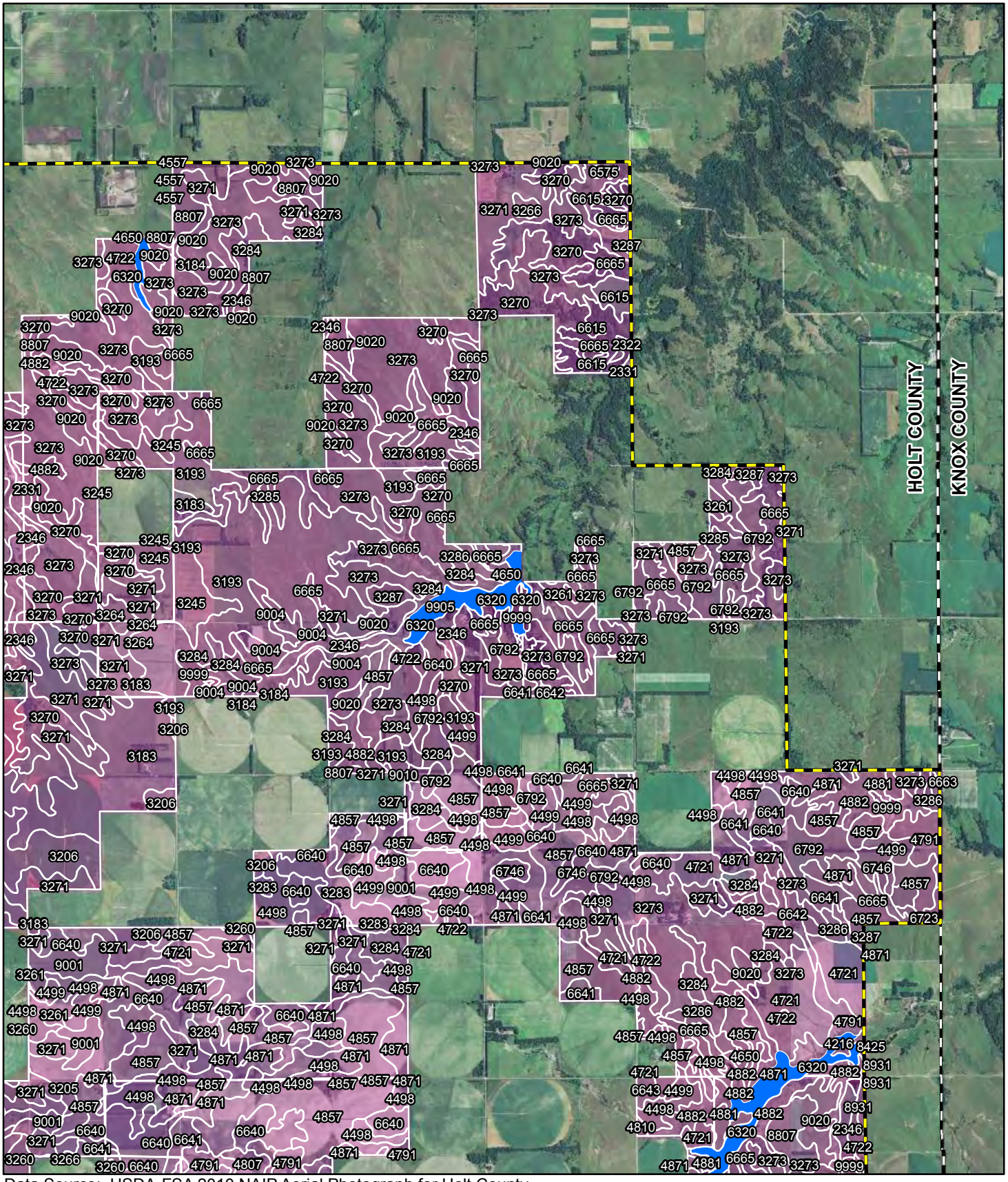
Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt County
NRCS SSURGO Digital Soils Data for Holt County
Project Footprint
County
Grande Prairie Parcels
3951 Soil Map Unit Symbol
Hydric Soils
N
0 0.5 1
Miles
1:55,000
OLSSON ASSOCIATES
GRANDE PRAIRIE WIND FARM
Grande Prairie Wind LLC
Holt County, NE
Soils (SSURGO) Map
Figure 4A



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt County
NRCS SSURGO Digital Soils Data for Holt County

Project Footprint
County
Grande Prairie Parcels
3951 Soil Map Unit Symbol
Hydric Soils

N

0 0.5 1 Miles

1:55,000

OLSSON ASSOCIATES

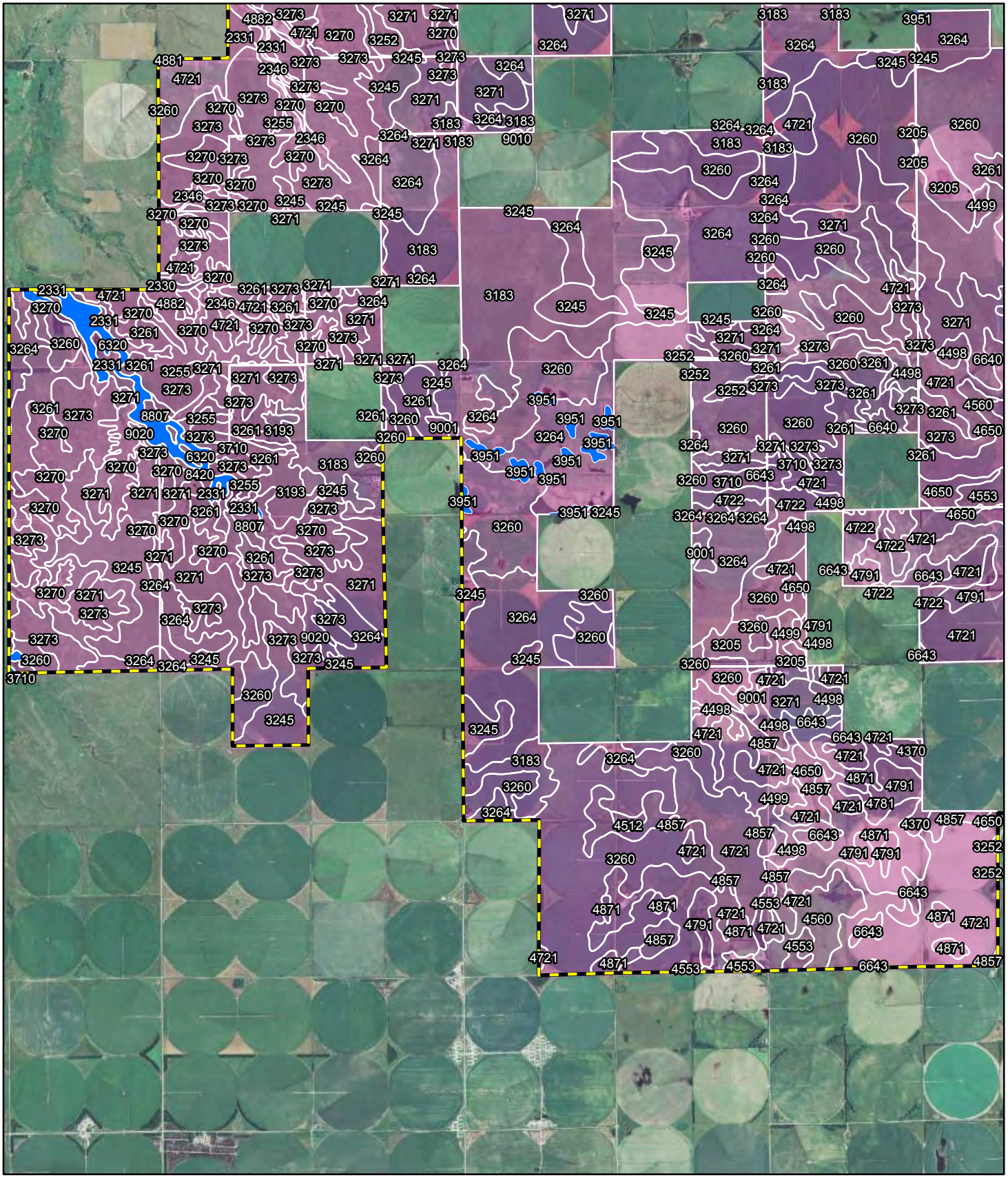
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Soils (SSURGO) Map

Figure 4B



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt County
NRCS SSURGO Digital Soils Data for Holt County

Project Footprint
County
Grande Prairie Parcels
3951 Soil Map Unit Symbol
Hydric Soils

N

0 0.5 1 Miles

1:55,000

OLSSON ASSOCIATES

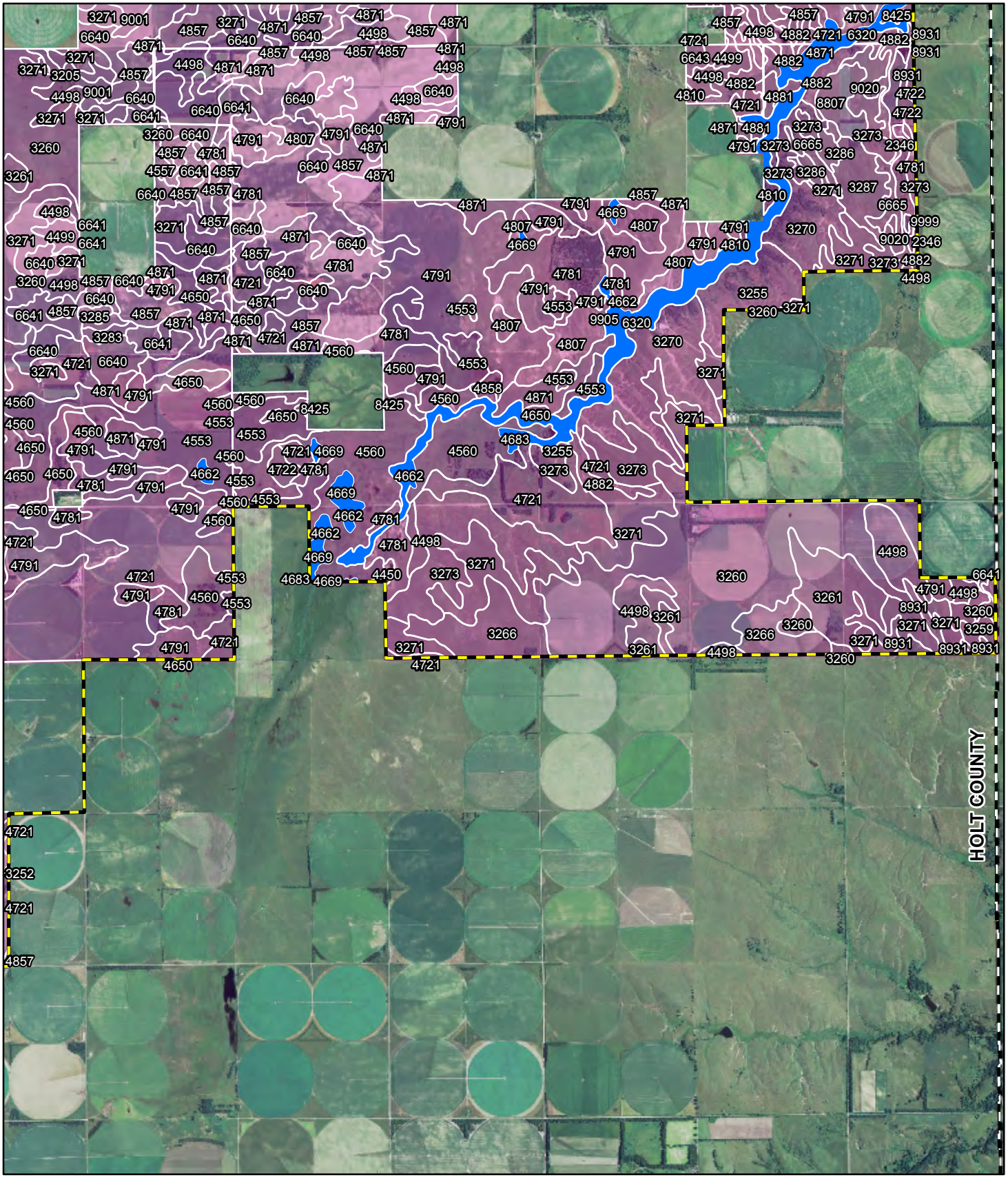
GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Soils (SSURGO) Map

Figure 4C

F:/Projects/012-0467/GIS/Maps.mxd



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt County
NRCS SSURGO Digital Soils Data for Holt County

Project Footprint
County
Grande Prairie Parcels
3951 Soil Map Unit Symbol
Hydric Soils

N

0 0.5 1 Miles

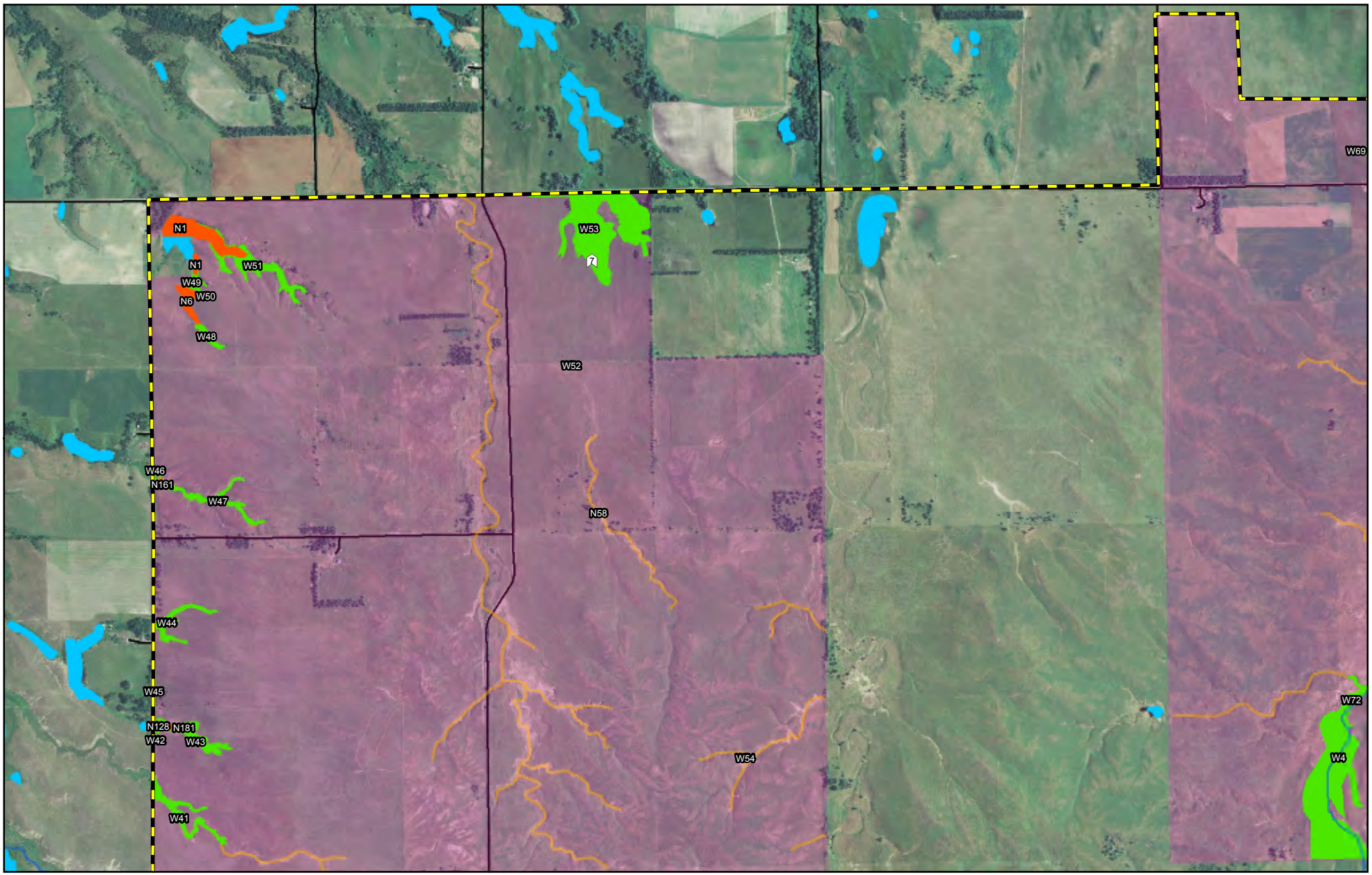
1:55,000

OLSSON ASSOCIATES

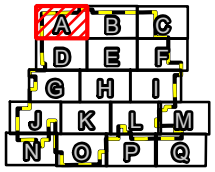
GRANDE PRAIRIE WIND FARM
Grande Prairie Wind LLC
Holt County, NE

Soils (SSURGO) Map
Figure 4D

F:/Projects/012-0467/GIS/Maps.mxd



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000

Feet

1:25,000

OLSSON ASSOCIATES

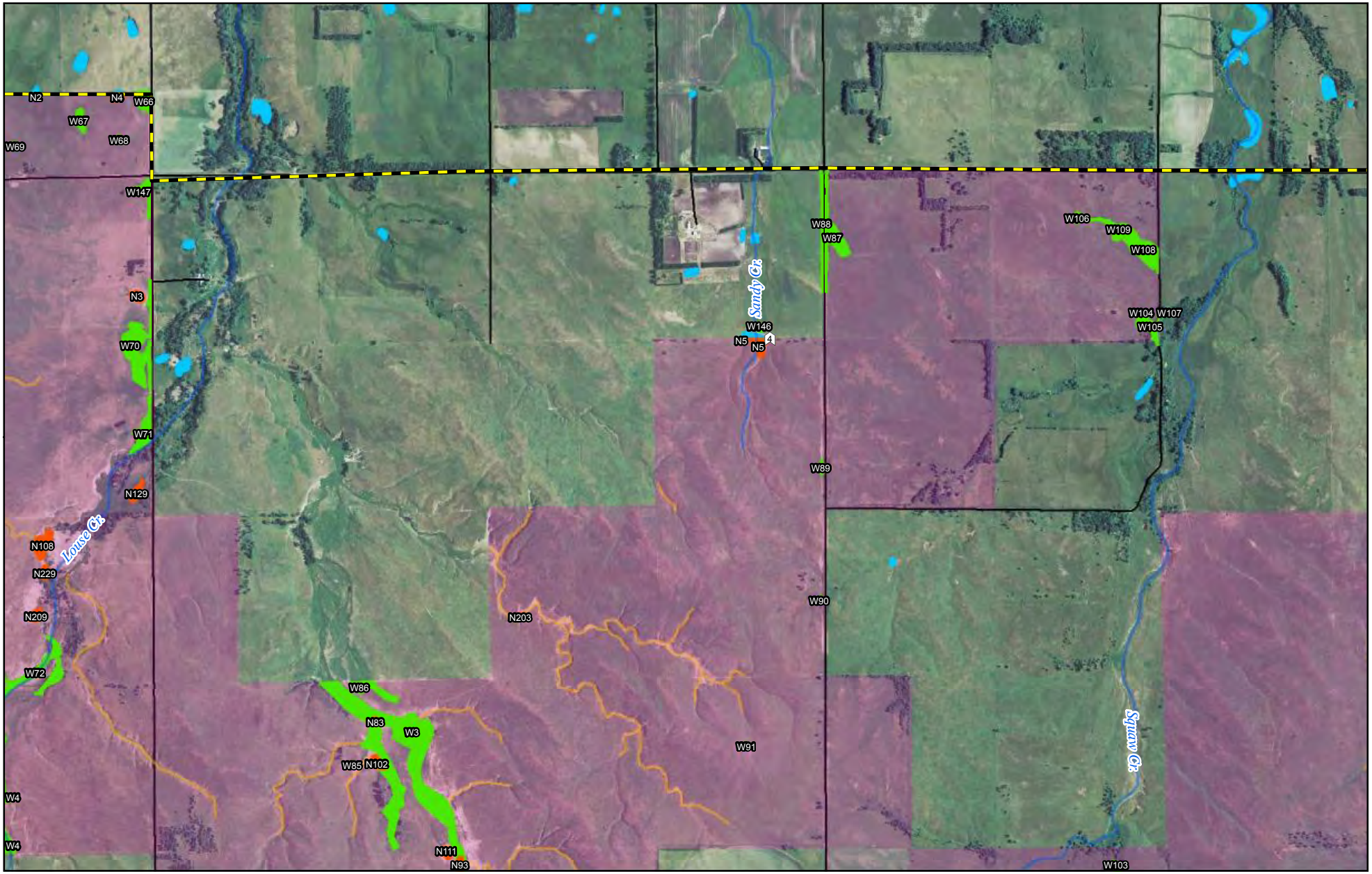
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

