



CATEGORICAL EXCLUSION

TO: All Interested Citizens, Government Agencies and Public Groups

In accordance with the Nebraska Clean Water State Revolving Fund environmental review process, which is based on the National Environmental Policy Act, an environmental review has been performed on the proposed agency action below:

This information reviews the environmental impact likely from a project. This project is planned to be federally funded wholly or in part through your tax dollars; therefore, you are entitled to take part in its review. If you have concerns about the environmental impact of this project, please provide them at this time. The Nebraska Department of Environmental Quality (NDEQ) encourages public input in this decision-making process.

PROJECT NAME: Verdigre Wastewater Irrigation Pivot
APPLICANT: Verdigre, Nebraska
COUNTY: Knox County
POPULATION: 575 (2010 Census)
CWSRF PROJECT NUMBER: C318008
NDEQ ID No.: 57857
AWIN SUSTAINABILITY SCORE: 18
TOTAL PROJECT AMOUNT: \$220,300
ESTIMATED CWSRF LOAN FORGIVENESS AMOUNT: \$110,150
ESTIMATED CWSRF LOAN AMOUNT: \$110,150

The Village of Verdigre is located in Knox County in northeastern Nebraska. The 2010 census population was 575. A NDEQ Notice of Violation (NOV) was issued on October 1, 2018 for discharging wastewater to Verdigre Creek without an NPDES authorization. A Village response was received November 1, 2018 as required by the NOV. The Village stated that it was at risk of overtopping all 3 cells of the complete retention lagoon system. The discharge to Verdigre Creek began on September 19, 2018 and ended on October 11, 2018. Analytical test results were tested on the discharged wastewater and were found under typical wastewater lagoon discharge parameter limitations.

The Village hired a Consulting Engineer who prepared a Technical Memorandum recommending a wastewater pivot irrigation system be installed immediately north or northeast of the lagoon system. In reviewing the system records, higher than normal precipitation occurred in 2013, 2016, and 2018. The annual precipitation rate for the last 4 years averaged 29.2 inches per year and the complete retention system had been designed for 23 inches per year average. This made for a net accumulation of two feet of extra water in the lagoon system. Their analysis showed that the system might need to discharge anywhere from 1 million gallons per year to 6 million gallons depending on varying precipitation and evaporation. Existing domestic wastewater flows were analyzed and found to correlate with the original design parameter of 39,000 gallon per day, 68 gallons per capita per day or 14.2 million gallons per year. The conclusion of the Engineer was the lagoon system cannot maintain a good balance of water strictly relying on evaporation especially during a series of wet

years. Land application will be necessary to maintain the storage capacity of the lagoon system. The Engineer calculated approximately 30 acres would be needed to apply four inches of water per year assuming an average of 3.4 million gallons of water to apply per irrigation season. The landowner immediately to the north of the site has expressed some interest in receiving the water. He has two areas that are farmed (see maps).

A wastewater sample was collected and tested for suitability of irrigation water. It was noted the levels of sodium, chloride, conductivity, and phosphorus were above a level defined as optimum for irrigation. It was thought that these values are more concentrated because the wastewater has been contained for approximately 8 years, so salts may have concentrated. A pivot irrigation system is the most efficient system to land apply requiring an irrigation pump, motor, and force main to the pivot. Three phase power would need to be extended to the pump or as an alternate diesel, or propane engine motor could be coupled to the pump. The Village prefers an electric service at this time so fueling issues would not be needed.

The project is eligible for financing through the Clean Water State Revolving Loan Fund (CWSRF) and is listed on the planning list of the SFY2019 Intended Use Plan (IUP). Verdigre qualifies for a 20-year loan at a current green project interest rate of 1.25 percent. In addition to principal and interest payments, an administrative fee of 1.0 percent of the outstanding principal balance would be assessed each year. Verdigre also qualifies for 50% loan forgiveness capped at \$150,000 due to their 2016 Median Household Income of \$38,214 and AWIN sustainability risk ranking of 18, considered a high sustainability risk.

Sewer use fees would be pledged to repay the loan. Current residential sewer use rates are a winter metered rate of \$32.50 per month base plus \$2.20 per 1,000 gallons water used. The Village of Verdigre is estimated to have approximately 306 residential and commercial sewer connections. Sewer rates would need to be raised by \$2.20 per month to cover the debt service and 10 percent coverage requirement. This would equate to an average sewer rate of \$45.70 per month for a monthly water use of 5,000 gallons.