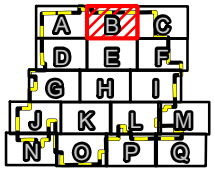
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5A



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

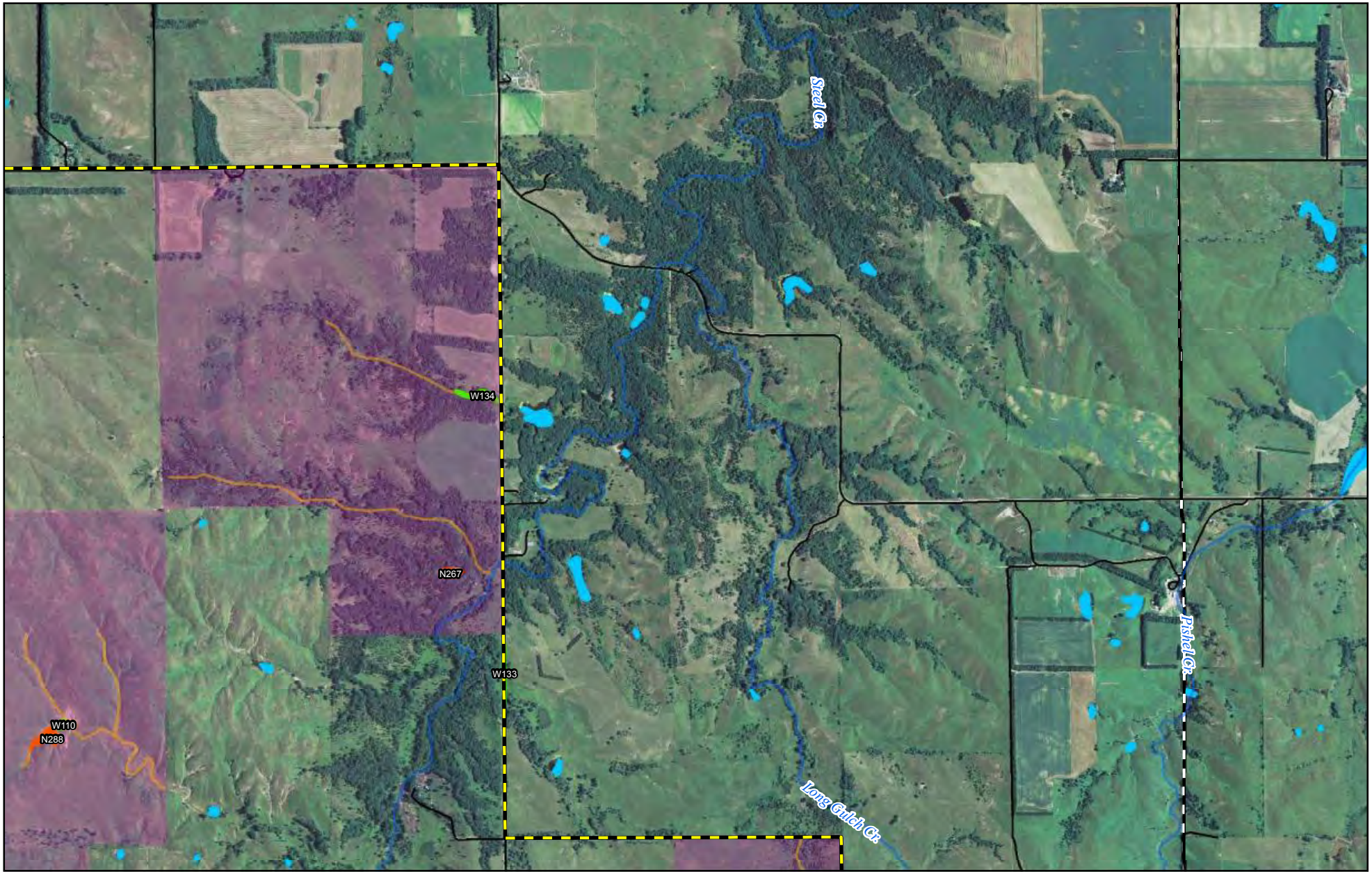
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5B



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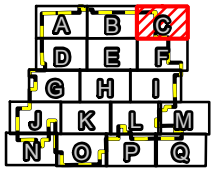
Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

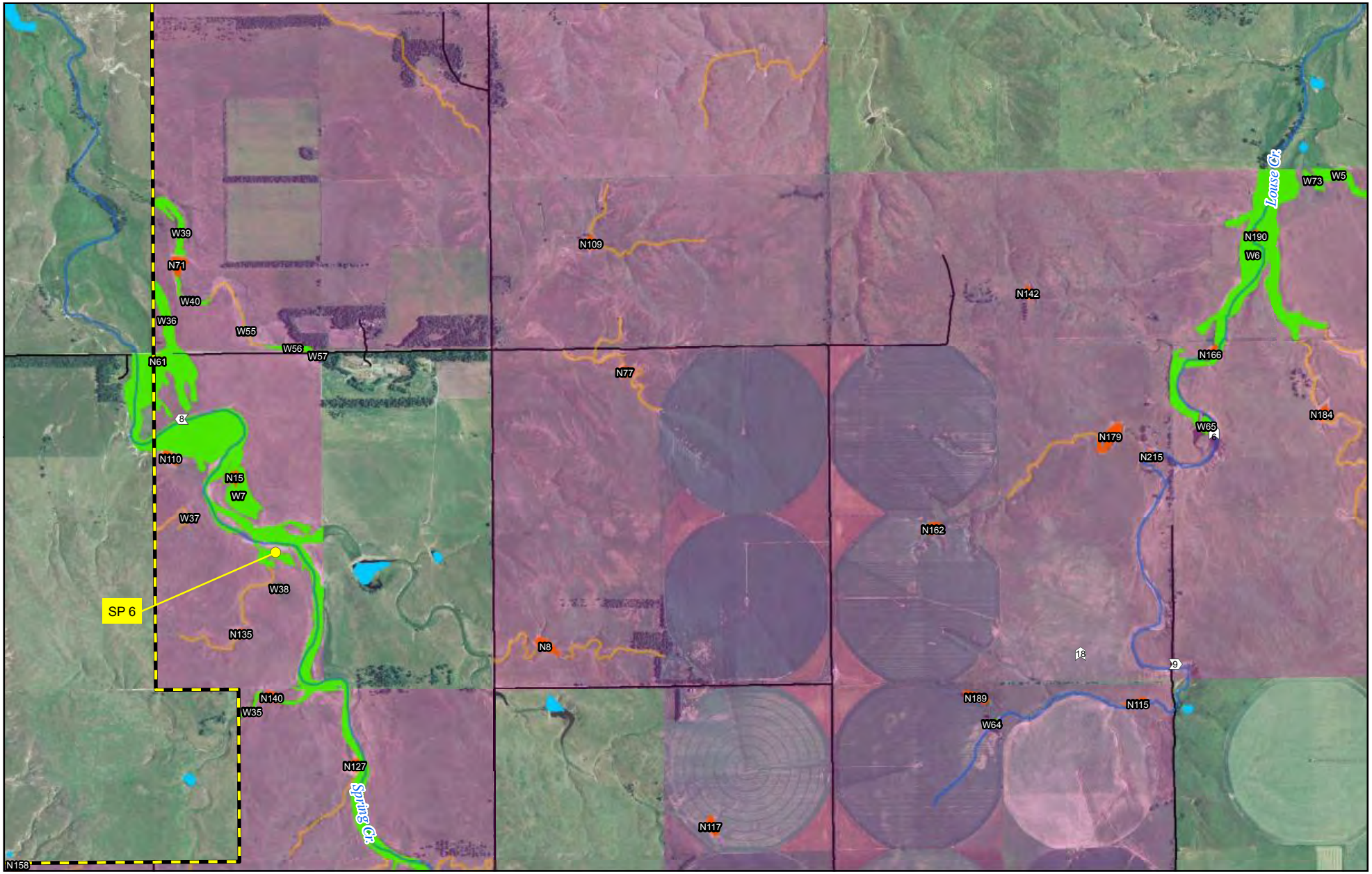
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5C



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams

A B C
D E F
G H I
J K L M
N O P Q

- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

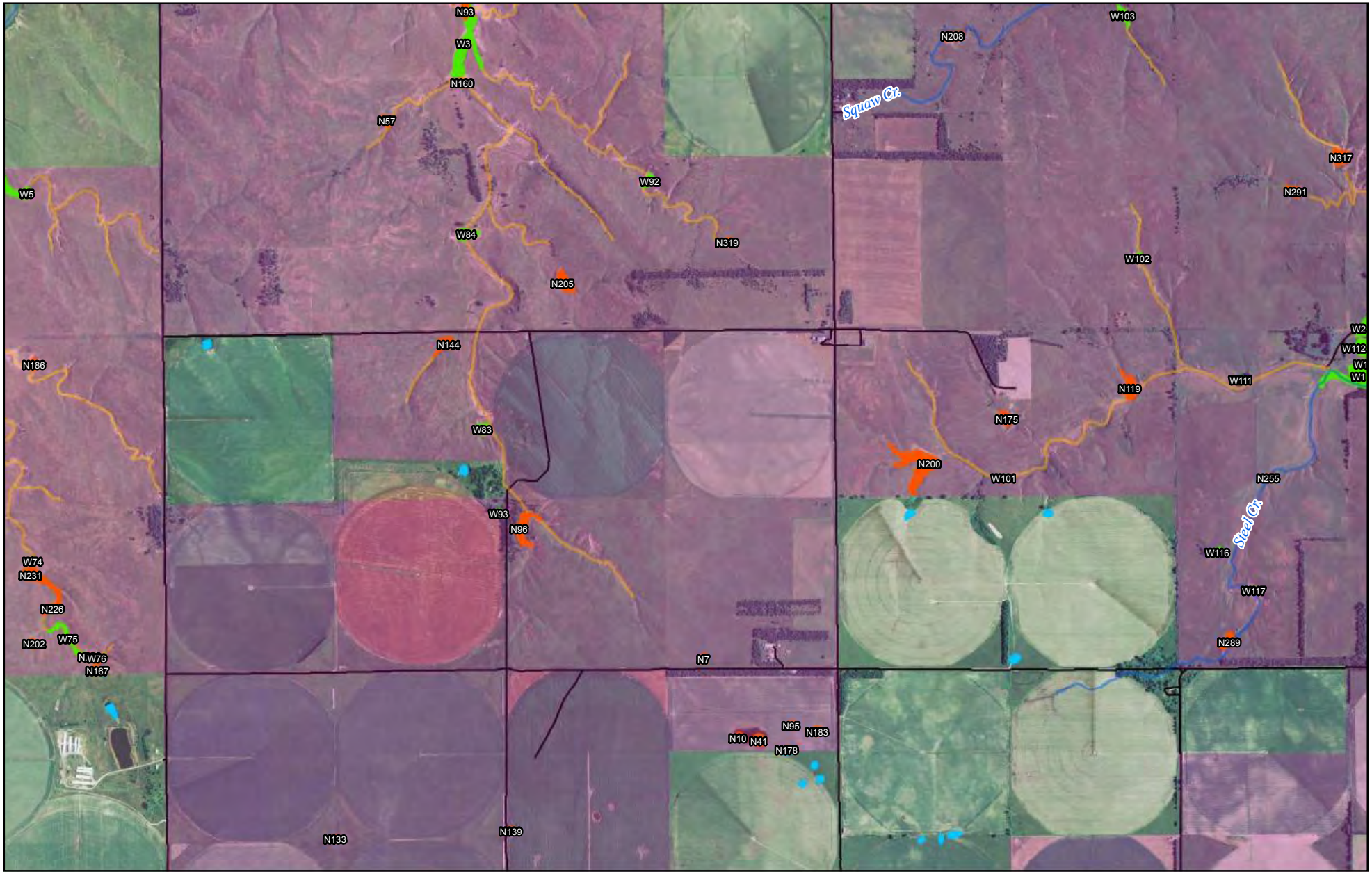
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

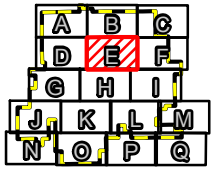
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5D



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

F:/Projects/012-0467/GIS/Maps.mxd

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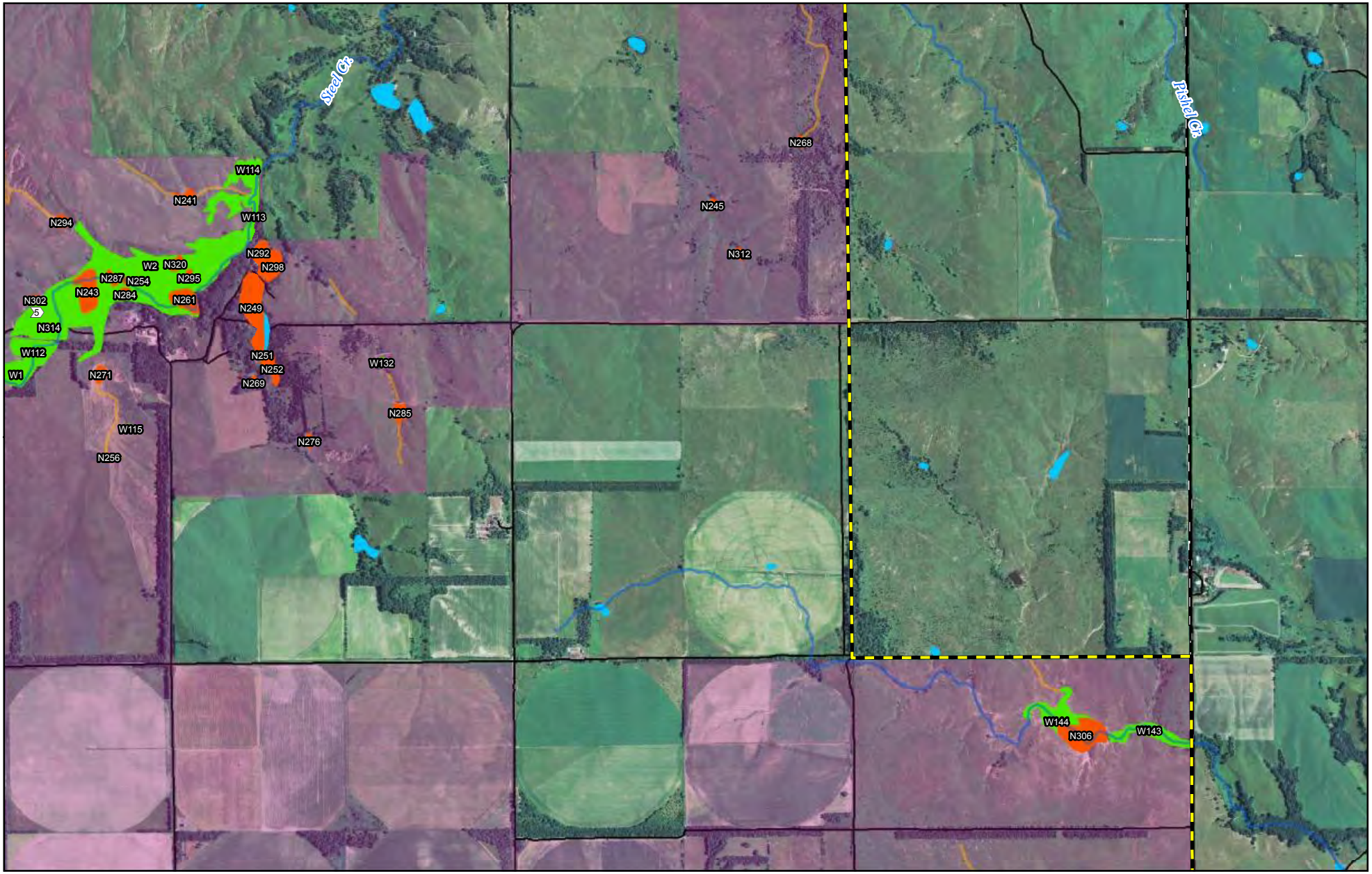
GRANDE PRAIRIE WIND FARM

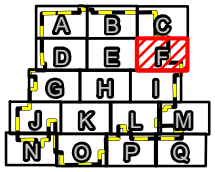
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5E



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

GRANDE PRAIRIE WIND FARM

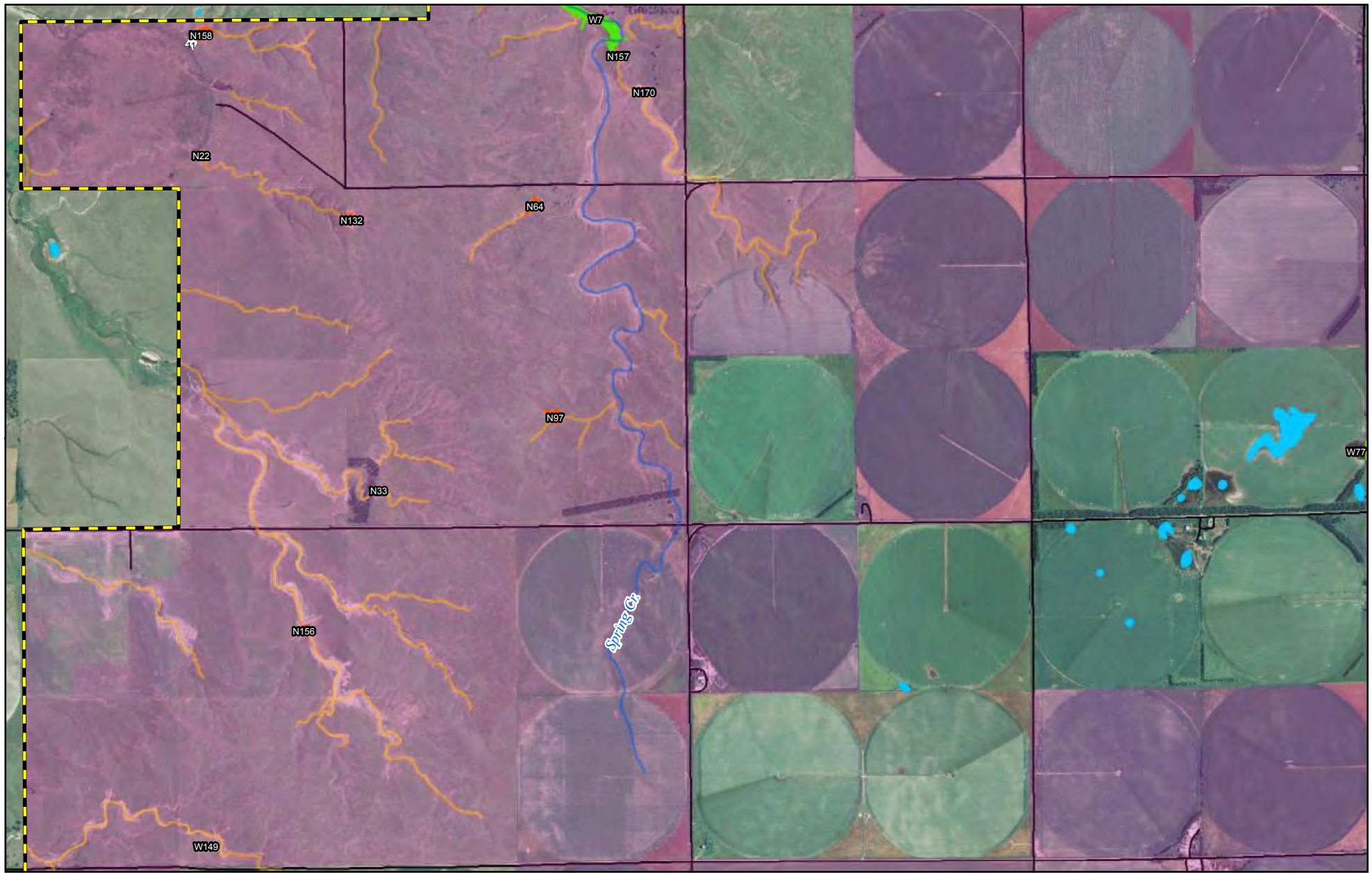
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

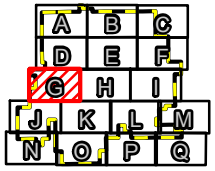
Figure 5F

OLSSON ASSOCIATES

F:/Projects/012-0467/GIS/Maps.mxd



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

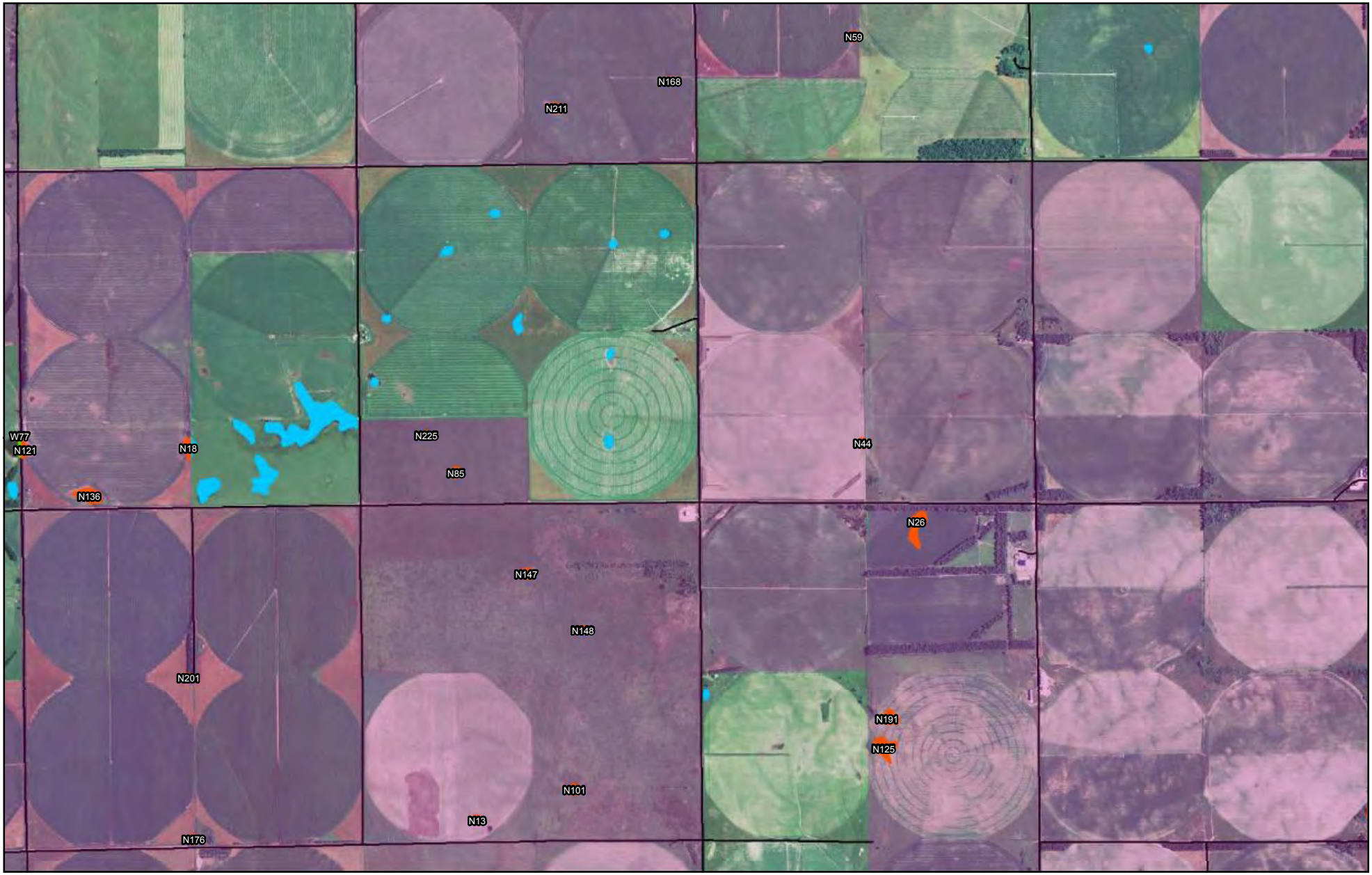
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

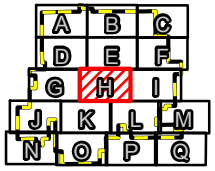
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5G



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

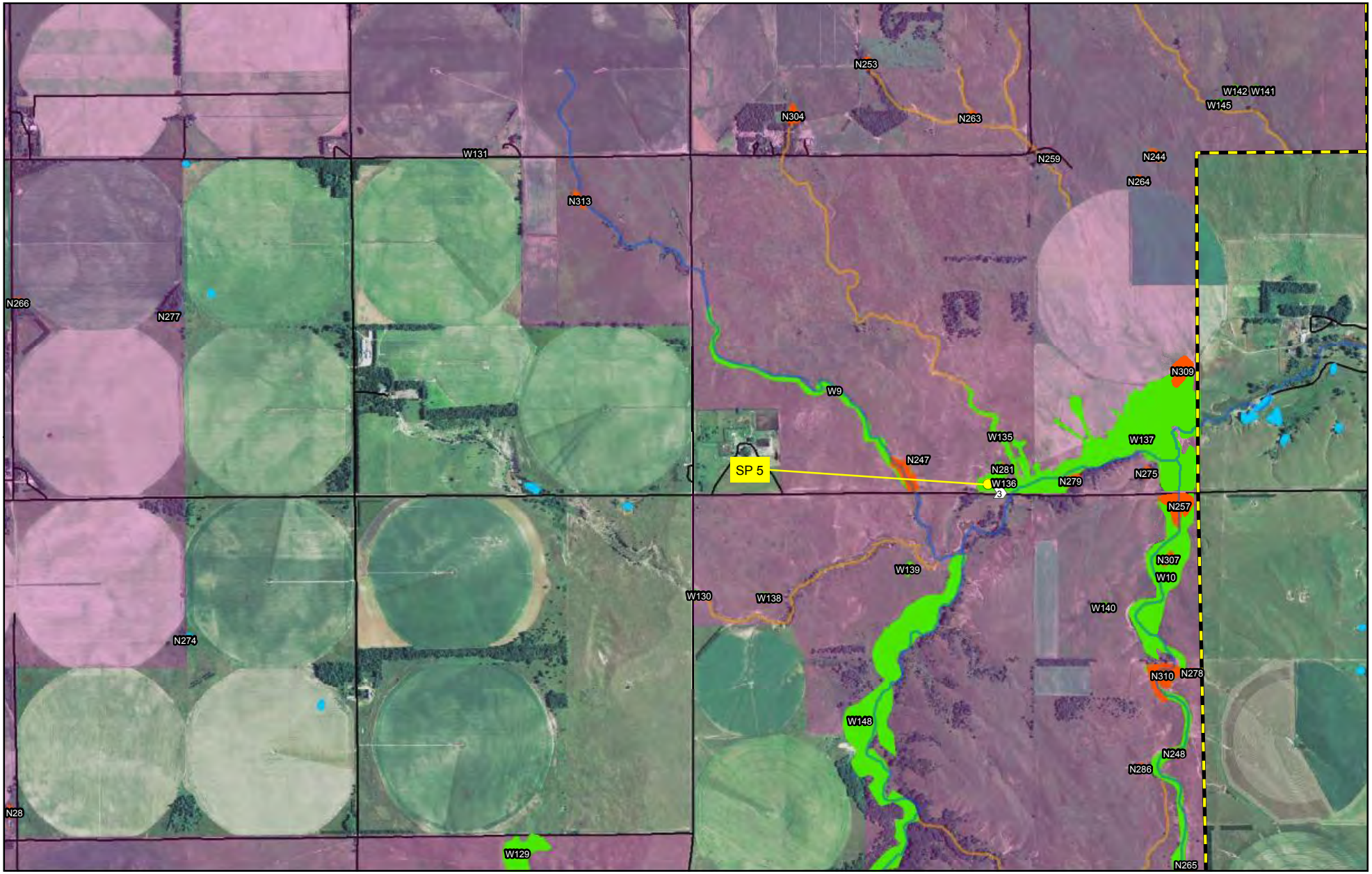
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

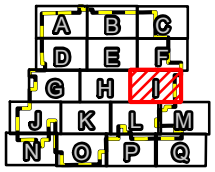
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5H



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

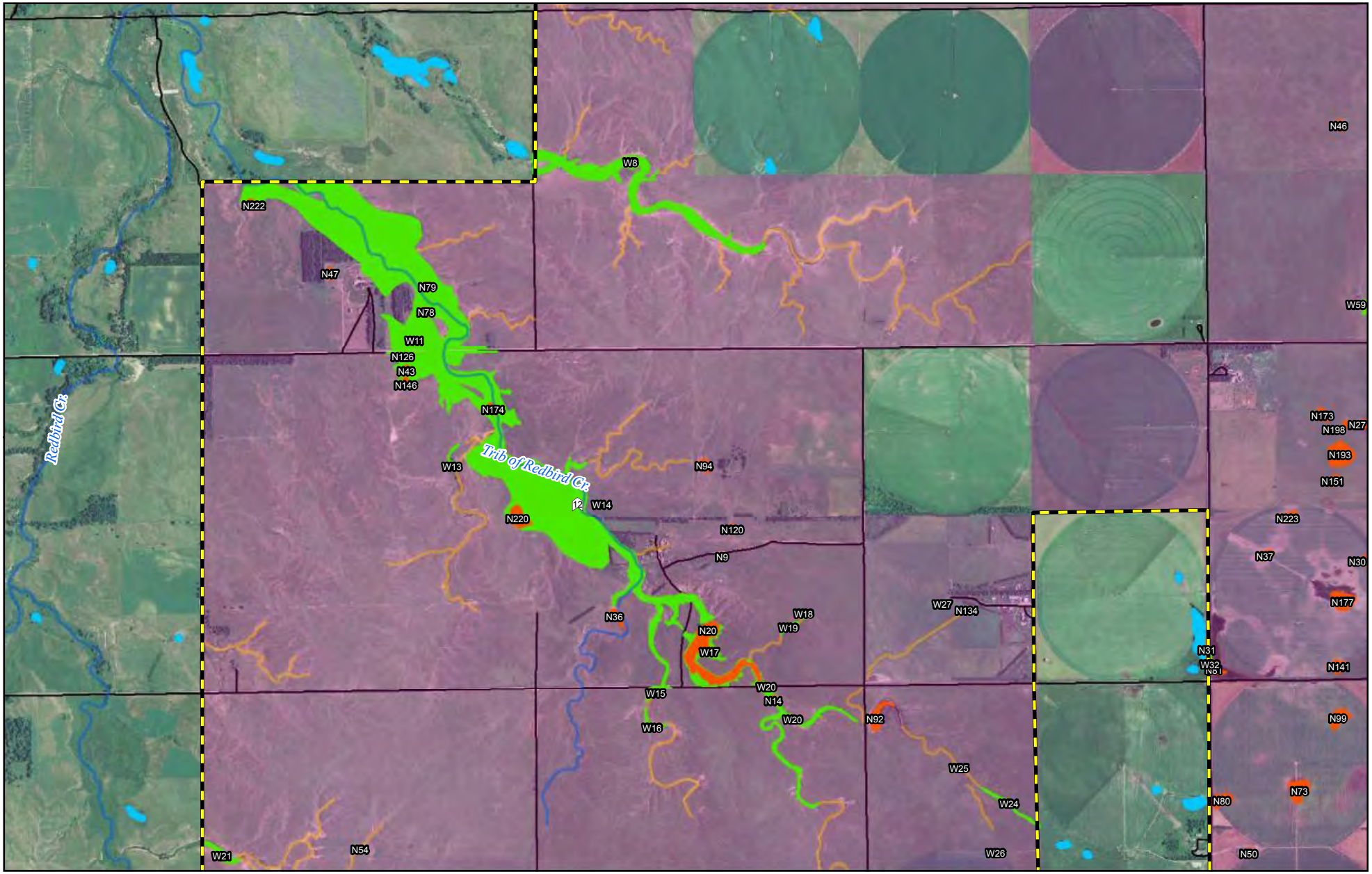
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

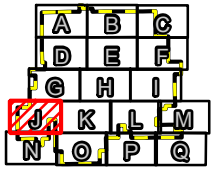
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5I



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

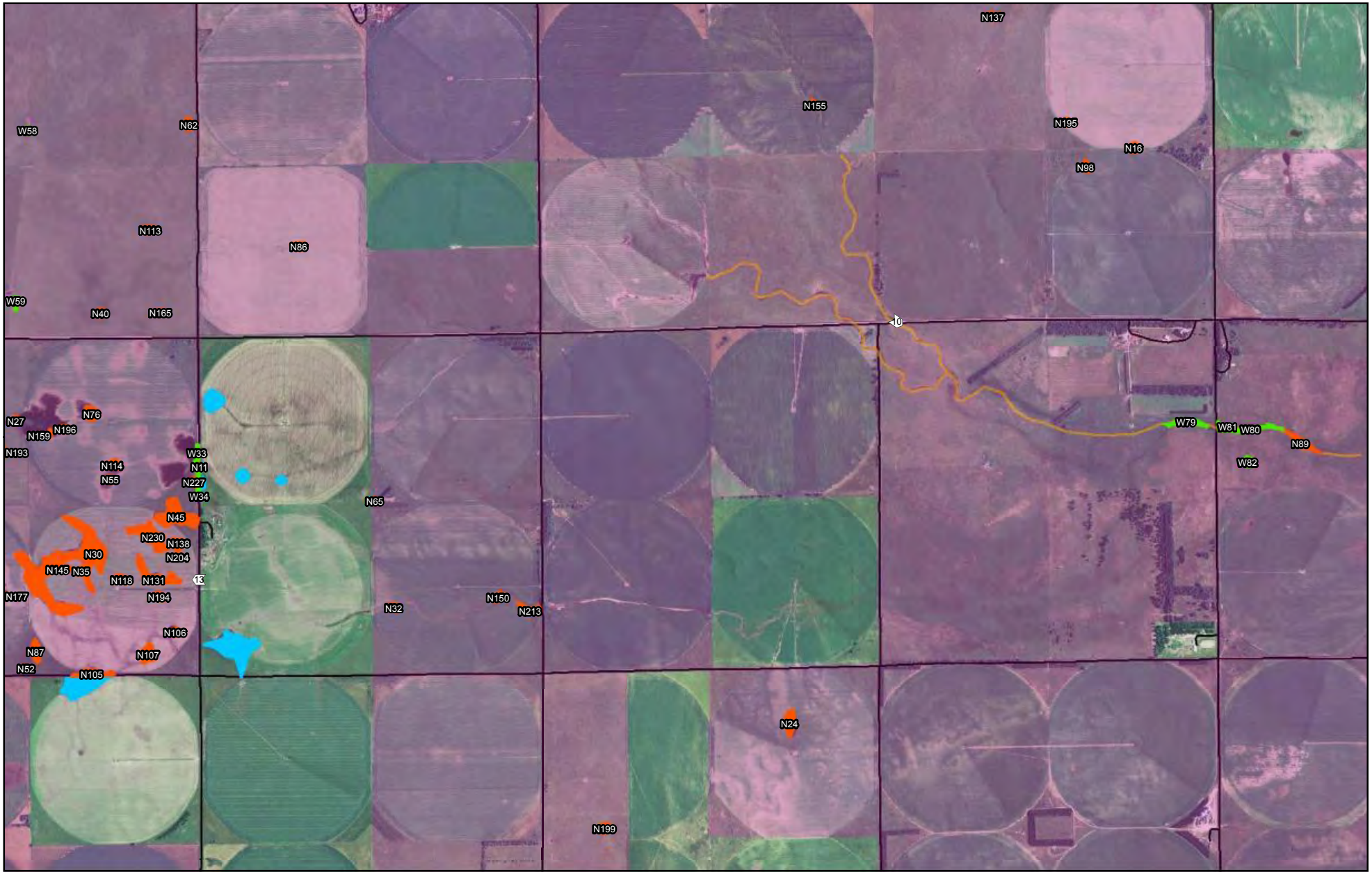
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