The project will result in continued wastewater collection and treatment of sewage flows from the Village by increasing storage capacity at their complete retention wastewater treatment lagoons. The project will have a positive impact on the environment and avoid an unauthorized discharge to Verdigre Creek. The project will comply with NDEQ Title 119 Chapter 12, Land Application of Domestic Effluent. Treated effluent shall be land applied at an agronomic rate and monitored for the following parameters: pH, Total Kjeldahl Nitrogen, Nitrate and Nitrogen, Ammonia as Nitrogen, Total Dissolved Solids, Chloride, Phosphorous, and Sodium Adsorption Ratio.

The review did not indicate a significant environmental impact would result from the proposed action. The project is located outside the 100 year flood plain of Verdigre Creek. The project will monitor for nesting and migratory birds, which could be disturbed by construction. The construction contract documents will require the contractor to satisfy the requirements of the Federal Migratory Bird Treaty Act. The project does not discriminate against any segment of the community's population nor suffers disproportionately from human health or environmental effects.

The project was reviewed for eligibility for a categorical exclusion from National Environmental Policy Act review specified in 40 CFR (Code of Federal Regulations) Part 6.204. The project meets all criteria described in the above reference and the Department has determined that this project is eligible for categorical exclusion. Consequently, a preliminary decision has been made that a Finding of No Significant Impact will not be prepared. The project as proposed is solely replacement of existing facilities.

Justification for categorical exclusion includes:

- The proposed action is not known or expected to have potentially significant environmental impacts on the quality of the human environment either individually or cumulatively over time;
- The proposed action is not known or expected to significantly affect federally listed threatened or endangered species or their critical habitat;
- The proposed action is not known or expected to significantly affect national natural landmarks or any property with nationally significant historic, architectural, prehistoric archeological or cultural value, including but not limited to, property listed on or eligible for the National Register of Historic Places;
- The proposed action is not known or expected to significantly affect environmentally important natural resource areas as wetlands, prime farmland, floodplains, wild and scenic rivers, and significant fish or wildlife habitat. The existing wastewater lagoons and the proposed land application sites outside the 100 year floodplain and 57 feet to ground water.
- The proposed action is not known or expected to have a significant effect on the pattern and type of land use (industrial, commercial, agricultural, recreational, residential) or growth and distribution of population including altering the character of existing residential areas, or may not be consistent with state or local government, or federally-recognized Indian tribe approved land use plans or federal land management plans.
- The proposed action is not known or expected to cause significant public controversy about a potential environmental impact of the proposed action.

The Nebraska Department of Environmental Quality shall revoke the categorical exclusion and shall require a full environmental review if, subsequent to the granting of exclusion, the state determines that the proposed project no longer meets the requirements for a categorical exclusion due to changes in the proposed project; or new evidence reveals that serious local or environmental issues exist; or federal, state, local or tribal laws are being violated.

This action is taken on the basis of careful review of the application and other supporting data, which are on file in the office of the NDEQ. These are available for public review upon request. Persons having a comment on this categorical exclusion determination are encouraged to submit such comments directly to Tom Fuenning, Review Engineer, of the Technical Assistance Section of NDEQ, who can be reached at (402) 471-4989 or email: tom.fuenning@nebraska.gov.

Signed this 8th day of February, 2019.

Sincerely,

Jim Macy
Director

JM/tsf

Attachments:

Distribution List
Maps

CATEGORICAL EXCLUSION DISTRIBUTION LIST
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DEPARTMENT OF THE ARMY
John Moeschen
State Program Manager
US Army Corps of Engineers
Nebraska State Office, Suite 1
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Omaha, NE 68138-3621