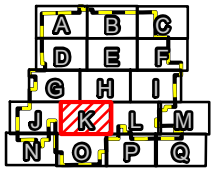
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5J



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

N

0 1,000 2,000 Feet

1:25,000

OLSSON ASSOCIATES

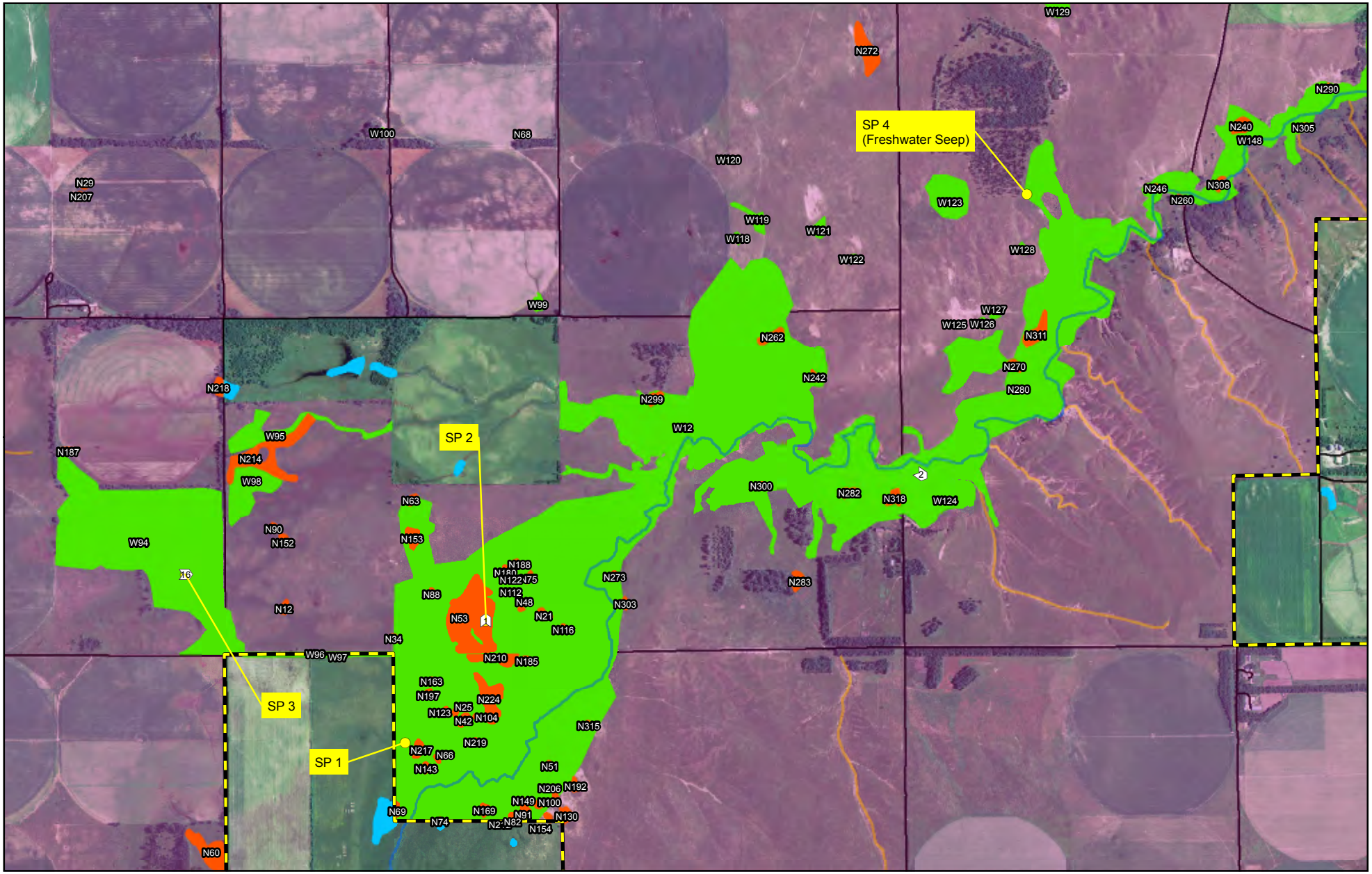
F:/Projects/012-0467/GIS/Maps.mxd

GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5K



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams

A B C
D E F
G H I
J K L M
N O P Q

Project Footprint
County
Grande Prairie Parcels
DNR Streams
Bed and Bank
Roads
Photo
Sample Point
Field Delineated Wetlands
NWI Adjusted Wetlands
NWI Wetlands

N

0 1,000 2,000
Feet
1:25,000

GRANDE PRAIRIE WIND FARM

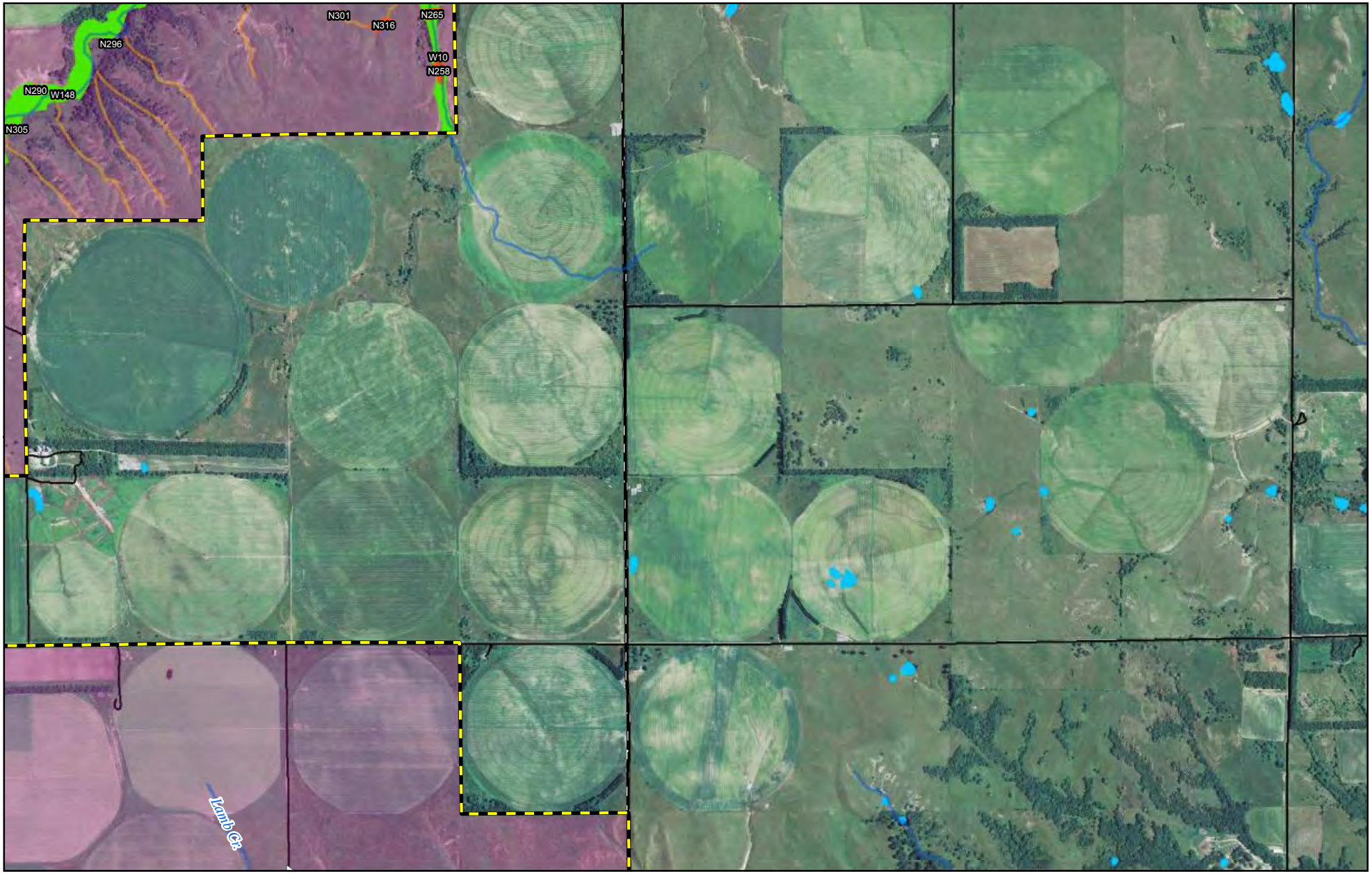
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

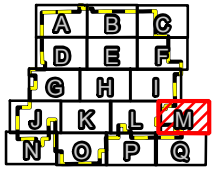
Figure 5L

OLSSON ASSOCIATES

F:/Projects/012-0467/GIS/Maps.mxd



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

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GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5M

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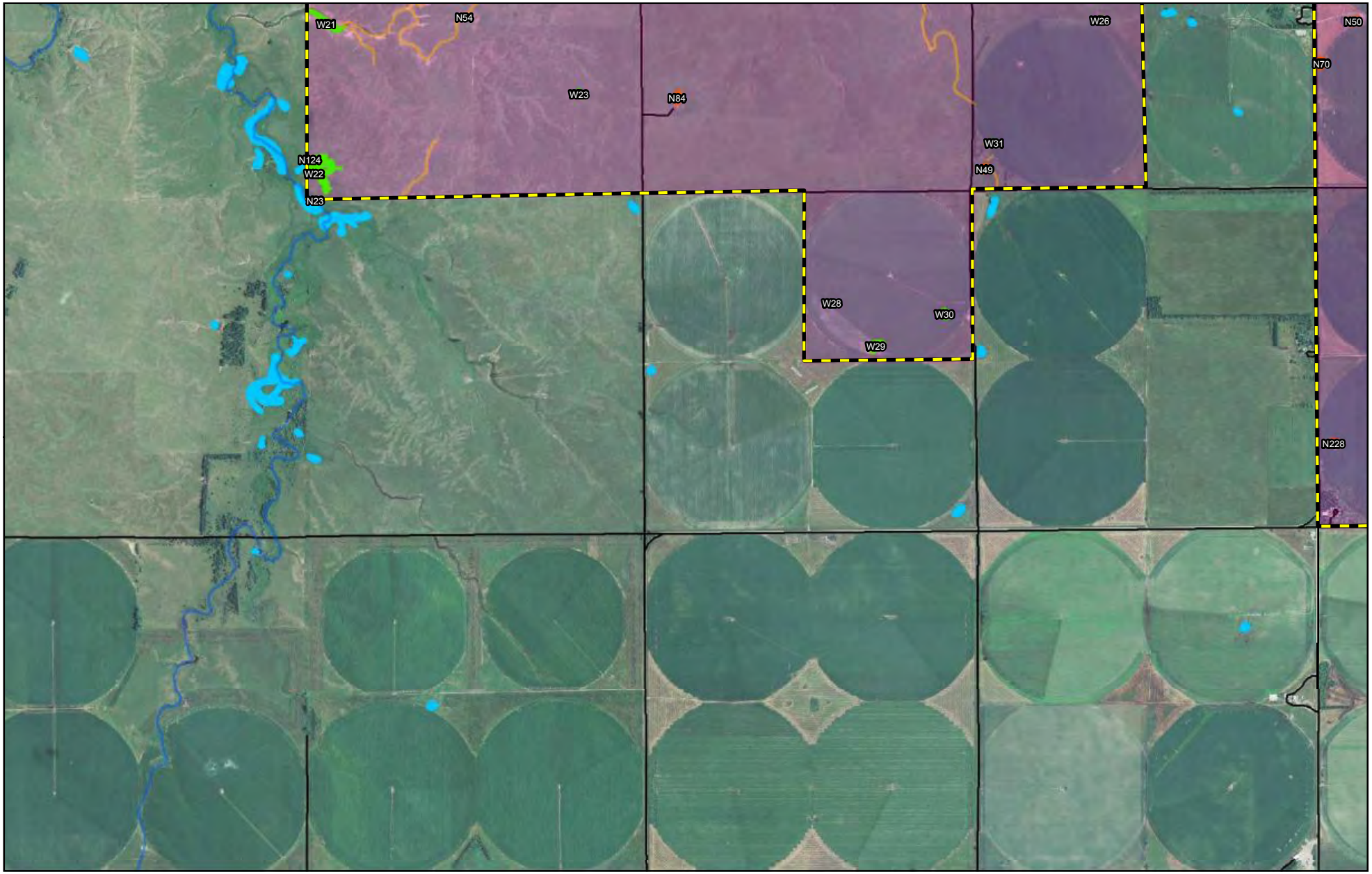
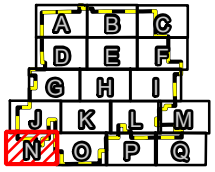


Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

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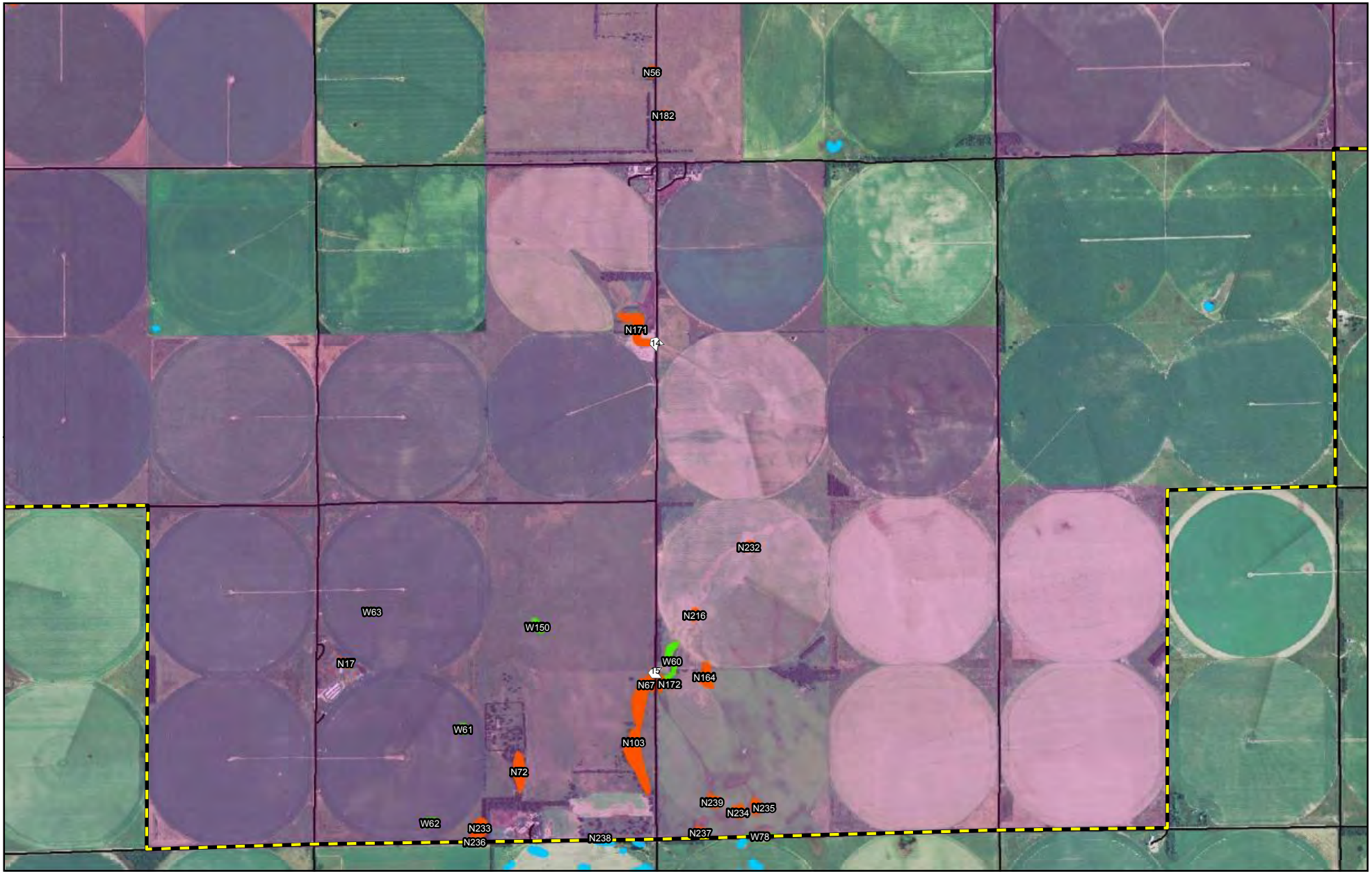
GRANDE PRAIRIE WIND FARM

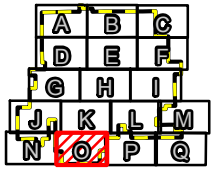
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5N



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

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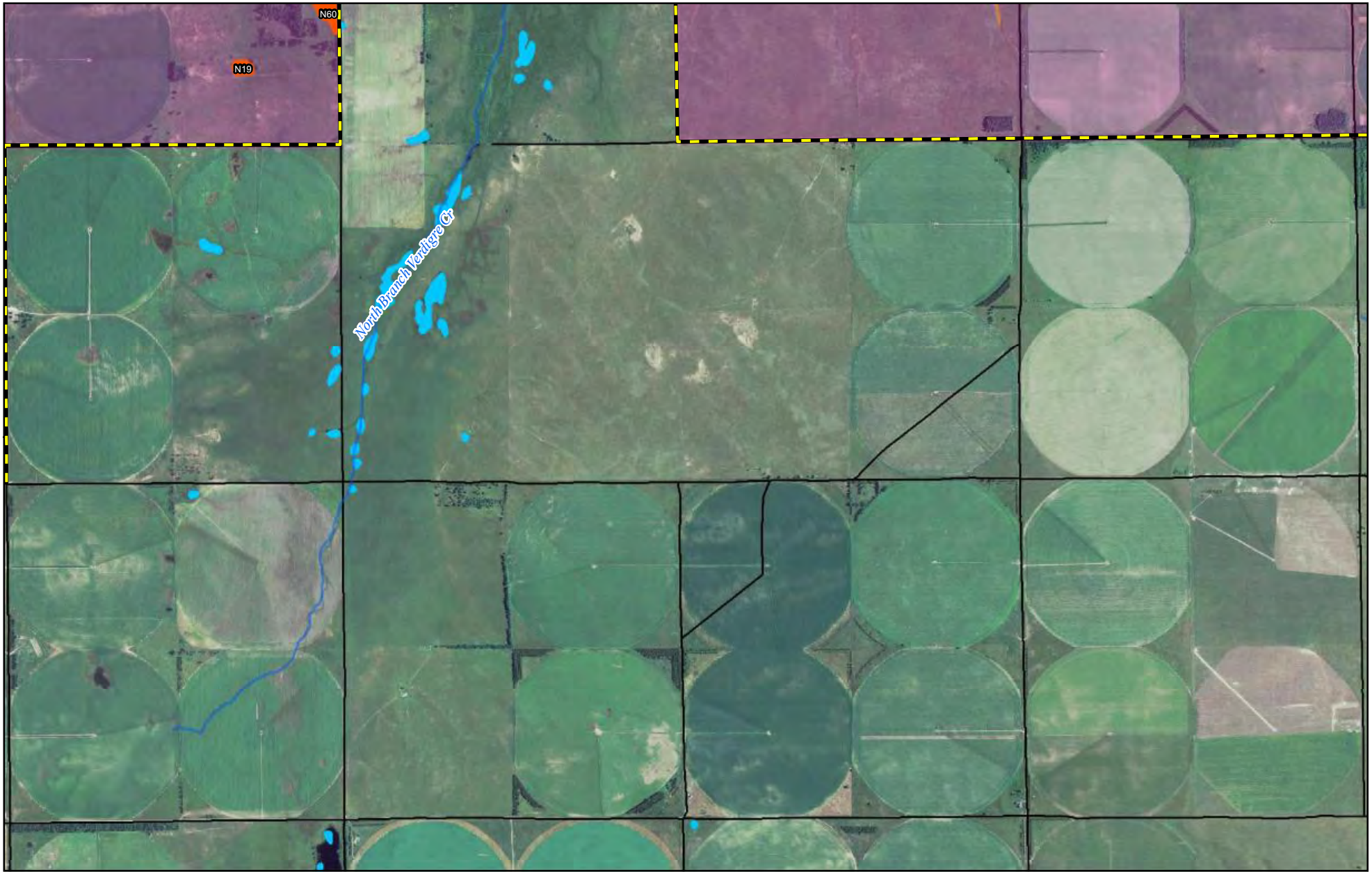
OLSSON ASSOCIATES