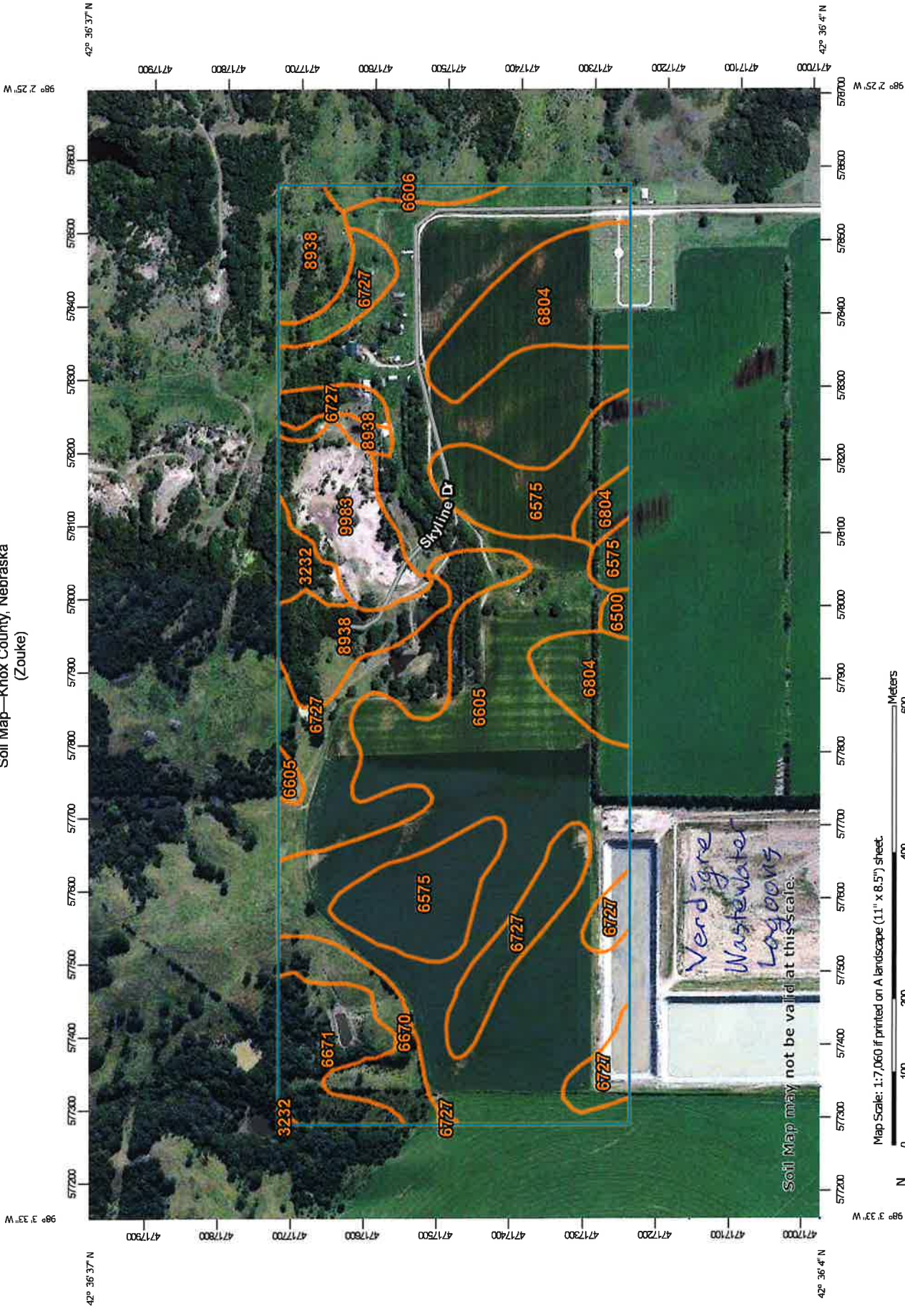
APPLICANT:
David Wickett, Chairman
Village of Verdigre
PO Box 330
301 South Main Street
Verdigre, NE 68793-0330

CONSULTING ENGINEER:
Roger Protzman, P.E.
JEO Consulting
803 W Norfolk Ave.
Norfolk, NE 68701

LOCAL NEWSPAPER:
Verdigre Eagle
202 Main St.
Verdigre, NE 68783
(Public Information Only not for Public Notice)

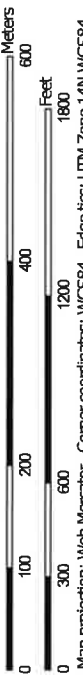
NATURAL RESOURCES DISTRICT:
Lower Niobrara NRD
PO Box 350
410 Walnut St.
Butte, NE 68722-0350

Soil Map—Knox County, Nebraska
(Zouke)







































Soil Map may not be valid at this scale.

Map Scale: 1:7,060 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

- Area of Interest (AOI)**
- Area of Interest (AOI) 
- Soils**
- Soil Map Unit Polygons 
- Soil Map Unit Lines 
- Soil Map Unit Points 
- Special Point Features**
- Blowout 
- Borrow Pit 
- Clay Spot 
- Closed Depression 
- Gravel Pit 
- Gravelly Spot 
- Landfill 
- Lava Flow 
- Marsh or swamp 
- Mine or Quarry 
- Miscellaneous Water 
- Perennial Water 
- Rock Outcrop 
- Saline Spot 
- Sandy Spot 
- Severely Eroded Spot 
- Sinkhole 
- Slide or Slip 
- Sodic Spot 
- Water Features**
- Streams and Canals 
- Transportation**
- Rails 
- Interstate Highways 
- US Routes 
- Major Roads 
- Local Roads 
- Background**
- Aerial Photography 
- Spill Area 
- Stony Spot 
- Very Stony Spot 
- Wet Spot 
- Other 
- Special Line Features 

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Knox County, Nebraska
Survey Area Data: Version 14, Sep 2, 2016

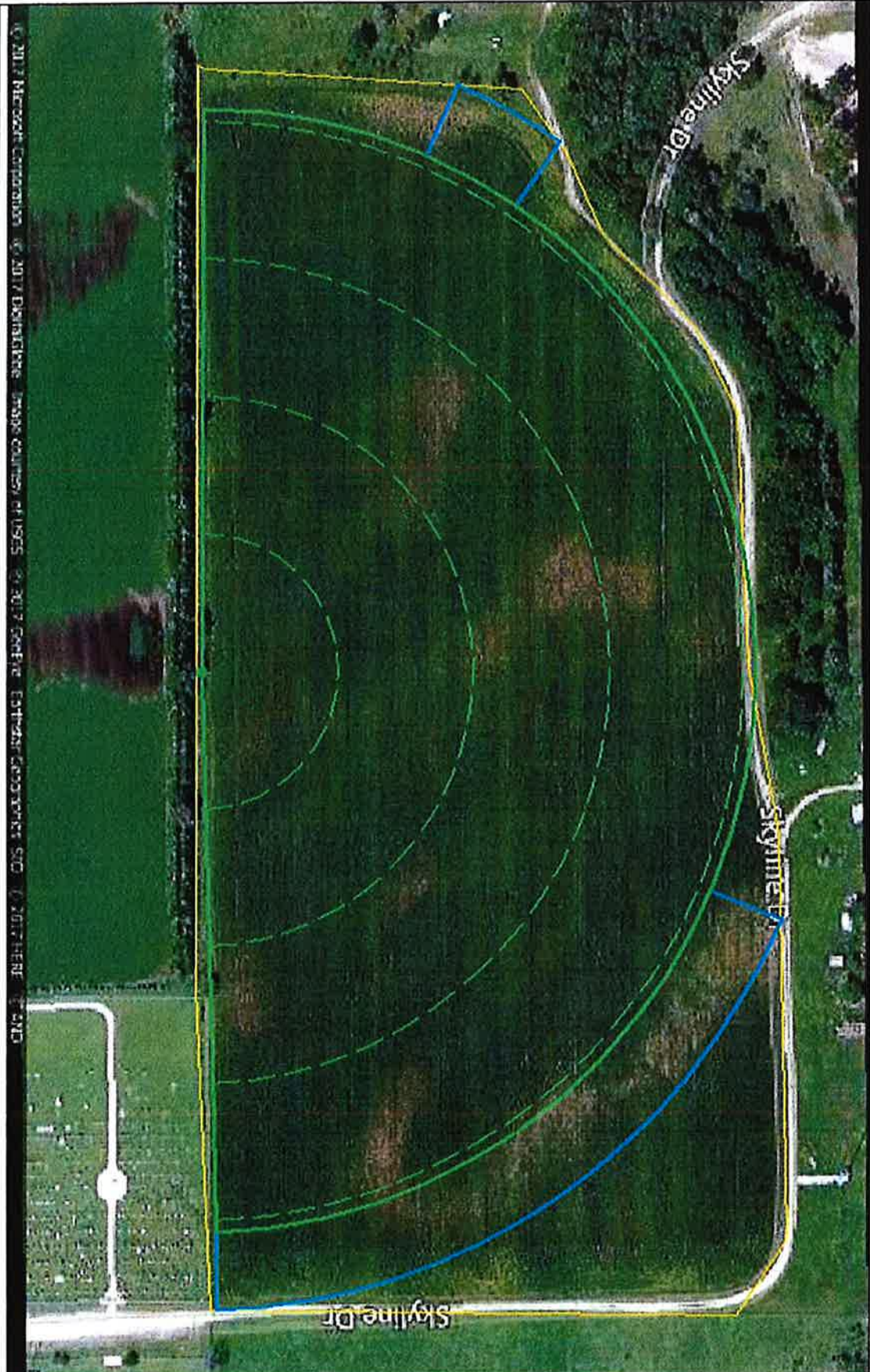
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 1, 2010—May 5, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Knox County, Nebraska (NE107)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3232	Lynch-Bristow complex, 11 to 30 percent slopes	1.8	1.2%
6500	Bazile loam, 0 to 2 percent slopes	0.6	0.4%
6575	Trent silt loam, 0 to 2 percent slopes	14.1	9.2%
6605	Bazile loam, 2 to 6 percent slopes	71.5	46.6%
6606	Bazile loam, 6 to 11 percent slopes	1.3	0.9%
6670	Crofton-Thurman complex, 11 to 17 percent slopes, eroded	4.9	3.2%
6671	Crofton-Thurman complex, 17 to 30 percent slopes	6.0	3.9%
6727	Thurman fine sandy loam, 2 to 11 percent slopes	22.3	14.6%
6804	Moody loam, 0 to 2 percent slopes	13.9	9.0%
8938	Simeon-Thurman complex, 6 to 30 percent slopes	9.9	6.5%
9983	Gravel pit	7.1	4.6%
Totals for Area of Interest		153.5	100.0%