GRANDE PRAIRIE WIND FARM

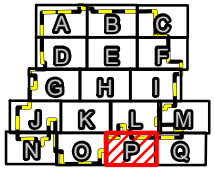
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5O



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

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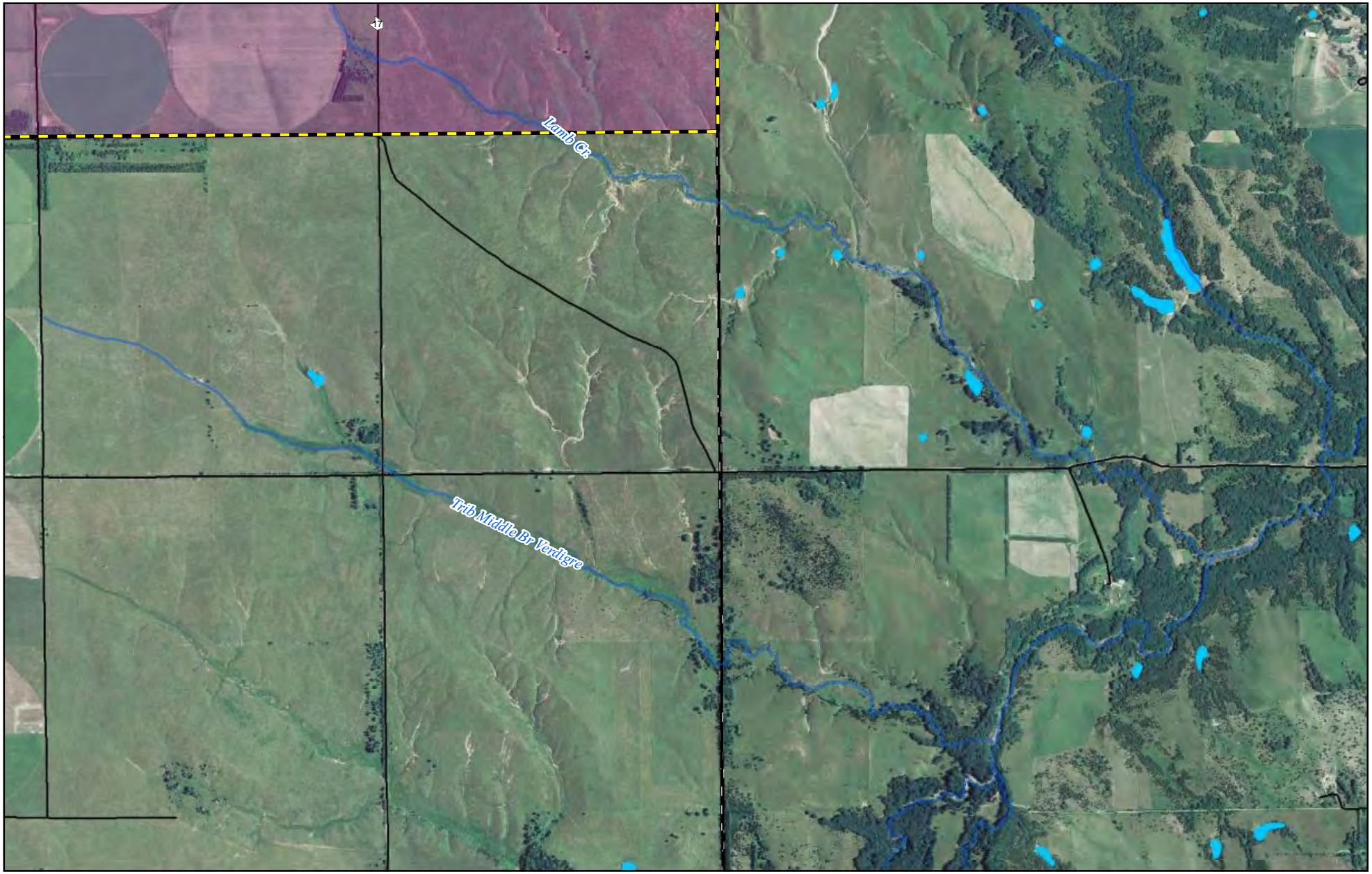
GRANDE PRAIRIE WIND FARM

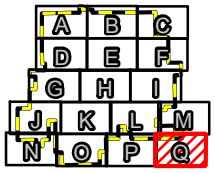
Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5P



Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt and Knox Counties / USFWS National Wetlands Inventory
DNR Hydrologic Unit Streams



- Project Footprint
- County
- Grande Prairie Parcels
- DNR Streams
- Bed and Bank
- Roads
- Photo
- Sample Point
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands

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GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Wetland Delineation Map

Figure 5Q

OLSSON ASSOCIATES

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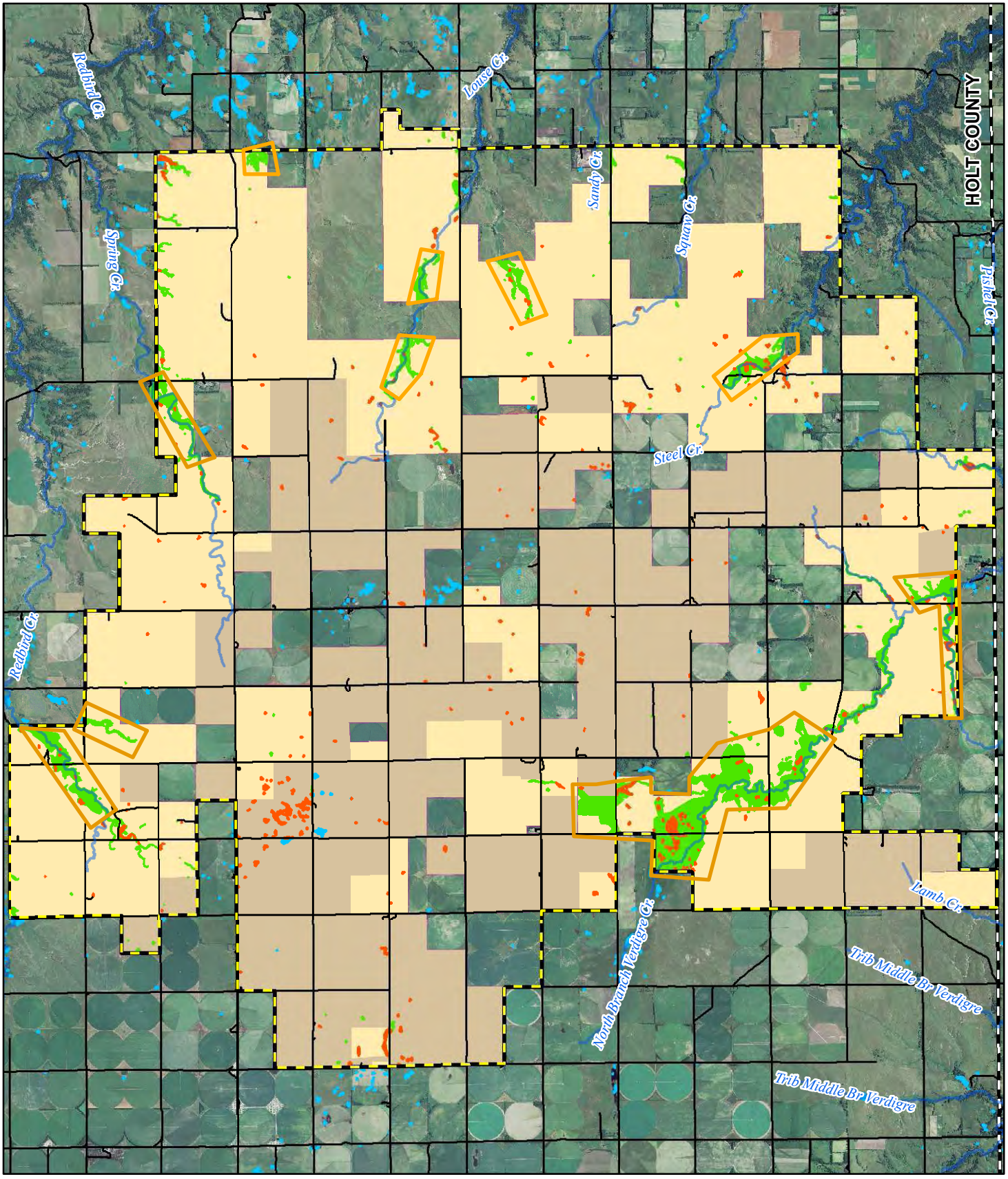

F:/Projects/012-0467/GIS/Maps.mxd

Data Source: USDA-FSA 2010 NAIP Aerial Photograph for Holt County
DNR Hydrologic Unit Streams

- Project Footprint
- County
- Farmland on GP Parcels
- Grasslands on GP Parcels
- Field Delineated Wetlands
- NWI Adjusted Wetlands
- NWI Wetlands
- Primary Orchid Survey Area
- DNR Streams
- Roads

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GRANDE PRAIRIE WIND FARM

Grande Prairie Wind LLC
Holt County, NE

Habitat Map

Figure 6

Appendix B

Soil Survey

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
2100:						
Boel fine sandy loam, occasionally flooded						
	98	Boel	Series	0	1	2
2322:						
Inavale fine sand, channeled, frequently flooded						
	90	Inavale, channeled, frequently flooded	Series	0	1	2
2330:						
Inavale fine sand, rarely flooded						
	100	Inavale	Taxadjunct	0	1	2
2331:						
Inavale loamy fine sand, rarely flooded						
	100	Inavale	Taxadjunct	0	1	2
2346:						
Inavale sand, channeled, frequently flooded						
	95	Inavale, channeled, frequently flooded	Taxadjunct	0	1	2
3105:						
Nimbro silt loam, 0 to 2 percent slopes						
	100	Nimbro	Taxadjunct	0	1	2
3183:						
Jansen loam, 0 to 2 percent slopes						
	98	Jansen	Series	0	1	2
3184:						
Jansen loam, 2 to 6 percent slopes						
	100	Jansen	Series	2	4	6
3193:						
Jansen-Meadin loams, 2 to 6 percent slopes						
	70	Jansen	Series	2	4	6
	30	Meadin	Series	3	5	6
3205:						
Josburg fine sandy loam, 0 to 2 percent slopes						
	100	Josburg	Series	0	0	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
3206:						
Josburg loam, 0 to 2 percent slopes						
	98	Josburg	Series	0	0	2
3220:						
Labu silty clay, 2 to 6 percent slopes						
	100	Labu	Series	2	4	6
3221:						
Labu silty clay, 6 to 11 percent slopes						
	100	Labu	Series	6	9	11
3225:						
Labu-Sansarc silty clays, 11 to 30 percent slopes						
	65	Labu	Series	11	21	30
	35	Sansarc	Series	11	21	30
3245:						
Meadin loam, 0 to 2 percent slopes						
	100	Meadin	Series	0	2	3
3252:						
Meadin sandy loam, 0 to 2 percent slopes						
	100	Meadin	Series	0	2	3
3255:						
Meadin sandy loam, 2 to 30 percent slopes						
	100	Meadin	Series	3	17	30
3259:						
Meadin-O'Neill complex, 2 to 30 percent slopes						
	60	Meadin	Series	3	17	30
	40	O'Neill	Series	3	17	30
3260:						
O'Neill fine sandy loam, 0 to 2 percent slopes						
	100	O'Neill	Series	0	1	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
3261:						
O'Neill fine sandy loam, 2 to 6 percent slopes						
	100	O'Neill	Series	2	4	6
3264:						
O'Neill loam, 0 to 2 percent slopes						
	100	O'Neill	Series	0	1	2
3266:						
O'Neill loamy sand, 0 to 2 percent slopes						
	100	O'Neill	Series	0	2	3
3270:						
O'Neill-Meadin fine sandy loams, 11 to 30 percent slopes						
	55	O'Neill	Series	11	21	30
	45	Meadin	Series	11	21	30
3271:						
O'Neill-Meadin fine sandy loams, 2 to 6 percent slopes						
	70	O'Neill	Series	2	4	6
	30	Meadin	Series	2	4	6
3273:						
O'Neill-Meadin fine sandy loams, 6 to 11 percent slopes						
	65	O'Neill	Series	6	9	11
	35	Meadin	Series	6	9	11
3283:						
Paka fine sandy loam, 0 to 2 percent slopes						
	100	Paka	Taxadjunct	0	1	2
3284:						
Paka fine sandy loam, 2 to 6 percent slopes						
	100	Paka	Taxadjunct	2	4	6
3285:						
Paka loam, 0 to 2 percent slopes						
	100	Paka	Taxadjunct	0	0	1

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
3286:						
Paka loam, 2 to 6 percent slopes						
	100	Paka	Taxadjunct	2	4	6
3287:						
Paka loam, 6 to 11 percent slopes, eroded						
	100	Paka	Taxadjunct	6	9	11
3340:						
Wewela fine sandy loam, 0 to 2 percent slopes						
	97	Wewela	Series	0	1	2
3341:						
Wewela fine sandy loam, 2 to 6 percent slopes						
	100	Wewela	Series	2	4	6
3710:						
Cass fine sandy loam, rarely flooded						
	98	Cass	Series	0	1	2
3951:						
Fillmore silt loam, occasionally ponded						
	99	Fillmore	Series	0	1	2
4215:						
Blackloup loam, rarely flooded						
	82	Blackloup, rarely flooded	Series	0	0	1
4216:						
Blackloup loam, occasionally flooded						
	77	Blackloup, occasionally flooded	Series	0	0	1
4243:						
Ord loam, rarely flooded						
	95	Ord	Series	0	1	2
4352:						
Elsmere fine sandy loam, rarely flooded						
	95	Elsmere	Series	0	1	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
4370:						
Libory loamy fine sand, 0 to 3 percent slopes						
	99	Libory	Series	0	2	3
4450:						
Blown-out land-Valentine complex, 0 to 60 percent slopes						
	60	Blownout land	Miscellaneous area	0	28	50
	35	Valentine	Series	24	42	60
4498:						
Dunday loamy sand, 0 to 3 percent slopes						
	99	Dunday	Series	0	2	3
4499:						
Dunday loamy sand, 3 to 6 percent slopes						
	100	Dunday	Series	3	5	6
4512:						
Dunn loamy sand, 0 to 3 percent slopes						
	99	Dunn	Series	0	2	3
4553:						
Elsmere loamy fine sand, 0 to 3 percent slopes						
	98	Elsmere	Series	0	1	2
4557:						
Elsmere loamy fine sand, clayey substratum, 0 to 3 percent slopes						
	100	Elsmere	Series	0	1	2
4560:						
Elsmere-Ipage loamy fine sands, 0 to 3 percent slopes						
	55	Elsmere	Series	0	2	3
	43	Ipage	Series	0	2	3
4650:						
Ipage loamy sand, 0 to 3 percent slopes						
	98	Ipage	Series	0	2	3

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
4662:						
Loup fine sandy loam, 0 to 1 percent slopes						
	100	Loup	Series	0	1	2
4669:						
Loup fine sandy loam, frequently ponded						
	100	Loup	Series	0	1	2
4683:						
Marlake fine sandy loam, frequently ponded						
	100	Marlake, frequently ponded	Series	0	1	2
4721:						
Pivot loamy sand, 0 to 3 percent slopes						
	98	Pivot	Series	0	2	3
4722:						
Pivot loamy sand, 3 to 9 percent slopes						
	100	Pivot	Series	3	5	6
4781:						
Valentine fine sand, 0 to 3 percent slopes						
	95	Valentine	Series	0	2	3
4791:						
Valentine fine sand, 3 to 9 percent slopes						
	95	Valentine	Series	3	6	9
4796:						
Valentine fine sand, 9 to 24 percent slopes						
	100	Valentine	Series	9	17	24
4807:						
Valentine fine sand, rolling						
	98	Valentine	Series	9	17	24
4810:						
Valentine fine sand, rolling and hilly						
	60	Valentine, rolling	Series	9	17	24
	40	Valentine, hilly	Series	24	42	60

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
4857:						
Valentine-Dunday loamy fine sands, 3 to 9 percent slopes						
	70	Valentine	Series	3	6	9
	30	Dunday	Series	3	6	9
4858:						
Valentine-Els complex, 0 to 9 percent slopes						
	60	Valentine	Series	3	6	9
	30	Els	Series	0	1	2
4871:						
Valentine-Dunday loamy fine sands, 0 to 3 percent slopes						
	70	Valentine	Series	0	2	3
	30	Dunday	Series	0	2	3
4881:						
Valentine-Simeon sands, 3 to 9 percent slopes						
	55	Valentine	Series	3	6	9
	45	Simeon	Series	3	5	6
4882:						
Valentine-Simeon sands, 9 to 30 percent slopes, eroded						
	55	Valentine	Series	9	20	30
	45	Simeon	Series	9	20	30
6320:						
Barney-Boel-Calamus complex, channeled						
	50	Barney, channeled, frequently flooded	Series	0	0	1
	18	Boel, channeled, occasionally flooded	Series	0	1	2
	17	Calamus	Series	0	1	2
6575:						
Trent silt loam, 0 to 2 percent slopes						
	98	Trent	Series	0	1	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
6615:						
Bazile silt loam, 2 to 6 percent slopes						
	100	Bazile	Series	2	4	6
6640:						
Boelus loamy sand, 0 to 3 percent slopes						
	99	Boelus	Taxadjunct	0	2	3
6641:						
Boelus loamy sand, 3 to 6 percent slopes						
	100	Boelus	Taxadjunct	3	5	6
6642:						
Boelus loamy sand, 6 to 11 percent slopes						
	100	Boelus	Taxadjunct	6	9	11
6643:						
Boelus loamy sand, gravelly substratum, 0 to 3 percent slopes						
	100	Boelus	Taxadjunct	0	2	3
6663:						
Brunswick-Paka complex, 17 to 30 percent slopes						
	60	Brunswick	Series	15	23	30
	40	Paka	Series	15	23	30
6665:						
Brunswick-Pivot complex, 11 to 30 percent slopes						
	55	Brunswick	Series	11	20	30
	45	Pivot	Series	9	15	20
6723:						
Thurman fine sand, 0 to 2 percent slopes						
	100	Thurman	Series	0	2	3
6746:						
Nora silt loam, 0 to 2 percent slopes						
	100	Nora	Series	0	1	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
6753:						
Nora silt loam, 2 to 6 percent slopes						
	100	Nora	Series	2	4	6
6765:						
Nora silty clay loam, 2 to 6 percent slopes						
	100	Nora	Series	2	4	6
6792:						
Loretto loam, 2 to 6 percent slopes						
	100	Loretto	Series	2	4	6
8420:						
Boel loamy fine sand, occasionally flooded						
	95	Boel	Series	0	1	2
8425:						
Boel-Inavale complex, channeled, frequently flooded						
	55	Boel, channeled, frequently flooded	Series	0	1	2
	35	Inavale, channeled, frequently flooded	Taxadjunct	0	1	2
8807:						
Anselmo-O'Neill sandy loams, 0 to 3 percent slopes						
	55	Anselmo	Series	0	0	1
	45	O'Neill	Series	0	1	2
8929:						
Simeon sand, 0 to 3 percent slopes						
	100	Simeon	Series	0	2	3
8931:						
Simeon sand, 6 to 30 percent slopes, eroded						
	100	Simeon	Series	6	18	30
9001:						
Anselmo fine sandy loam, 0 to 1 percent slopes						
	100	Anselmo	Series	0	1	2

Component Legend

Holt County, Nebraska

Map unit symbol and name	Pct. of map unit	Component name	Component kind	Pct. slope		
				Low	RV	High
9004:						
Anselmo fine sandy loam, 3 to 6 percent slopes						
	100	Anselmo	Series	2	4	6
9010:						
Anselmo loam, 0 to 1 percent slopes						
	100	Anselmo	Series	0	0	1
9020:						
Anselmo-O'Neill sandy loams, 3 to 6 percent slopes						
	55	Anselmo	Series	2	4	6
	45	O'Neill	Series	2	4	6
9905:						
Fluvaquents, sandy-Fluvaquents, loamy complex, frequently flooded						
	68	Fluvaquents, sandy, frequently flooded	Taxon above family	0	0	1
	25	Fluvaquents, loamy, frequently flooded	Taxon above family	0	0	1
9983:						
Gravel pit						
	100	Pits	Miscellaneous area	0	15	30
9999:						
Water						
	100	Water	Miscellaneous area	---	---	---

Hydric Soils

Holt County, Nebraska

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
2100:					
Boel fine sandy loam, occasionally flooded	Loup	2	Swales	Yes	2B3
2322:					
Inavale fine sand, channeled, frequently flooded	Barney, frequently flooded	6	Flood plains	Yes	2B3
2346:					
Inavale sand, channeled, frequently flooded	Tryon	3	Swales	Yes	2B2, 3
	Marlake, frequently ponded	2	Depressions	Yes	2B2, 3
3183:					
Jansen loam, 0 to 2 percent slopes	Fillmore	2	Playas	Yes	2A
3206:					
Josburg loam, 0 to 2 percent slopes	Fillmore	2	Playas	Yes	2A
3340:					
Wewela fine sandy loam, 0 to 2 percent slopes	Fillmore	2	Playas	Yes	2A
	Ponded soils	1	Depressions	Yes	2B3
3710:					
Cass fine sandy loam, rarely flooded	Loup	2	Swales	Yes	2B3
3951:					
Fillmore silt loam, occasionally ponded	Fillmore	99	Playas	Yes	2A
	Ponded soils	1	Depressions	Yes	2B3
4215:					
Blackloup loam, rarely flooded	Blackloup, rarely flooded	82	Flood plains	Yes	2B3
	Blackloup, occasionally flooded	14	Flood plains	Yes	2B3
4216:					
Blackloup loam, occasionally flooded	Blackloup, occasionally flooded	77	Flood plains	Yes	2B3
	Blackloup, rarely flooded	14	Flood plains	Yes	2B3
	Fluvaquents, sandy, frequently flooded	5	Flood plains	Yes	2B2, 3
	Barney	4	Flood plains	Yes	2B3

Hydric Soils

Holt County, Nebraska

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
4243:					
Ord loam, rarely flooded	Gannett	3	Swales	Yes	2B3
	Loup	2	Swales	Yes	2B3
4352:					
Elsmere fine sandy loam, rarely flooded	Gannett	3	Swales	Yes	2B3
	Loup	2	Swales	Yes	2B3
4370:					
Libory loamy fine sand, 0 to 3 percent slopes	Wt at 0-1 foot	1	Swales	Yes	2B3
4450:					
Blown-out land-Valentine complex, 0 to 60 percent slopes	Tryon	3	Swales	Yes	2B2, 3
	Marlake, frequently ponded	2	Depressions	Yes	2B2, 3
4498:					
Dunday loamy sand, 0 to 3 percent slopes	Wt at 0-1 foot	1	Swales	Yes	2B3
4512:					
Dunn loamy sand, 0 to 3 percent slopes	Ponded soils	1	Depressions	Yes	2B3
4553:					
Elsmere loamy fine sand, 0 to 3 percent slopes	Loup	2	Swales	Yes	2B3
4560:					
Elsmere-Ipage loamy fine sands, 0 to 3 percent slopes	Loup	2	Swales	Yes	2B3
4650:					
Ipage loamy sand, 0 to 3 percent slopes	Loup	2	Swales	Yes	2B3
4662:					
Loup fine sandy loam, 0 to 1 percent slopes	Loup	100	Interdunes, Swales	Yes	2B3
4669:					
Loup fine sandy loam, frequently ponded	Loup	100	Interdunes, Swales	Yes	2B3, 3
4683:					
Marlake fine sandy loam, frequently ponded	Marlake, frequently ponded	100	Depressions, Interdunes	Yes	2B2, 3
4721:					
Pivot loamy sand, 0 to 3 percent slopes	Fillmore	2	Playas	Yes	2A

Hydric Soils

Holt County, Nebraska

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
4781:					
Valentine fine sand, 0 to 3 percent slopes	Tryon, frequently ponded	3	Swales	Yes	2B2, 3
	Marlake, frequently ponded	2	Depressions	Yes	2B2, 3
4791:					
Valentine fine sand, 3 to 9 percent slopes	Tryon, frequently ponded	3	Swales	Yes	2B2, 3
	Marlake, frequently ponded	2	Depressions	Yes	2B2, 3
4807:					
Valentine fine sand, rolling	Tryon	2	Swales	Yes	2B2, 3
4858:					
Valentine-Els complex, 0 to 9 percent slopes	Loup	5	Swales	Yes	2B3
	Marlake, frequently ponded	3	Depressions	Yes	2B2, 3
	Tryon	2	Swales	Yes	2B2, 3
6320:					
Barney-Boel-Calamus complex, channeled	Barney, channeled, frequently flooded	50	Flood plains	Yes	2B3
	Fluvaquents, sandy, frequently flooded	11	Flood plains	Yes	2B2, 3
	Blackloup, wet	3	Flood plains	Yes	2B3
6575:					
Trent silt loam, 0 to 2 percent slopes	Fillmore	2	Playas	Yes	2A
6640:					
Boelus loamy sand, 0 to 3 percent slopes	Ponded soils	1	Depressions	Yes	2B3
8420:					
Boel loamy fine sand, occasionally flooded	Barney	3	Flood plains	Yes	2B3
	Loup	2	Swales	Yes	2B3
8425:					
Boel-Inavale complex, channeled, frequently flooded	Barney, channeled, frequently flooded	5	Flood plains	Yes	2B3
	Blackloup	3	Flood plains	Yes	2B3
	Fluvaquents, frequently flooded	2	Flood plains	Yes	2B2, 3

Hydric Soils

Holt County, Nebraska

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
9905:					
Fluvaquents, sandy-Fluvaquents, loamy complex, frequently flooded	Fluvaquents, sandy, frequently flooded	68	Flood plains	Yes	2B2, 3
	Fluvaquents, loamy, frequently flooded	25	Flood plains	Yes	2B2, 3
	Histosols	6	Fens	Yes	1, 3, 4
	Barney	1	Flood plains	Yes	2B3, 4

Explanation of hydric criteria codes:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1.) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2.) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3.) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Appendix C

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: HOLT Sampling Date: 6/4/12

Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-1

Investigator(s): TM; PM Section, Township, Range: NE 1/4 Section 29, T 30N, R9W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): _____ Slope (%): 0-1

Subregion (LRR): G Lat: 42.549025 Long: -98.392976 Datum: DD

Soil Map Unit Name: (4662) Loup fine sandy loam (Hydric) NWI classification: PEMA; adj: to PEMA

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes X	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
(PEMC) Sedge meadow – large area that is weber to northeast and southwest – series of meadows that is adj to N. Branch Verdigre Creek.
corresponds to W12.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: r=5')			
1. Carex brevior	40	YES	FAC
2. Carex vulpinoidea	20	YES	FACW
3. Andropogon gerardii	3		FACU
4. Spartina pectinata	20	YES	FACW
5. Eleocharis obtusa	2		OBL
6. Trifolium repens	2		FACU
7. Carex hystericina	3		OBL
8. Carex lasiocarpa	10		OBL
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Other species throughout. See orchid report TM.

SOIL

Sampling Point: SP-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR2/1	100	NA					loamy muck, soft.
5-12	10YR2/1	30	NA					sandy loam, soft.
	10YR5/3	70	10YR5/8	20	RMKS	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Hydric - Soil Survey → Depth to GW 23 cm (subirrigated).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ___

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

Remarks:

→ Surface water previously observed in area during prior SWCS survey.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: HOLT Sampling Date: 6/4/12

Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-2

Investigator(s): TAA, PM Section, Township, Range: SE 1/4 Section 20, T30N, R9W

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): _____ Slope (%): 0-2

Subregion (LRR): G Lat: 42.554254 Long: -98.388236 Datum: NAD

Soil Map Unit Name: (4669) Loup fine sandy loam, frequently ponded (Hydric) NWI classification: PEMC

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
(PEMC) w/ small pockets of PEMF and PEMA fringe - Large basin that continues beyond NW ROW boundaries and south of roads. Potential whooping crane stopover habitat.
* Corresponds to wetland WR.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: r=5')			
1. Eleocharis obtusa	45	YES	OBL
2. Carex brevior	15	NO	FAC
3. Carex hystericina	10		OBL
4. Carex interior	5		OBL
5. Carex tribuloides	5		OBL
6. Potentilla hyparctica (Persicaria)	10		FACW
7. Schoenoplectus fluviatilis	1		OBL
8. Carex scoparia	1		FACW
9. Juncus effusus	1		OBL
10. Thelypteris palustris	1		OBL
	94 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Additional species observed throughout area - see orchid report.
Inundated portions to south dominated by Typha angustifolia, Scirpus atrovirens, and various sedges/rushes, and burreed.

SOIL

Sampling Point: SP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100	N/A					loamy muck, sat.
8-12	10YR 5/3	100	10YR 5/8	60	Ra/CS	M		sandy loam, sat.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: S.1 Survey – Hydric – water at surface (0 cm). Submerged.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ___

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

Remarks: Surface water at south end.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: HOLT Sampling Date: 6/4/12
Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-3
Investigator(s): TPA, PM Section, Township, Range: SE 1/4 Section 19, T 30N, R 9W
Landform (hillslope, terrace, etc.): Wet Meadow Local relief (concave, convex, none): _____ Slope (%): 0-1
Subregion (LRR): G Lat: 42.556311 Long: -98.405371 Datum: DD
Soil Map Unit Name: (4553) Elsmere loamy fine sand, 0-3% slopes NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ✓ No _____
Hydric Soil Present? Yes ✓ No _____
Wetland Hydrology Present? Yes ✓ No _____
Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:
(PEMA) Sedge meadow. Large area of hay meadow that appears to traditionally have cultivated east; however, a recent 1/4-section was installed to east.
* wetland w94.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Juncus interior	15		FAC
2. Eleocharis obtusa	20	YES	OBL
3. Poa pratensis	10		FACU
4. Carex brevior	25	YES	FAC
5. Calamagrostis canadensis	5		FACW
6. Carex vulpinoidea	25	YES	FACW
Other 7. Trifolium repens			FACU
8. Achillea millefolium			FACU
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
✓ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR2/1	100	n/a					loamy, silty, sand, moist
10-16	10YR5/3	100	10YR5/8	15	C	M	Prom, 1/4"	silty sand, sat.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soil Survey – Loup, inclusions hydric, Depth to water 69 cm.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10"

Wetland Hydrology Present? Yes X No ___

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

Remarks: Adj. to tributary of N. Branch Verdigris Creek to north.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: Holt Sampling Date: 6/4/12
Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-4
Investigator(s): JPA, PM Section, Township, Range: SW ¼ Section 15, T 30N, R9W
Landform (hillslope, terrace, etc.): Meadow/Swale Local relief (concave, convex, none): _____ Slope (%): 0-2
Subregion (LRR): G Lat: 42.572378 Long: -98.356710 Datum: DD
Soil Map Unit Name: (4533) Elsmere loamy fine sand, 0-3% slopes NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
(Remote) – Meadow south of tree grove w/ seep hydrology (not observed) but based on geomorphic. Wetland continues to south toward N. Branch Verdigre Creek. Subirrigated. potential. * Corresponds to wetland 12.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r = 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: r = 15')			
1. Populus deltoides	2	NO	FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: r = 5')			
1. Juncus interior	15		FAC
2. Carex meadii brevior	15		FAC
3. Verbena hastata	10		FACW
4. Solidago gigantea (no bloom)	5		FAC
5. Urtica dioica diversifolia	5		FAC
6. Panicum virgatum	15		FAC
7. Poa pratensis	10		FACU
8. Achillea millefolium	~~35~~ 5		FACU
9. Spartina pectinata	25	YES	FACW
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
✓ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	20						loamy sand, moist
	10YR 4/2	40						
	10YR 5/4	40	2.5YR 3/6	30	C	M		loamy sand, sat.
5-12	10YR 4/2	100	2.5YR 5/8	60	C/CS	M/PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Soil Survey - Loop includes hydric; depth to water 69 cm.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 5"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Seep hydrology from woodlands to north.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: HOLT Sampling Date: 6/5/12
Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-5
Investigator(s): TPA, PW Section, Township, Range: SE 1/4 Section 2, T30N, R9W
Landform (hillslope, terrace, etc.): R. prairie / meadow Local relief (concave, convex, none): _____ Slope (%): 0-2
Subregion (LRR): G Lat: 42.596743 Long: -98.327528 Datum: DD
Soil Map Unit Name: (6320) Barney-Bod-Calamus complex, channeled. NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓ No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:
(PEMC) – Sedge meadow in riparian corridor abutting North Branch Verdigris Creek.
*Corresponds to Wetland WIBe.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: r=15')			
1. Ulmus rubra americana	1	NO	FAC
2.			
3.			
4.			
5.			
	1 = Total Cover		
Herb Stratum (Plot size: r=5')			
1. Juncus interior	20	YES	FAC
2. Juncus effusus	10		OBL
3. Schoenoplectus tuberculosus	15		OBL
4. Carex sp.	30	YES	≥ FAC
5. Hordeum jubatum	5		FACW
6. Verbena hastata	10		FACW
7. Poa sp.	1		≥ FAC
8. Persicaria hydropiper	2		OBL
9. Carex hystericina	1		OBL
10. Rumex crispus	1		FAC
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
✓ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP-5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/1	100	10YR6/8	15	C	M		silty clay, moist
4-6	10YR5/4	100	NA		RM			sand
5-8	10YR3/2	100	10YR4/6	40	C	PL		silty sandy clay
8-12	10YR5/1	100	NA		RM			sand
	~~10YR5/1~~		10YR4/6	30	C	PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Soil Survey → hydric (50% Barney); depth to water 23 cm.; frequent flooding.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: GP City/County: HOLT Sampling Date: 6/6/12

Applicant/Owner: Grande Prairie Wind LLC State: NE Sampling Point: SP-6

Investigator(s): TPR, PM Section, Township, Range: SW 1/4 Section 29, T31N, R10W

Landform (hillslope, terrace, etc.): Riparian/meadow Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): G Lat: 42.630928 Long: -98.514129 Datum: DD

Soil Map Unit Name (234e) Inavale sand, channeled, frq. flooded NWI classification: NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
(PEMC) – Sedge meadow / riparian adj. to Spring Creek.
to correspond to Wetland W7.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 1≤5')			
1. Spartina pectinata	4		FACW
2. Bleachyia dilatsa	30	YES	OBL
3. Carex brevior	10		FAC
4. Carex interior	20	YES	OBL
5. Hordeum jubatum	20	YES	FACW
6. Carex sparganioides	15		FACW
7. Juncus interior	2		FAC
8.			
9.			
10.			
	101 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP-16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	100	10YR4/6	20	C	PL		silty sand, soft.
8-12	10YR3/1	100	10YR 4/6	40	C	PL		silty sand, soft.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- • Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

Soil Survey – hydric inclusions; depth to water >200 cm. ~~to Soil survey must~~ ~~verify on TOPO~~

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Appendix D

Photolog

Photos Taken: 4-8 June 2012

Photo 1 - View north at Wetland N53/Wetland W12 located approx. 0.35-m west of North Branch Verdigre Creek. This area is seasonally flooded and surface water was observed near the south boundary. Despite the proximity to the stream, hydrology is subirrigated and a mosaic of wet meadows are present throughout the stream corridor.

Photo 2 - View southeast at Wetland W124, a PABGh wetland with a PEMC wetland fringe. The wetland area abuts the riparian corridor of North Branch Verdigre Creek.

Photo 3 - View east along North Branch Verdigre Creek and the riparian corridor comprised of PEMC meadows dominated by sedges and rushes.

Photo 4 - View north at Wetland W146, a PEMC wetland downgradient of an impoundment that was dominated by bluejoint reedgrass, sedges, and spikerush. This area is headwaters to Sandy Creek, which had defined bed and bank to the north of the fence (center). Wetlands continued to the north along the riparian corridor.