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Petersen Ag Systems, Inc. Norfolk, NE 402-379-9849 office

Pivot 1

Pivot Area: **19.25** acres
 Endgun Area: **2.38** acres
 Total Area: **21.63** acres

System Length: **733.92** ft
 # of Spans: **4 + overhang**
 Deg. of Sweep: **178.4°**
 Endgun Throw: **100.0** ft

Color on map:



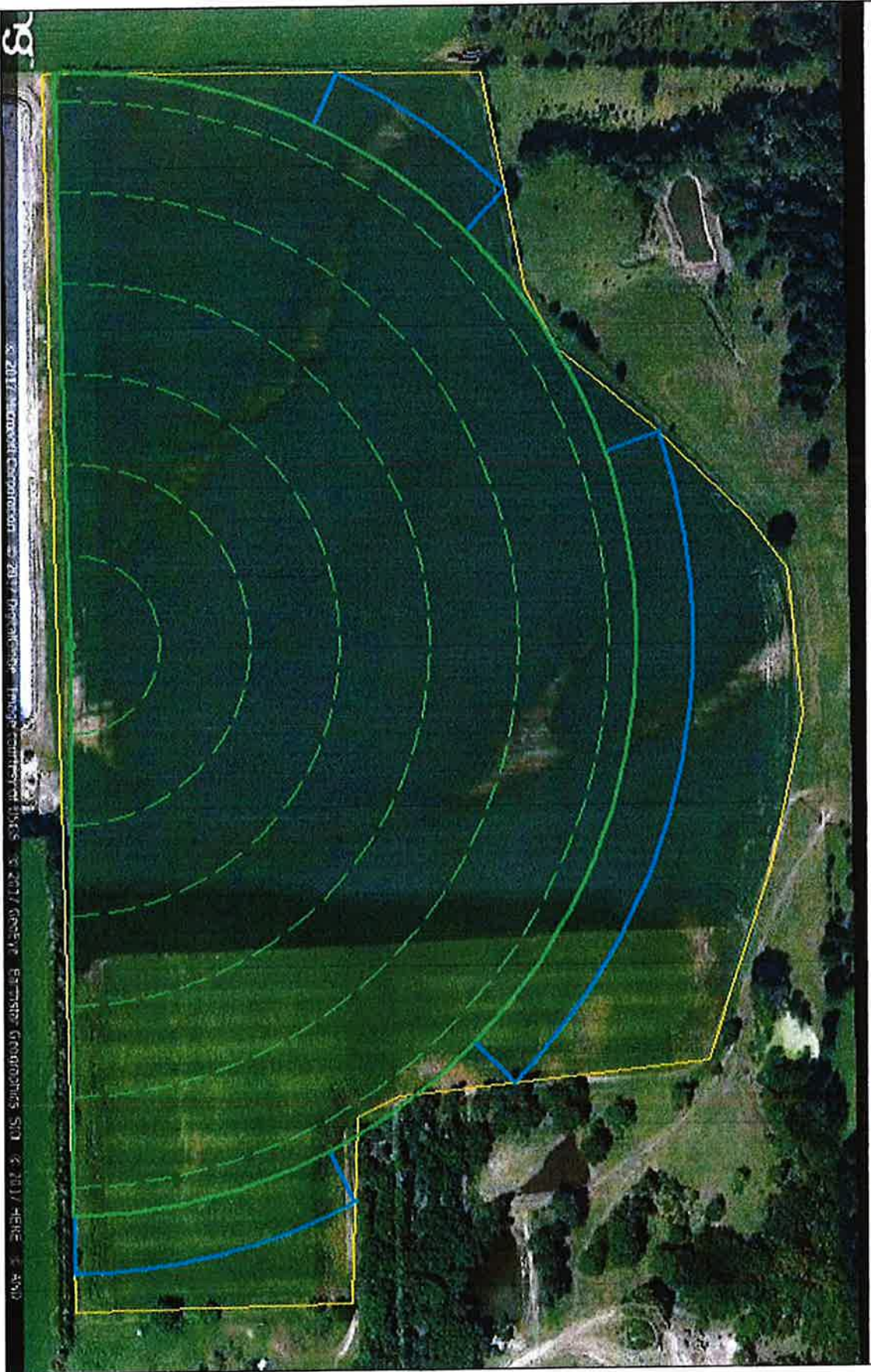
Spans

# of Spans: 4	Span 1 <i>(180.2)</i>	Span 2 <i>(359.1)</i>	Span 3 <i>(538.0)</i>	Span 4 <i>(716.9)</i>	Overhang <i>(733.9)</i>
Length:	179	179	179	179	11 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 100.0 ft)

# of Areas: 2	Start / Stop Angle <i>(Deg. from North)</i>	Start / Stop Angle <i>(Deg. from Pivot Start)</i>	Start / Stop Location <i>(Lat/Long)</i>		Area <i>(acres)</i>
Area 1	294.6° / 305.1°	23.9° / 34.4°	42.605002491° -98.048251893°	42.605321724° -98.048004243°	0.33