Photo 5 - View east at Wetland W2, a PFO/PEMF/PABG wetland complex abutting Steel Creek. Vegetation shown in the photo included duckweed, arrowhead, bulrushes, rushes, sedges, cottonwood, and willows.

Photo 6 - View north at Wetland W65, a PEMC wetland with a PEMA fringe that is located upgradient of a breached impoundment. Aerial photographs from 2010 indicate a pond in this area. Dominant species throughout this area included rushes, curly dock, foxtail barley, and western ragweed.

Photo 7 - View north at Wetland W53, a PSS/PEMA/C hay meadow along an unnamed tributary of Redbird Creek. Dominant vegetation throughout included yarrow, cattail, sandbar willow, sedges, rushes, and bluejoint reedgrass.

Photo 8 - View west along Spring Creek and its riparian corridor. Wetland W7 is depicted on the left and consists of sedge meadow. The channel of Spring Creek was mostly dry and consisted of a sandy bottom; however, other portions were vegetated.

Photo 9 - View east at an unnamed tributary of Louse Creek. The channel was dry and consisted of a sand bed. Portions of the channel were vegetated with non-hydrophytic species. Upland areas consisted of pasture.

Photo 10 - View southeast at an unnamed tributary of North Branch Verdigre Creek, from a county road. The channel was approximately 5-ft wide, and had a sand bed that was dry.

Photo 11 - View northeast at Wetland N158, a PABFh wetland as mapped by the NWI. Slight adjustments to the NWI boundary were required. This wetland area is representative of the majority of impoundments located in pastures throughout the study area.

Photo 12 - View north at Wetland W11, a PEMC wetland abutting a tributary of Redbird Creek. The riparian corridor was comprised a large wetland complex including emergent, scrub shrub, forested, and unconsolidated bottom communities.

Photo 13 - View west at cultivated farmland toward Wetland N107. The NWI depicted several wetlands in this area; however, due to cultivation no wetland characteristics were evident other than crop stress and geomorphic position. This area appeared to be well drained.

Photo 14 - View northwest at Wetland N171, a PEMC wetland as depicted by the NWI. The wetland area was located in a pivot corner that also served as a feeding lot.

Photo 15 - View west at Wetland N67, a PEMC wetland as depicted by the NWI. Aerial imagery depicted inundation in this area, but soils at the time of the site visit were dry and sparesly vegetated as shown in the photo.

Photo 16 - View east at Wetland W94, a PEMA hay meadow dominated by sedges and rushes. This large meadow abutted a tributary of North Branch Verdigre Creek to the north, and was connected to Wetland W12 to east via a roadside ditch. This area had isolated pockets of uplands.

Photo 17 - View southeast at uplands used as pasture, that was characterized as remnant-native mixedgrass prairie. This area included a mix of both needleandthread and introduced forage species such as smooth brome.

Photo 18 - View north at a black-tailed prairie dog colony located in improved pasture.

Appendix E

Tables

Table 1. Wetlands on Leased Properties within the Grande Prairie Wind Farm Study Area				
Wetlands Delineated on June 4-8, 2012				
ID	**Cowardin[1]**	**Fig.**	**Comments**	**Opinion of Jurisdictional Status**
W1	PEMC	5E 5F	Emergent wetland located within a series of wetlands abutting Steel Creek; dominated by sedges, rushes, cattail, and foxtail barley.	Yes - abuts Steel Creek.
W2	PFO/PEMF/PABG	5E 5F	A large complex comprised of emergent, forested, and aquatic bed wetlands; including several wetlands identified on the NWI.	Yes - abuts Steel Creek.
W3	PEMC	5B 5E	Riparian emergent wetland with pockets of forested and aquatic bed wetlands; dominated by sedges.	Yes - abuts an unnamed tributary o Louse Creek.
W4	PEMC	5A 5B	Riparian emergent wetland dominated by Kentucky bluegrass and sedges	Yes - abuts an unnamed tributary o Louse Creek
W5	PEMC	5D 5E	Riparian emergent wetland dominated by sedges.	Yes - abuts an unnamed tributary o Louse Creek
W6	PEMC	5D	Riparian emergent wetland dominated by sedges, bulrush and cordgrass	Yes - abuts an unnamed tributary o Louse Creek
W7	PEMC	5D 5G	SP-6. Riparian emergent wetland dominated by sedges.	Yes - abuts Spring Creek.
W8	PEMC	5J	Riparian emergent wetland with pockets of forested wetlands; dominated by sedges and cottonwood	Yes - abuts an unnamed tributary o Redbird Creek.
W9	PEMC	5I	Riparian emergent wetland upgradient of an impoundment; dominated by bulrush and switchgrass on the fringes	Yes - abuts tributary to North Branch Verdigre Creek.
W10	PEMC	5I 5M	Riparian emergent wetland with pockets of PABGh and forested wetlands; dominated by sedges, willows, and cottonwoo	Yes - abuts tributary to North Branch Verdigre Creek.
W11	PEMC	5J	Riparian emergent wetland with pockets of unconsolidated bottom, scrub shrub and forested communities; dominated by sedges.	Yes - abuts tributary of Redbird Creek.
W12	PEMA/C/F	5L	SP-1, SP-2, and SP-4. Large wetland complex of subirrigated meadow and temporarily/ seasonally/semipermanently flooded emergent wetlands with pockets of forested communities; uplands scattered throughout (not dominant). NWI wetlands throughout.	Yes - abutting or adj. to North Branch Verdigre Creek.
W13	PEMA	5J	Narrow wetland along drainage; dominated by sedges and foxtail barley.	Likely yes - along drainage with bed and bank that is tributary to Redbird Creek.
W14	PEMC	5J	Shallow depression that is temporarily flooded.	Likely not - appears isolated in pasture with no sig. nexus to a TNW via a RPW.
W15	PEMC	5J	Riparian located upgradient of Wetland W11.	Yes - abuts tributary of Redbird Creek.
W16	PEMA	5J	Riparian located upgradient of Wetland W15.	Yes - abuts tributary of Redbird Creek.
W17	PEMC	5J	Riparian fringe adj. to PABGh on NWI, with pockets of forested and scrub shrub; dominated by bulrush, sedges, arrowhead, and willow.	Yes - abutting unnamed tributary of Redbird Creek.
W18	PEMA	5J	Depression along swale; dominated by curly dock and pennycress.	Likely not - located along a swale with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W19	PEMA	5J	Depression along swale; dominated by curly dock and foxtail barley.	Likely not - located along a swale with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W20	PAB/PEMF	5J	Riparian wetland complex with ponds and emergent fringe that includes a temporarily and seasonally flooded fringe; dominated by true aquatic plants, smartweed and sedges.	Yes - abuts an unnamed tributary o Redbird Creek.

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W21	PEMA	5J 5N	Riparian wetland dominated by foxtail barley.	Yes - abuts an unnamed tributary o Redbird Creek.
W22	PABF/PEMC	5N	Pond and riparian wetland dominated by sedges	Likely yes - wetland continues west and abuts a tributary of Redbird Creek.
W23	PEMA	5N	Overflow from stock tank that was heavily disturbed by cattle.	Likely not - located along a swale with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W24	PEMA/C	5J	Riparian along a drainage.	Likely yes - located along a drainage with bed and bank that is tributary to Redbird Creek.
W25	PEMA	5J	Riparian along a drainage.	Likely yes - located along a drainage with bed and bank that is tributary to Redbird Creek.
W26	PEMA	5J 5N	Riparian along a drainage.	Likely yes - located along a drainage with bed and bank that is a tributary of Redbird Creek.
W27	PEMA	5J	Shallow depression in pasture.	Likely not - appears isolated in pasture with no sig. nexus to a TWW via a RPW.
W28	PEMC	5N	Depression in ag. field; cultivated.	Likely not - appears isolated in field with no sig. nexus to a TNW via a RPW.
W29	PEMC	5N	Depression in ag. field; cultivated.	Likely not - appears isolated in field with no sig. nexus to a TNW via a RPW.
W30	PEMC	5N	Depression in ag. field; cultivated.	Likely not - appears isolated in field with no sig. nexus to a TNW via a RPW.
W31	PEMA	5N	Depression in ag. field; cultivated.	Likely not - appears isolated in field A swale is present; however, no bed and bank
W32	PEMA	5J	Ditch wetland adjacent to PEMC wetland depicted by NWI; in east road ditch dominated by foxtail barley, Kentucky bluegrass, and smartweed.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W33	PEMC	5K	Ditch wetland adjacent to PEMC wetland depicted by NWI; in west road ditch dominated b cattails.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W34	PEMC	5K	Ditch wetland opposite of Wetland W33 in east road ditch; dominated by cattails.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W35	PFO/PEMA	5D	Riparian along drainage upgradient of a pond.	Likely yes - abuts an unnamed tributary of Spring Creek
W36	PFO/PEMC	5D	Riparian forested and emergent wetland dominated by peachleaf willow, sedges, and rice cutgrass.	Likely yes - abuts Spring Creek.
W37	PEMAh	5D	An impoundment; vegetation dominated by spikerush and foxtail barley.	Likely not - no drainage with define bed and bank is located downgradient of the wetland; thus, no sig. nexus to a TNW via a RPW.
W38	PEMAh	5D	An impoundment with sparesly vegetated concave surface.	Likely not - no drainage with define bed and bank is located downgradient of the wetland; thus, no sig. nexus to a TNW via a RPW.
W39	PFO/PEMC	5D	Riparian wetland dominated by peachleaf willow and cottonwood	Likely yes - abuts an unnamed tributary of Spring Creek
W40	PEMC	5A 5D	Riparian located upgradient of an impoundment; dominated by sedges	Likely yes - abuts an unnamed tributary of Spring Creek
W41	PABGh/PEMC	5A	Riparian emergent wetlands and pond along a drainage; dominated by arrowhead, sedges, and bulrush.	Likely yes - abuts an unnamed tributary of Spring Creek.

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W42	PEMA/C	5A	Riparian wetland fringe surrounding pond; dominated by arrowhead, sedges, bulrush, foxtail barley, and field pennycress	Likely yes - headwaters of an unnamed tributary of Spring Creek.
W43	PEMC	5A	Same as Wetland W42; also located in west roadside ditch.	Likely yes - headwaters of an unnamed tributary of Spring Creek.
W44	PEMC	5A	Riparian wetland along drainage, dominated by cattails.	Likely yes - headwaters of an unnamed tributary of Spring Creek.
W45	PEMC	5A	Ditch wetland in east road ditch that is dominated by rushes, sedges, and cattails.	Likely not - appears isolated in the roadside ditch with no sig. nexus to a TNW via a RPW.
W46	PEMC	5A	Riparian and ditch wetland downgradient of pond dominated by arrowhead, cattail, reed canarygrass, duckweed, and bluejoint reedgrass.	Likely yes - abuts an unnamed tributary of Spring Creek. Channel 2-ft wide and flowing west.
W47	PEMA	5A	Riparian wetland upgradient of a pond; dominate by sedges and rushes.	Likely yes - abuts an unnammed tributary of Spring Creek.
W48	PEMC	5A	Riparian located upgradient of large pond; dominated by cattails, cordgrass, bulrush, rushes, and spikerush.	Likely yes - abuts an unnamed tributary of Redbird Creek.
W49	PEMC	5A	Riparian located between two large ponds.	Likely yes - abuts an unnamed tributary of Redbird Creek
W50	PEMC	5A	Riparian connecting two large ponds.	Likely yes - abuts an unnamed tributary of Redbird Creek
W51	PFO/PEMC	5A	Riparian forested and emergent wetland complex dominated by willow, bulrush, sedges, spikerush and arrowhead	Likely yes - abuts an unnamed tributary of Redbird Creek.
W52	PEMA	5A	Shallow depression located in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W53	PSS/PEMA/C	5A	Hay meadow along a drainage that is dominated by yarrow, cattail, sandbar willow, sedges, rushes, needle and thread, and bluejoint reedgrass.	Likely yes - abuts an unnamed tributary of Redbird Creek.
W54	PUBGh	5A	Impoundment along drainage in pasture.	Likely yes - bed and bank is located downgradient; abuts an unnamed tributary of Redbird Creek.
W55	PEMC	5D	Riparian located along drainage.	Likely yes - abuts an unnamed tributary of Spring Creek
W56	PFO/PEMA	5D	Riparian located along drainage.	Likely yes - abuts an unnamed tributary of Spring Creek
W57	PFO	5D	Riparian located along drainage.	Likely yes - abuts an unnamed tributary of Spring Creek
W58	PEMA	5K	Depression receiving overflow from stock tank in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W59	PUBG	5J 5K	Depression receiving overflow from a stock tank in pasture.	Likely not - appears isolated with no sig. nexus to a TNW vai a RPW.
W60	PEMA	5O	Riparian wetland along drainage; dominated by curly dock and smartweed.	Likely not - located along a blue line on the topo. map, but only an upland swale exists downgradent; thus, no sig. nexus to a TNW via a RPW.
W61	PEMA	5O	Depression in ag. field; cultivated.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W62	PEMA	5O	Depression in ag. field; cultivated.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W63	PEMA	5O	Depression in ag. field; cultivated.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.

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W64	PFOA	5D	Riparian located along drainage in pivot corner; dominated by peachleaf willow and marijuana.	Likely yes - abuts Louse Creek.
W65	PEMC	5D	A former pond with a breached dam; dominated by rushes, curly dock, foxtail barley, and western ragweed.	Likely yes - abuts Louse Creek.
W66	PEMA	5B	Subirrigated hay meadow; dominated by sedge, rushes and prairie cordgrass.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W67	PEMA	5B	Subirrigated hay meadow; dominated by sedges and rushes.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W68	PEMA	5B	Same as Wetland W67.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W69	PEMA	5A 5B	Same as Wetland W67.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W70	PEMA/C	5B	Riparian hay meadow adjacent to PSS/PEMC roadside ditch; ditch inundated.	Likely yes - located adjacent to Louse Creek via a series of culverts in the roadside ditch that convey surface waters east and south.
W71	PFO/PEMC	5B	Riparian abutting creek; dominated by black willow, peachleaf willow, arrowhead, cattail, and bulrush.	Likely yes - abuts Louse Creek.
W72	PFO/PEMC	5A 5B	Riparian wetland along Louse Creek; dominated by peachleaf willow, rushes, and sedges.	Likely yes - abuts Louse Creek.
W73	PEMA	5D	Riparian wetland dominated by sedges.	Likely yes - adjacent to Louse Creek.
W74	PEMA	5E	Depression along drainage near the outfall of an upgradient impoundment	Likely yes - abuts an unnamed tributary of Louse Creek
W75	PEMC	5E	Riparian wetland along drainage; dominated by sedges and rushes	Likely yes - abuts an unnamed tributray of Louse Creek
W76	PEMA	5E	Riparian wetland along drainage.	Likely yes - abuts an unnamed tributary of Louse Creek
W77	PEMA	5G 5H	Ditch wetland in west roadside ditch opporsite of an NWI PEMA wetland in the east ditch.	Likely not - appears isolated in the roadside ditch with no sig. nexus to a TNW via a RPW.
W78	PEMA	5O	Wetland in north roadside ditch that is dominated by smartweed and sedges.	LIkely not - appears isolated in the roadside ditch with no sig. nexus to a TNW via a RPW.
W79	PEMA	5K	Riparian wetland along drainage; dominated by blunt spikerush and foxtail barley.	Likely yes - abuts an unnamed tributary of North Branch Veridgre Creek.
W80	PEMA	5K	Riparian wetland along drainage; dominated by foxtail barley.	Likely yes - abuts an unnamed tributary of North Branch Verdigre Creek.
W81	PEMA	5K	Small depression dominated by foxtail barley.	Likely yes - located adjacent to an unnamed tributary of North Branch Verdigre Creek
W82	PEMA	5K	Small depression in pasture; dominated by foxtail barley.	Likely not - appears isolated in pasture with no sig. nexus to a TNW via a RPW.
W83	PEMCh	5E	An impoundment along a drainage.	Likely yes - abuts an unnamed tributary of Louse Creek
W84	PUBGh	5E	An impoundment along a drainage.	Likely yes - abuts an unnamed tributary of Louse Creek
W85	PEMA	5B	Riparian wetland along drainage.	Likely yes - abuts a drainage with bed and bank that conveys surface waters to an unnamed tributary of Louse Creek
W86	PEMA	5B	Riparian wetland that is dominated by sedges.	Likely yes - abuts an unnamed tributary of Louse Creek

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
W87	PEMC	5B	Meadow in east roadside ditch and adj. pasture; dominated by pink clover, rushes, bluejoint reedgrass, and yarrow	Likely yes - wetland extends to west via culverts and abuts Sandy Creek.
W88	PEMC	5B	Meadow in west roadside ditch and extending westward.	Likely yes - wetland continues westward and abuts Sandy Creek.
W89	PEMA	5B	Depression in west roadside ditch.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W90	PEMA	5B	A depression within a broad swale; dominated by foxtail barley.	Likely not - located within a swale w/o bed and bank; thus, no sig. nexus to a TNW via a RPW.
W91	PEMA	5B	A depression located adj. to a stock tank in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W92	PUBGh	5E	An impoundment with no wetland fringe.	Likely yes - abuts an unnamed tributary of Louse Creek
W93	PEMA	5E	Small depression in pivot corner.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W94	PEMA	5L	SP-3. Subirrigated hay meadow with isolated pockets of uplands and mesic grasslands throughout; dominated by sedges and rushes. Apparent meadow to the east was recently converted to an ag. pivot.	Likely yes - abuts an unnamed tributary of North Branch Verdigre Creek to north, and abuts Wetland W12 to east via wet ditches.
W95	PEMA	5L	Hay meadow that is dominated by sedges and rushes.	Likely yes - abuts an unnamed tributary of North Branch Verdigre Creek.
W96	PEMC	5L	Emergent wetland in north roadside ditch; dominated by cattails.	Likely yes - connects Wetlands W94 and W12; abutting North Branch Verdigre Creek
W97	PEMC	5L	Emergent wetland in south roadside ditch; dominated by cattails.	Likely yes - connects Wetlands W94 and W12; abutting North Branch Verdigre Creek
W98	PEMA	5L	Hay meadow that is dominated by sedges and rushes.	Likely yes - abuts an unnamed tributary of North Branch Verdigre Creek.
W99	PFO/PEMA	5L	Depression in pivot corner.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W100	PEMA	5L	Depression in pivot corner.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W101	PEMA	5E	Riparian wetland along drainage.	Likely yes - abuts an unnamed tributary of Steel Creek
W102	PUBGh	5E	Impoundment.	Likely yes - bed and bank downgradient which conveys surface waters to an unnamed tributary of Steel Creek
W103	PUBGh	5B 5E	Impoundment.	Likely yes - bed and bank downgradient which conveys surface waters to an unnamed tributary of Squaw Creek
W104	PABGh	5B	Impoundment located 700-ft upgradient of Squaw Creek.	Likely yes - wetlands continue eastward and abuts Squaw Creek.
W105	PFO/PEMC	5B	Riparian forested and emergent wetlands dominated by black willow, peachleaf willow, cottonwood, reed canarygrass, and bulrush.	Likely yes - continues east of road via culverts and abuts Squaw Creek.
W106	PABGh	5B	Impoundment upgradient of a series of wetlands.	Likley yes - wetlands continue to southeast and abut Squaw Creek.
W107	PFO/PEMC	5B	Ditch wetland that continues eastward; dominate by cattails, bulrush, and sedges	Likely yes - wetland continues to east and abut Squaw Creek