Area 2	23.8° / 89.0°	113.1° / 178.4°	42.606008364° -98.044673492°	42.604198402° -98.043045637°	2.05



Petersen Ag Systems, Inc. Norfolk, NE 402-379-9849 office

Pivot 2

Pivot Area: **35.91** acres
 Endgun Area: **4.58** acres
 Total Area: **40.49** acres

System Length: **993.50** ft
 # of Spans: **6 + overhang**
 Deg. of Sweep: **181.6°**
 Endgun Throw: **100.0** ft

Color on map:



Spans

# of Spans: 6	Span 1 (158.1)	Span 2 (315.2)	Span 3 (472.2)	Span 4 (629.3)	Span 5 (786.4)	Span 6 (943.5)	Overhang (993.5)
Length:	157	157	157	157	157	157	44 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 100.0 ft)

# of Areas: 3	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	296.1° / 314.9°	27.0° / 45.9°	42.605398747° -98.056895761°	42.606125959° -98.056193307°	0.79
Area 2	341.4° / 45.3°	72.3° / 136.2°	42.606784482° -98.054756858°	42.606119079° -98.050958153°	2.67
Area 3	63.7° / 90.5°	154.6° / 181.4°	42.605409006° -98.050271795°	42.604176993° -98.049889183°	1.12