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W108	PFO/PEMC	5B	Riparian forested and emergent wetlands dominated by willow, bulrush, cattails, and sedges.	Likely yes - wetlands continue to east and abut Squaw Creek.
W109	PABGh/PFO	5B	Impoundment located between Wetlands W106 and W108.	Likely yes - wetlands continue to east and abut Squaw Creek
W110	PEMC	5C	Riparian wetland along drainage and at the outfall of an impoundment	Likley yes - abuts an unnamed tributary of Steel Creek
W111	PEMAh	5E	Impoundment that is temporarily flooded and dominated by foxtail barley	Likely yes - abuts an unnamed tributary of Steel Creek
W112	PABGh	5E 5F	Impoundment along Steel Creek.	Likely yes - abuts Steel Creek.
W113	PFOA	5F	Riparian along Steel Creek and the outfall of a impoundment to the east; willows and cottonwood	Likely yes - abuts Steel Creek.
W114	PEMA	5F	Riparian wetland between an impoundment and Steel Creek; dominated by sedges.	Likely yes - abuts Steel Creek.
W115	PEMAh	5F	Impoundment.	Likely yes - bed and bank downgradient which connects to an unnamed tributary of Steel Creek.
W116	PEMCh	5E	Impoundment located adjacent to Steel Creek.	Likely yes - adjacent to Steel Creek.
W117	PEMA	5E	Riparian wetland dominated by smartweed and rushes.	Likely yes - abuts Steel Creek.
W118	PEMA	5L	Depression in pasture.	LIkely not - appears isolated with no sig. nexus to a TNW via a RPW.
W119	PEMA	5L	Depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W120	PEMA	5L	Depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W121	PEMA	5L	Depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W122	PEMA	5L	Depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W123	PEMA	5L	Subirrigated meadow in pasture; dominated by sedges and rushes.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W124	PABGh	5L	Large pond with PEMC fringe dominated by cattail, bulrush, arrowhead, and mannagrass.	Likely yes - abuts North Branch Verdigre Creek.
W125	PEMA	5L	Small depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W126	PEMA	5L	Small depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W127	PEMA	5L	Small depression in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W128	PEMC	5L	Small depression in pasture.	Likely not - in a swale with no bed and bank and surrounded by uplands; thus, no sig. nexus to a TNW via a RPW.
W129	PEMA	5I 5L	Meadow in pasture.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W130	PFO/PEMA	5I	Riparian along drainage that is dominated by peachleaf willow, bluegrass, cordgrass, and sedges.	Likely yes - located along an unnamed tributary of North Branch Verdigre Creek

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W131	PEMA	5I	Depression in pivot corner, sparsely vegetated.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
W132	PUBGh	5F	Impoundment along drainage with 5-ft wide PEMA fringe dominated by barnyard grass	LIkely yes - abuts an unnamed tributary of Steel Creek
W133	PEMC	5C	Located in east roadside ditch along a drainage; dominated by cattail, scouring rush, sedges.	Likely yes - abuts an unnamed tributary of Steel Creek; wetland continues to east
W134	PFOA	5C	Riparian along drainage; dominated by peachleaf willow, green ash, elm, Russian olive, and cottonwood	Likely yes - abuts an unnamed tributary of Steel Creek.
W135	PEMC	5I	Riparian along drainage; dominated by sedges, rushes, and foxtail barley.	Likely yes - abuts an unnamed tributary of North Branch Veridgre Creek.
W136	PEMC	5I	SP-5. Riparian wetland dominated by sedges, rushes, and bulrush.	Likely yes - abuts North Branch Veridgre Creek
W137	PEMC	5I	Riparian meadow dominated by sedges and rushes; pockets of upland throughout	Likely yes - abuts North Branch Verdigre Creek
W138	PEMA	5I	Riparian wetland along drainage.	Likely yes - adjacent to an unname tributary of North Branch Verdigre Creek.
W139	PEMC	5I	Riparian wetland along drainage.	Likely yes - adjacent to an unname tributary of North Branch Verdigre Creek.
W140	PUBGh	5I	Impoundment.	Likely yes - bed and bank downgradient that connects to a tributary of North Branch Verdigre Creek.
W141	PEMAh	5I	Impoundment, dry, disturbed by cattle.	Likely not - an upland swale downgradient with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W142	PEMAh	5I	Impoundment, dry, disturbed by cattle.	Likely not - an upland swale downgradient with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W143	PEMC	5F	Riparian along a drainage, inundated, dominated by duckweed, smartweed, and sedges.	Likely yes - abuts a tributary of North Branch Verdigre Creek.
W144	PEMC	5F	Riparian located along a drainage and upgradient of an impoundment	Likely yes - abuts a tributary of North Branch Verdigre Creek
W145	PFOA	5I	Impoundment, dry, dominated by cottonwood.	Likely not - an upland swale downgradient with no bed and bank; thus, no sig. nexus to a TNW via a RPW.
W146	PEMC	5B	Downgradient of impoundment outfall, saturated, dominated by bluejoint reedgrass, sedges, and spikerush.	Likely yes - abuts Sandy Creek.
W147	PEMA	5B	Hay meadow and west roadside ditch; dominated by prairie cordgrass.	Likely yes - likely considered adjacent to Louse Creek based on shallow groundwater connection; meadow continues on east side of road.
W148	PEMC	5I 5L 5M	Riparian wetland abutting North Branch Veridgre Creek; pockets of scrub shrub and forested wetlands.	Likely yes - abuts North Branch Verdigre Creek.
W149	PEMA	5G	Riparian wetland along drainage.	Likely yes - abuts an unnamed tributary of Redbird Creek
W150	PEMA	5O	Depression in ag. field; cultivated.	Likely not - appears isolated with no sig. nexus to a TNW via a RPW.
NWI Wetlands				
N1	PABGh	5A	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N2	PEMC	5B	Freshwater Emergent Wetland	Likely not - appears isolated in pasture with no sig. nexus to a TNW via RPW.

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N3	PABFh	5B	Freshwater Pond	Likely yes - adj. to Louse Creek.
N4	PEMA	5B	Freshwater Emergent Wetland	Likely not - appears isolated in pasture with no sig. nexus to a TNW via RPW.
N5	PABFh	5B	Freshwater Pond	Likely yes - abutting Sandy Creek.
N6	PABFh	5A	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N7	PEMC	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N8	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N9	PABFh	5J	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N10	PEMA	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N11	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N12	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N13	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N14	PABFh	5J	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N15	PEMA	5D	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Spring Creek.
N16	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N17	PABFx	5O	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N18	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N19	PFOA	5P	Freshwater Forested/Shrub Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N20	PABFh	5J	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N21	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N22	PABFh	5G	Freshwater Pond	Likely yes - adj. to unnamed trib. of Redbird Creek.
N23	PEMA	5N	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N24	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N25	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N26	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N27	PABFx	5J 5K	Freshwater Pond	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N28	PEMA	5H 5I	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N29	PEMA	5L	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N30	PEMC	5J 5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N31	PEMC	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N32	PEMC	5K	Freshwater Emergent Wetland	Likely yes - defined bed and bank downgradient; abuts unnamed tributary of North Branch Verdigre Creek.
N33	PUSCh	5G	Other	Likely yes - adj. to unnamed trib. of Redbird Creek
N34	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N35	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N36	PABFh	5J	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N37	PEMAd	5J	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N40	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N41	PEMC	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N42	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N43	PEMA	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N44	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N45	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N46	PEMC	5J	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N47	PEMC	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N48	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N49	PEMCd	5N	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N50	PEMC	5J 5N 50	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N51	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N52	PEMC	5J 5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N53	PEMC	5L	SP-2. Large basin with pockets of PEMF and a PEMA fringe; Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N54	PEMC	5J 5N	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N55	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N56	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N57	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N58	PUSCh	5A	Other	Likely not - downgradient bed bank transitions to swale
N59	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N60	PEMC	5L 5P	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N61	PEMA	5D	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Spring Creek.
N62	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N63	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N64	PABFh	5G	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N65	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N66	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N67	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N68	PEMA	5L	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N69	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N70	PEMA	5N	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N71	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N72	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N73	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N74	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N75	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N76	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N77	PUSCh	5D	Other	Likely yes - abutting or adj. to trib. of Spring Creek.
N78	PEMA	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N79	PEMC	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N80	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N81	PEMC	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N82	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N83	PABFh	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N84	PABFh	5N	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N85	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N86	PEMAd	5K	Freshwater Emergent Wetland	Likely yes - abutting trib. of North Branch Verdigre Creek
N87	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N88	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N89	PEMCd	5K	Freshwater Emergent Wetland	Likely yes - abutting trib. of North Branch Verdigre Creek
N90	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N91	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N92	PABFx	5J	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N93	PEMCh	5B 5E	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Louse Creek or its tributaries
N94	PABFh	5J	Freshwater Pond	Likely yes - abutting or adj. to trib. of Redbird Creek
N95	PEMA	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N96	PABFx	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N97	PABFh	5G	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N98	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N99	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N100	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N101	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N102	PABFh	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N103	PFOA	5O	Freshwater Forested/Shrub Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N104	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N105	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N106	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N107	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N108	PUBFx	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N109	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N110	PABFx	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N111	PABFx	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N112	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N113	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N114	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N115	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N116	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N117	PABFh	5D	Freshwater Pond	Likely yes - bed and bank downgradient adj. to trib. of Spring Creek.
N118	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N119	PABFx	5E	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N120	PABFh	5J	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N121	PEMA	5G 5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N122	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N123	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N124	PEMC	5N	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N125	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N126	PEMA	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N127	PABFx	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N128	PEMC	5A	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Spring Creek.
N129	PEMA	5B	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Louse Creek or its tributaries
N130	PUBFx	5L	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N131	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N132	PABFh	5G	Freshwater Pond	Likely yes - adj. to unnamed trib. of Redbird Creek.
N133	PEMA	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N134	PEMC	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N135	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N136	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N137	PEMC	5H 5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N138	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N139	PEMC	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N140	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N141	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N142	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N143	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N144	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N145	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N146	PEMA	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N147	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N148	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N149	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N150	PEMC	5K	Freshwater Emergent Wetland	Likely yes - abutting unnamed trib. of North Branch Verdigre Creek.
N151	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N152	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N153	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N154	PUBFx	5L	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N155	PABFh	5K	Freshwater Pond	Likely yes - in ag. field with bed and bank; abutting trib. of North Branch Verdigre Creek
N156	PABFh	5G	Freshwater Pond	Likely yes - adj. to unnamed trib. of Redbird Creek.
N157	PABFx	5G	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N158	PABFh	5D 5G	Freshwater Pond	Likely yes - adj. to unnamed trib. of Redbird Creek.
N159	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N160	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N161	PEMC	5A	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Spring Creek.
N162	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N163	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N164	PEMCd	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N165	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N166	PABFx	5D	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N167	PEMC	5E	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Lous Creek or its tributaries
N168	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N169	PAB/EMFh	5L	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N170	PUSCh	5G	Other	Likely yes - abutting or adj. to trib. of Spring Creek.
N171	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N172	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N173	PEMC	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N174	PFOC	5J	Freshwater Forested/Shrub Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N175	PABFh	5E	Freshwater Pond	Likely yes - abutting unnamed trib. of Steel Creek
N176	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N177	PEMAd	5J 5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N178	PEMA	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N179	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N180	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N181	PABFx	5A	Freshwater Pond	Likely yes - abutting or adj. to trib. of Spring Creek.
N182	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N183	PEMA	5E	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N184	PUSCh	5D	Other	Likely yes - abutting or adj. to Lous Creek or its tributaries
N185	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N186	PUSCh	5E	Other	Likely yes - abutting or adj. to Lous Creek or its tributaries
N187	PEMCd	5L	Freshwater Emergent Wetland	Likely yes -abutting a trib. to North Branch Verdigre Creek
N188	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N189	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N190	PABFx	5D	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N191	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N192	PUBFx	5L	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N193	PEMC	5J 5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N194	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N195	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N196	PEMAd	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N197	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N198	PABFx	5J	Freshwater Pond	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N199	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N200	PABFh	5E	Freshwater Pond	Likely yes - abutting unnamed trib. of Steel Creek
N201	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N202	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries
N203	PABFh	5B	Freshwater Pond	Likely yes - abutting or adj. to Lous Creek or its tributaries

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N204	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N205	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N206	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N207	PEMA	5L	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N208	PABFh	5E	Freshwater Pond	Likely yes - abutting Squaw Creek.
N209	PUBFx	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N210	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N211	PEMA	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N212	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N213	PEMC	5K	Freshwater Emergent Wetland	Likely yes - defined bed and bank downgradient; abuts unnamed tributary of North Branch Verdigre Creek.
N214	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N215	PABFh	5D	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N216	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N217	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N218	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N219	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N220	PEMA	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N221	PABFx	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N222	PEMC	5J	Freshwater Emergent Wetland	Likely yes - abutting or adj. to trib. of Redbird Creek
N223	PEMA	5J	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N224	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N225	PEMC	5H	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N226	PEMC	5E	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Louse Creek or its tributaries
N227	PEMC	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N228	PEMC	5N	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N229	PUBFx	5B	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N230	PEMA	5K	Freshwater Emergent Wetland	Likely not - appears isolated in ag. field with no sig. nexus to a TNW via RPW.
N231	PABFh	5D 5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N232	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N233	PEMA	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N234	PEMA	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N235	PEMA	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N236	PEMC	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N237	PEMA	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N238	PEMA	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N239	PEMAd	5O	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N240	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N241	PABFx	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N242	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N243	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N244	PABFh	5I	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N245	PABFh	5F	Freshwater Pond	Likely not - appears isolated along a swale with no sig. nexus to a TNW via RPW.
N246	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N247	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N248	PFOC	5I	Freshwater Forested/Shrub Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N249	PABGh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N251	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N252	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N253	PEMC	5I	Freshwater Emergent Wetland	Likely yes - bed and bank downgradient adj. to trib. of North Branch Verdigre Creek
N254	PEMA	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N255	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N256	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N257	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N258	PABFh	5M	Freshwater Pond	Likely yes - abutting trib. of North Branch Verdigre Creek
N259	PEMA	5I	Freshwater Emergent Wetland	Likely yes - bed and bank downgradient adj. to trib. of North Branch Verdigre Creek
N260	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N261	PABGh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N262	PEMA	5L	Freshwater Emergent Wetland	Likely yes - part of large wetland complex abutting North Branch Verdigre Creek
N263	PABFh	5I	Freshwater Pond	Likely yes - bed and bank downgradient adj. to trib. of North Branch Verdigre Creek
N264	PABFh	5I	Freshwater Pond	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N265	PABFh	5I 5M	Freshwater Pond	Likely yes - abutting trib. of North Branch Verdigre Creek
N266	PEMA	5I	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N267	PABFh	5C	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N268	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N269	PEMC	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N270	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N271	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N272	PEMA	5L	Freshwater Emergent Wetland	LIkely not - appears isolated with no sig. nexus to a TNW via a RPW.
N273	PEMC	5L	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N274	PEMA	5I	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N275	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N276	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N277	PEMC	5I	Freshwater Emergent Wetland	Likely not - appears isolated with no sig. nexus to a TNW via RPW.
N278	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N279	PEMC	5I	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N280	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N281	PEMA	5I	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N282	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N283	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N284	PEMA	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N285	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N286	PFOA	5I	Freshwater Forested/Shrub Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N287	PEMA	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N288	PABFh	5C	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N289	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N290	PEMC	5L 5M	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N291	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N292	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N294	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N295	PEMA	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N296	PEMC	5M	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N298	PABFh	5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N299	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N300	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N301	PABFh	5I 5M	Freshwater Pond	Likley yes - abutting unnamed trib. of North Branch Verdigre Creek.
N302	PEMC	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N303	PEMC	5L	Freshwater Emergent Wetland	Likely yes - adj. to North Branch Verdigre Creek
N304	PEMA	5I	Freshwater Emergent Wetland	Likely yes - bed and bank downgradient; unnamed trib. of North Branch Verdigre Creek
N305	PEMA	5L 5M	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N306	PABFh	5F	Freshwater Pond	Likely yes - riparian; abutting unnamed trib. to North Branch Verdigre Creek

ID	Cowardin[1]	Fig.	Comments	Opinion of Jurisdictional Status
N307	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N308	PEMC	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N309	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N310	PABFh	5I	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N311	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N312	PABFh	5F	Freshwater Pond	Likely not - appears isolated along a swale with no sig. nexus to a TNW via RPW.
N313	PEMA	5I	Freshwater Emergent Wetland	Likley yes - abutting trib. of North Branch Verdigre Creek
N314	PEMC	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries
N315	PUBFx	5L	Freshwater Pond	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N316	PABFh	5M	Freshwater Pond	Likley yes - abutting unnamed trib. of North Branch Verdigre Creek.
N317	PABFh	5E 5F	Freshwater Pond	Likely yes - abutting or adj. to Steel Creek or its tributaries
N318	PEMA	5L	Freshwater Emergent Wetland	Likely yes - riparian; abutting or adj. to North Branch Verdigre Creek.
N319	PABFh	5E	Freshwater Pond	Likely yes - abutting or adj. to Louse Creek or its tributaries
N320	PEMA	5F	Freshwater Emergent Wetland	Likely yes - abutting or adj. to Steel Creek or its tributaries

[1] Cowardin classifications are listed in Table 2.

Table 2. Cowardin Classifications

NWI Classification Code	Definition
PABF	Palustrine Aquatic Bed Semipermanently Flooded
PABG	Palustrine Aquatic Bed Intermittently Exposed
PEMA	Palustrine Emergent Temporarily Flooded
PEMC	Palustrine Emergent Seasonally Flooded
PEMF	Palustrine Emergent Semipermanently Flooded
PFOA	Palustrine Forested Temporarily Flooded
PFOC	Palustrine Forested Seasonally Flooded
PSSC	Palustrine Scrub-Shrub Seasonally Flooded
PUBF	Palustrine Unconsolidated Bottom Semipermanently Flooded
PUBG	Palustrine Unconsolidated Bottom Intermittently Exposed
PUSC	Palustrine Unconsolidated Shore Seasonally Flooded

Modifiers

x Excavated

d Partly Drained/Ditched

h Diked/Impounded